

INPOS 2022

INTERNATIONAL POSTGRADUATE RESEARCH SYMPOSIUM 2022

**RIGOR AND RELEVANCE:
ADVANCING RESEARCH FOR IMPACT**

26-27 OCTOBER 2022 | EASTIN HOTEL, PENANG

**PROGRAMME
AND
PROCEEDING BOOK**

**International Postgraduate Research Symposium
2022 (INPOS 2022)**

**“Rigor and Relevance:
Advancing Research for Impact”**

This conference was organized by School of Management, Universiti Sains Malaysia.

Authors retain copyright for their own papers. School of Management holds copyright for the compiled volume.

**International Postgraduate Research Symposium 2022 (INPOS 2022)
Rigor and Relevance: Advancing Research for Impact.
Eastin Hotel, Penang
26-27 October 2022**

**Published in 2023 by
School of Management
Universiti Sains Malaysia
11800 USM, Penang
Malaysia**

e ISBN 978-629-97843-0-2



INPOS 2022

INTERNATIONAL POSTGRADUATE RESEARCH SYMPOSIUM 2022

**RIGOR AND RELEVANCE:
ADVANCING RESEARCH FOR IMPACT**

26-27 OCTOBER 2022 | EASTIN HOTEL, PENANG

INPOS 2022 HIGHLIGHTS



**Prof. Dr.
Viswanath Venkatesh**

- Eminent Scholar and Verizon Chair of Business Information, Technology
- Director, Executive Ph.D. in Business, Pamplin College of Business, Virginia Tech. USA

H-INDEX **84**
CITATIONS **150235**



**Prof. Dr.
Christian M. Ringle**

- Executive Director Institute of Human Resource Management and Organization, Hamburg University of Technology, Germany

H-INDEX **87**
CITATIONS **145286**



**Prof. Dr.
Peter Seddon**

- Honorary Professor School of Computing and Information Systems at The University of Melbourne, Australia

H-INDEX **45**
CITATIONS **14933**



**Prof.
Weng Marc Lim**

- Dean Sunway University Business School Sunway University Sunway, Malaysia

H-INDEX **38**
CITATIONS **5211**



**Prof.
Ramayah a/I Thurasamy**

- Strategic Advisor School of Management Universiti Sains Malaysia, Penang, Malaysia

H-INDEX **97**
CITATIONS **37788**

Day 1: Virtual talks from top notch scholars

Day 2: Physical Presentation

MESSAGE FROM THE DEAN



Assalamualaikum Warahmatullahi Wabarakatuh, greetings of peace and welcome to Penang, Malaysia. It is a pleasure to welcome all the participants to the Inaugural International Postgraduate Symposium 2022 (INPOS 2022) that will be held from 26th - 27th October 2022. INPOS 2022 is a platform where this time we bring top notch, highly cited, and renowned experts in research methodology. I wish this event will offer participants a platform to exchange ideas, discover novel opportunities, reacquaint with colleagues, meet new friends, and broaden their knowledge. The theme of INPOS 2022 is Rigor and Relevance: Advancing Research for Impact, which aims to emphasize rigor, which includes scientific knowledge, theory and data, as well as to emphasize relevance, which focuses on practical examples, timeliness, and applicability to life.

Setting the world onto pathways of advancing research for impacts, producing research that is useful to both practice and theory during these decades is a clear priority in today's academic institution. This is because the 21st Century is fraught with many hindrances: population growth, natural disaster, green businesses, food security, biodiversity, urbanization, new social structure, interconnectivity domino effects, financial catastrophe, virtual living and many others. We are stuck by how key changes in the landscape of management and organizational research have made it difficult to do works that are rigor and relevance. Consequently, the business-as-usual model will no longer be adequate in which the tasks facing researchers who aspire to relevance is to include many pathways through their academic knowledge generation will stretch to practice and advance for impacts. What is indispensable now is a drastic transformation to cope with a complex network of many stakeholders who play different roles in advancing and applying knowledge rather than as a linear flow from academia to practice. The global challenge that requires not only in our policies and knowledge, but a wide range of policy actions at the national, regional, and global levels. To address this predicament effectively will definitely entail time, coordination and patience, and all scholars are consistently aspired to a make difference on how to engage across boundaries. Hence, we need to ensure rigor research yields knowledge that provides impact to effective organizational decisions and actions.

In line with this, it is my utmost hope that INPOS 2022 can set the stage for more rigorous pursuit of impactful research for theory and practice. With the gathering of intellectual forces from various countries, locals and internationals, I believe INPOS 2022 will be able to ignite the transformation spark and inspire innovative ideas we never imagine possible. I would like to take this opportunity to congratulate Postgraduate Student Society (PGSS) and all administrative staff for organizing this symposium. To all participants I wish you have a pleasant time in Penang and there's going to be lots of catching up to do after the pandemic.

Thank you.

Professor Dr. Noor Hazlina Ahmad,
Dean,
School of Management

ORGANISING COMMITTEE

Patron

Prof. Dr. Noor Hazlina Ahmad

Advisors

Prof. Ramayah Thurasamy

Assoc. Prof. Dr. Zamri Ahmad

Chair

Prof. Dr. Hasliza Abdul Halim

Coordinator

Dr. Nurhafiza Abdul Kader Malim

Secretary

Mrs. Robitah Spian

Treasurer

Mr. Ahmad Hafiz Rasidi

Hospitality

Mrs. Nooraida Mad Naser

Mrs. Norwahida Azwa Abdul Halim

Registration

Mr. Shafi'u Abubakar Kurfi

Printing and Gifts

Mrs. Rosnah Mohamad Saleh

Certificate

Mr. Mohd Faizal Md Fazil

Mrs. Nursyafinatuljannah Anuar

Programme and Proceeding Book

Mr. Awaisu Adamu Salihi

Mrs. Rosa Prafitri Juniarti

Video and Multimedia

Dr. Nor Hasliza Md Saad

Mrs. Rosa Prafitri Juniarti

Technical and Photography

Mr. Muhamad Rizal Mohamed Radi

Master of Ceremony

Mr. Sajjad Hussain

Mrs. Hafiza Safian Shaukat

Paper Discussants

Prof. Dr. Hooy Chee Wooi

Assoc. Prof. Dr. Siti Rohaida Mohamed Zainal

Dr. Nor Hasliza Md Saad

Dr. Md Aslam Mia

ABOUT THE SYMPOSIUM

INPOS @USM is a symposium like no other. A platform where we bring top notch, highly cited, and renowned experts in research methodology. An avenue for all scholars and researchers to immerse themselves in understanding the real meaning of Rigor and Relevance in research. School of Management proudly presents the Inaugural International Postgraduate Symposium 2022 (INPOS 2022) that will be held from 26th - 27th October 2022. Postgraduate students, researchers, and academics are invited to share in the exchange of ideas and experiences dealing with the rigor and relevance of research and management issues globally. Importantly, INPOS 2022 provides opportunities for postgraduate students and researchers to understand the importance of research and aspects of scientific rigor, real-world relevance, and impact. The goal is to enhance the mutual understanding between researchers with diverged values and practices within the relevance and rigorness of advancing research and its impact. Specifically, the objectives are:

- To establish strategic networking and engagement among the academics, students, and community.
- To contribute to new and expanding research ideas from diverse topics.
- To provide a platform for sharing new and expanding research ideas from various areas
- To have interactive sessions among scholars to debate and disseminate research findings undertaken in areas of interest.
- To offer opportunities to academics and students to get feedback from the research ideas and findings presented at the symposium.

The theme of INPOS 2022 is Rigor and Relevance: Advancing Research for Impacts, which aims to emphasize rigor, which includes scientific knowledge, theory and data, as well as to emphasize relevance, which focuses on practical examples, timeliness, and applicability to life. In this digital era, the global economy is very much dependent on advanced technology, where considerable emphasis is placed on the contribution made by business organization to economic growth outside of the academic arena. Consistent with this, researchers and academics are expected to work closely with professionals in the fields of management science, design science, information systems, analytics, finance and others to ensure that there is a body of research and debate about whether applied research can be both rigorous and relevant. With the impact of the Covid-19 crisis, businesses worldwide have been exposed to various challenges. Research needs to be executed with rigor, and relevance, and drive the impact to build resilience for a sustainable future.

Table of Contents

MESSAGE FROM THE DEAN	v
ORGANISING COMMITTEE	vi
ABOUT THE SYMPOSIUM.....	vii
Table of Contents	viii
Institutionalization of Institutional Theory and Shari'ah Audit: A Proposed Model Shafi'u Abubakar Kurfi & Md Harashid Haron.....	1
The effect of Country Level Governance on Financial Reporting Quality: The Case of Nigeria Awaisu Adamu Salihi, Haslindar Ibrahim, & Dayana Mastura Baharudin.....	16
Corporate Environmental and Financial Performance Nexus in Nigeria: The Intervening Role of Board Size Aliyu Sani Shawai ¹ , Lok Char Lee ¹ , & Dayana binti Jalaludin ²	26
Value Relevance Studies in Accounting: A Critical Review Nabila Kabir & Umaru Musa Yar'adua	39
The Impact of the Sovereign Asset and Liability Management (SALM) Application on the Efficient Debt Management Mohammed Mahmoud Feyyad Al – Jaloudi &Haslindar Ibrahim	62
The Quality of Accounting Information and Its Impact on The Financial Stumbling in Industrial Companies in The Northern Region and Accounting Information Systems A Moderating Variable Laith Jabr Ali Daradkeh ¹ , Hasliza Binti abdulhalim ¹ , & Haider Muhammad Bani Atta ²	71
Corporate Social Responsibility and ARAMCO, As a tool of Sustainability for Vision 2030 Syeda Taj Unnisa ^{1,2}	85
The Role of Corporate Governance in Enhancing Financial Performance of Non-Bank Financial Institutions in Jordan Suhaib Mohammed Sulaiman Al-Khazaleh, Haslindar Ibrahim, & Md Aslam Mia.....	92
Managers' Confidence, Product Market Competition and Corporate Cash Holdings In China BO Le & Haslindar Ibrahim	102
ESG Performance and Accounting Conservatism: Evidence from China Capital Market Min Fong Chan, Lian Kee Phua, & Dayana Jalaludin	109
A Conceptual Paper on the Impact of Enterprise Risk Management and Cloud-based Enterprise Resource Planning (ERP) on Firm Performance Kenny Wei Jie Quah & Kun You	118
In contrast, the MCCG of 2012 and 2017: Board Risk Management and Internal Oversight of the Top Malaysian PLCs Dayana Mastura Baharudin, Haslindar Ibrahim, & Awaisu Adamu Salihi.....	126
The Moderating Role of Political Stability on The Relationship Between Audit Committee Characteristics, Board of Director Characteristics and CSR in Jordan Sharaf Salem Mohammad Alhyasat, Haslindar Ibrahim, & Dayana Mastura Baharudin	135
A Conceptual Paper on the Relationship Between Digital Competency, Employee Agility and Employee Performance Among Civil Servants in Malaysian Public University Siti Zaleha Ahmad Nadzim & Hasliza Abdul Halim	143

A Review of Green Innovation Research in Malaysia Mohd Hafizuddin Musa & Hasliza Abdul Halim	154
Lensing Venture Creation Activities from Social Cognitive Career Theory: The Roles of Entrepreneurial Capabilities and Entrepreneurial Support among Graduates Shehu Rabiah Na-Allah & Noor Hazlina Ahmad.....	163
Alliance Portfolio Diversity: Weathering Exogenous Shock for SMEs in an emerging market economy Noor Hasvenda Abd Rahim & Hasliza Abdul Halim.....	190
Perspective on Mental Health Issue Among Twitter Users by Using Sentiment Analysis Eliza Mohd Rasid, Nur Aalia Mohd Nasir, Ooi Boon Hin, Syarifah Nur Nadhirah Syed Jaafar, & Nor Hasliza Md. Saad	201
Based on the Perception of Ethics in Social Commerce Platforms: Adopting SEM and MCDM Approaches for Benchmarking Customers in Rural Communities Abdullah Mohammed Sadaa ¹ , Yuvaraj Ganesan ¹ , Khai Wah Khaw ² , Alhamzah Alnoor ² , Sammar Abbas ³ , XinYing Chew ⁴ , Gül Erkol Bayram ⁵	216
The Effect of Debt Maturity on the Relationship between Corporate Governance, Corporate Risk-Taking and Investment Efficiency: Evidence from Thailand Panern Intara & Abdul Hadi bin Zulkafli	263
The Impact of Corporate Moral Hazard on ESG Performance of The U.S. MNCs: The Interaction Effect of Ownership Structure Zahra El Shlmani, Haslindar Ibrahim, & Muhammad Tahir	278

Institutionalization of Institutional Theory and Shari'ah Audit: A Proposed Model

Shafi'u Abubakar Kurfi & Md Harashid Haron

School of Management, Universiti Sains Malaysia, Malaysia

Corresponding email: shafiu@student.usm.my

Abstract

Institutional Theory (IT) is one of the most widely used theories in many areas of study, especially in the conventional field of specialization. However, the existing literature neglect to apply the three dimensions of the theory to the shari'ah audit amongst Islamic Business Organizations (IBOs) for determining the level of Shari'ah compliance, while the issue of shari'ah audit has been a rapidly growing phenomenon amongst IBOs. Therefore, this study intends to develop a model for the institutionalization of institutional theory in the shari'ah audit amongst IBOs for ensuring Shari'ah compliance.

Keywords: institutionalization; institutional theory; Islamic business organizations shari'ah audit.

Introduction

Institutional Theory (IT) describes the organisation's overall operational guidelines, procedures, rules, and regulations (Alam et. al., 2021). It suggests that companies that operate within an integrated environment are coned by certain rules, regulations, and policies (Fulton, 2017). Also, Scott (2004) opined that IT is becoming more popular and acceptable due to its ultimate description of guidelines for both corporate operations and individuals working in the corporation. Additionally, Meyer and Rowan (1977) and Zucker (1997), who are the theory builders, postulate that IT emphasizes the social character and perception in institutional inquiry. Likewise, Meyer and Rowan (1977) further revealed that such guidelines produced by the firm work as a tradition in institutions that cultivate acquisition legitimacy, constancy, and increased prospects of survival. Therefore, IT is built on that assumption and can be used to examine how institutions respond to these external pressures from other organizations.

From a wider perspective, DiMaggio, and Powell, (1983) proved that IT improves the ability and capacity of countries and institutions to adopt a similar structure, principles, and guidelines as isomorphism. However, Carpenter and Feroz, (2001) lamented that this notion does not certainly make institutions more efficient and effective. Though, Carruthers (1995) revealed that the institutional process is a social and political issue that proved legitimacy and authority more than effectiveness only. Therefore, the countries and institutions can share the same guidelines, laws, and principles for the betterment of their performance and high legitimacy in culture.

In addition, the main concept in IT is that all institutions become one of the same over time; or adopt the same strategies or laws called "isomorphism". It is a term introduced by DiMaggio and Powell (1983) to advance the ideas of Meyer and Rowan (1977) in their bearing at the organizational and social levels in institutional management. Therefore, this study fundamentally relies on the work of DiMaggio and Powell (1991). The main argument for IT is that institutional pressures influence organizations to adopt or adapt certain strategies to those of similar business organizations to improve and/or maintain their relevance and legitimacy in their operational activities (Deephouse, 1996). DiMaggio and Powell (1983) spelt out three fundamental tools for isomorphisms. These are as follows:

Coercive pressure, as postulates by DiMaggio and Powell (1983), is pressure from external organizations on which an organization relies (like government agencies, Standards setters, core competitors, etc.); it is a requirement for an institution to focus on the process, controls, and structures imposed from outside the organization. Similarly, coercive pressures, as opined by Shi et al. (2008), as formal and informal pressures placed on social actors to adapt or adopt the same strategies, attitudes, behaviours, practices, and policies because of feeling compelled to do so by unavoidable powerful players. Also, these pressures can be applied to the target firm by the institutional environments formally through rules or laws, or informally through certain cultural expectations (Ke, Liu, Wei, Gu, & Chen 2009). Several sources of coercive pressures have been identified, such as resource-dominant organizations (like suppliers and customers), regulatory bodies, parent corporations, trading partners, and investors to mention but a few (Jin, Chai, & Tan, 2012; Liu et al., 2010). Therefore, coercive pressures are basic requirements brought on by more powerful actors (Liu et al., 2010; Ke, et al., 2010). Also, Coercive pressure can either be competition (competition-based Coercion) or regulation (Imposition-Based Coercion) are the two types of coercive pressures. Competitive pressures are pressures that come into being due to threats and fear of losing competitive advantage while regulative pressures are pressures that come into being due to pressures from government agencies and professional regulatory bodies (Shi, et al., 2008).

Normative pressures are pressures from professionalism that emphasize, beyond a reasonable doubt, the relevance of voluntary adoption to copy coercive pressures, including two main sources of professionalism-education and professional collaboration (DiMaggio and Powell 1983). Similarly, normative pressures originate from professional standards, professional associations, and education (Deng and Ji 2015). Thus, normative pressures are associated with professionalization and education, and they shape organizational responses (Chen, Watson, Boudreau, & Karahanna, 2009).

Unlike normative pressures that originate from the prevalence of an institution's activities, mimetic pressures are pressures that arise mainly from the perceived success of competitors' operations. In other words, mimetic pressures originate from standard responses to doubts and uncertainty from competitors' strategies that worked well, and the company decides to adopt them for the company to excel (Deng & Ji 2015). Therefore, mimetic isomorphisms assume that institutions will imitate the leading successful organizations, which have confirmed benefits from being the first movers in the industry (DiMaggio and Powell, 1983; Liu, et al., 2010). There are three basic types of selective imitation frequency-based imitations, outcome-based imitations, and trait-based imitations (Ozmel, et al., 2017; Jarvis, MacKenzie, & Podsakoff, 2003; Haunschild, & Miner, 1997). Frequency-based mimetic pressure comes from the number of other institutions that already have adopted a prescribed practice. Hence, through frequency-based imitation, organizations tend to imitate actions that have been taken by large numbers of other successful organizations. With outcome-based imitation, institutions are encouraged to adopt certain practices due to positive results gained by prior adopters. Finally, trait-based imitation arises when the behaviour of other institutions with whom they share common attributes. In addition, in trait-based imitation, institutions may also selectively imitate practices that have been used by some subset of other successful organizations.

Therefore, from the above fundamental tools for isomorphisms, it can deduce that organizational isomorphism is the bedrock of IT whereby institutions utilize similar procedures via coercive, mimetic, and normative means of isomorphism as claimed by DiMaggio and Powell, (1983). Also, in IT as claimed by Scott and Meyer (1983) that the organizational setting is peculiarized by certain rules that regulate the institutions whereby the institutions must abide by to secure total legitimacy and support. This assertion is consistent with shari'ah audits in Islamic Business Organizations (IBOs) that aimed to have total Shari'ah compliance (ShC) shari'ah laws which majorly differentiates it from conventional audits (Sani & Abubakar, 2021;

Omar, 2019; Islam, Abdullah & Amran, 2019; Khalid, Haron & Masron, 2018; Ahmed, et al. 2018).

Therefore, this study has two major objectives in aligning IT dimensions with Shari'ah audit in IBOs. First, to investigate the relevance of IT in institutionalizing shari'ah audit for ensuring ShC amongst IBOs. Second, to come up with a proposed model predicting the relationship between IT and ShC because of Shari'ah audit IBOs. This study is divided into four sections, which are organized as follows: The next section provides a discussion of empirical studies relating to dimensions of IT isomorphism (DiMaggio, & Powell, 1983) across different countries. As well as a discussion of the meaning of Shari'ah audit and its relevance in ensuring ShC in IBOs. Section 3 describes the main basics of IT and highlights the application of IT into Shari'ah audit in IBOs in making sure that such organizations are truly shari'ah compliant. Section 4 provides a discussion of the proposed model of the institutionalization of IT in the Shari'ah audit amongst the IBOs. The final section offers the conclusions of the study and highlights policy implications and directions for future research.

Literature Review

Institutional Theory in Developed and Developing Nations

It should be noted that the issue of institutionalization of institutional theory occupies a prominent position in the research of conventional accounting and auditing (Antoniuk, Kutsyk, Brodska, Kolesnikova, & Struk, 2021). Specifically, Chekavinskaya (2019) opined those various studies associated with institutional theory and the fields of accounting and auditing. Therefore, prior studies on the institutionalization of IT into various specializations have been identified across the jurisdictions in public, business-oriented organizations, and other non-profit organizations. For example, in Russia, Chekavinskaya (2019) surveyed and analyzed audit studies based on the institutional theory approach in the research from the USA, Great Britain, Australia, France, Canada, Germany, and Ukraine. The study found a dire need for the development of a new institutional theory in audit specialization across the Russian Federation. Similarly, in the USA, Scott, (2008) revealed that the audit profession shall comply with the institutional model and this model changes over the period and nature of the environment. In the UK also Elbardan, Ali & Ghoneim, (2016) examined how the function of internal audit preserves its reputation and legitimacy when the systems of enterprise resources planning (ERP) are institutionalized. The study focuses on an in-depth case study of a multi-national bank in the UK. The study proved that ERP systems necessitate an institutional logic of control based on associated assertions. These assertions encourage changes in the structure and practice of the internal audit function to become a unique means of maintaining its reputation and legitimacy. Similarly, scholars from Australia, and the UK, Boolaky & Soobaroyen, (2017) examined the institutionalization of audit policy, practice, structure, and standardization globally. the study found that coercive, mimetic, and normative pressure have a significant influence on International Accounting Standards (IAS) implantation to economic factors.

Likewise, Löhlein, (2015) investigated the audit regulations in Germany where institutional theory underpinned the study. The study focused on all issues related to institutional service(s) of audit, its structure, and institutional violations. Finally, the study substantiates the prevention of possible institutional destruction of the profession of auditor in Germany. Similarly, in Ukraine, Antoniuk et al., (2021) considered the impact of the institutionalization process and regulations on the development of traditional accounting and auditing services in Ukraine. The study was based on the analysis of the development of the institutional framework for the provision of audit services. The results showed that there are differences between legal regulations and practices in the country. Also, Semenysheva, et al. (2020) traced the essence and identification of the dimensions of IT and substantiate the responsibilities and impact of these dimensions on Ukraine's economy by using the example

of standardization. The examples of changes in GDP after the introduction of accounting standards (which are a structural component of institutional accounting theory) in the 8 largest countries of the world are given as an argument for the positive impact of institutional pragmatics on the national economy using the graphical method. The study found that the dynamics that can be used to identify the impact of accounting standardization on a country's economy may be the dynamics of its GDP.

Equally, in USA, France, and Canada, Baker, et al. (2014) evaluated the regulation of statutory auditing by using the institutional theory approach. Their study compared the Sarbanes-Oxley Act of 2002 regulatory structures enacted in the USA for auditing in the USA, France, and Canada. The study revealed that the increasingly apparent similarity in the regulatory structures for statutory auditing in these three countries came into being due to external pressures (coercive isomorphism) from global capital markets for standardized the practices of the regulatory. Though, this similarity may be in a form of decoupling, whereby actors in the institutional field of professional regulation (normative isomorphism), under pressures (coercive isomorphism) from powerful external forces, look to enhance their legitimacy while maintaining internal flexibility and a certain capacity for resistance against external pressures in the institutional field. Similarly, Frumkin and Galaskiewicz (2004) associated institutional isomorphism and public sector organization in the USA. The study examined whether public sector organizations are more or less as susceptible to mimetic, normative, and coercive pressures when compared with business and non-profit-oriented sectors. The study uses data from the National Organizations study and traces that public sector organizations are truly more exposed to all three dimensions of institutional theory than other organizations. In addition, the impact of institutional variables on profit-oriented organizations and non-profit-oriented organizations was more infrequent. Similarly, the vulnerability of public sector organizations to institutional forces shows crucial challenges for the field of public administration and has more feedback for the non-profit-oriented organization and profit-oriented organizations which are funded are regulated by the government.

Also, in New York, Michigan, Ohio, and Delaware of the US, Carpenter, and Feroz, (2001) utilized institutional theory and explored how institutional pressures were employed in such states. Furthermore, the study clarified how these state governments endured the use of generally accepted accounting principles (GAAP) for external financial reporting. The study further claimed that resource dependence as a means of coercive institutional forces was related to GAAP adoption from the onset. Additionally, the study confirmed that the key accounting bureaucrats in New York and Michigan utilized “compromise” as an initial strategic response to institutional pressures in implementing GAAP, while for Ohio, the key accounting bureaucrats adopted a “defy” strategy while the political leadership endorses an “acquiesce” strategy. Finally, Delaware adopted a manipulative strategy from the onset.

In Tanzania, Goddard, Assad, Issa, Malagila, and Mkasiwa (2016) examined accounting and auditing practices in the public sector in Tanzania using institutional theory. The study was qualitative, where employees from central and local governments were interviewed and associated the two public sectors with the NGOs in Tanzania. The study uses grounded theory methods in analyzing the data. The study revealed that coercive isomorphism was the most evident in central government towards the implementation of accounting and auditing practices amongst the public sectors. Mimetic and normative isomorphism was more evident in local governments and more particularly in NGOs. The study confirmed that for NGOs to navigate legitimacy organizations had not only to adopt coercive practices but also chose to borrow other dimensions such as accounting firms for consultancy and audit to hold high levels of legitimacy and reputation in Tanzania.

Likewise, in other fields of specializations other than traditional accounting and auditing specializations, prior scholars associated institutional theory with such areas. For example, in

Australia, James (2006), explored the institutionalization of Balance scorecards (BSC) in government-owned Electricity corporations in Queensland. A single exploratory/descriptive case study with embedded multiple-unit analysis was utilized to determine the adoption of a BSC in Australia. To explain the initial adoption of BSC the study uses the concept of isomorphism. In addition, it showed the significance of the deliberation of both rational analytical approaches and legitimacy as a fundamental accompaniment to isomorphism in the continuing development of the new performance management system. Also, the study recognized that the adoption of the BSC is identified as not only a result of coercive, mimetic, and normative isomorphic behaviour but also in the organization's attempt to systematically place itself within the new uncertain competitive environment. Finally, the study claimed that the implementation and institutionalization of BSC in the Electricity Corporation in Queensland resulted due to a dire need to appear legitimate as well as satisfy rational analytical reform criteria of greater economy, effectiveness, and efficiency.

As well in Nigeria, Osinubi (2020) associated the implementation of IFRS and IT. The study explored the impact of the three dimensions of IT in determining the operational activities of institutional entrepreneurs and other social actors during the institutionalization of IFRS in Nigeria. The document analysis method was adopted by the study in achieving the objectives of the study. The study finds that the institutional theory influences the implementation of IFRS via a normative dimension where the regulations on IFRS implementation were initiated top-down rather than through lobbying from professional accounting bodies and the public. The study also traced that the three institutional pillars are key components of a change process and the actor's social position affects their capability to act as an institutional entrepreneur.

The perspective of Shari'ah, Nasir, et al. (2021) associated institutional isomorphism and environmental sustainability according to the shari'ah perspective. The study explored how managers of publicly listed corporations in Malaysia perceived environmental problems and how such perceptions contribute to environmental sustainability. in the process of gathering the required data, the study adopted Charmaz's (2006) approach to grounded theory, which utilizes the social view. The study proved that firms responded positively to secular coercive, normative, and mimetic isomorphic forces from numerous stakeholders in all issues related to the environment. The study proved that shari'ah does not influence managers' environmental beliefs and the way they drive corporate environmentalism. Therefore, the study proposed a new shariah-based framework for corporate environmental sustainability. This is because shari'ah has a strong influence on all aspects of life in Malaysia.

However, upon all the above numerous studies from different areas of studies across countries and upon all the relevancy of IT towards achieving a social, financial, and legal benefit for the countries and institutions and their tactical strategies to the best little knowledge of the researchers no study was attempted to associate IT with shari'ah auditing system amongst the IBOs for ensuring ShC. Therefore, this serves as a basis for this study to associate IT with the Shari'ah auditing system and to come up with a proposed model that would serve as the bedrock for potential studies on Shari'ah audit and IT in ensuring ShC. Finally, the study will benefit Islamic professional standards like AAOIFI, IFSB, CIBFI, and IBFIM to utilize IT towards the institutionalization of shari'ah auditing system amongst the IBOs to both Muslims dominated and non-Muslim dominated that practising shari'ah finance system or to share common shari'ah governance as isomorphism via ShC.

Islamic Business Organizations

Business activities in Islam fall under the Islamic commercial jurisprudence (*fiqh-muamalat*) (Uddin 2003). Though, such activities have been in existence since before the first revelation (Islahi, 1988). Before the advent of Islam, business associations were in existence (Afzal-ur-Rahman 1980). Prophet Muhammad's peace be upon him (PBUH) was engaged in

business activities where it was reported that he worked as a shepherd for Bani Sa'ad and in Makah for a wage. Similarly, he went to Syria at the age of 25 as a merchant where he served as a business agent while Khadijah the daughter of Khuwailid served as his principal (Al-Mubarakpuri, 1998).

In a hadith report narrated by Abu Huraira (R.A) the Prophet (PBUH)) said, "Allah did not send any prophet but shepherded sheep," His companions asked him, "Did you do the same?" Yes, I used to shepherd the sheep of the people of Mecca for some Qirāts," One Qirat equals 1/6 of Dirham (Khan, 1977).

Also, after the advent of Islam, Muslims migrated from Mecca to Madinah for them to be able to worship Allah the Almighty (SWT) amicably, one of the famous companions of Prophet Muhammad (PBUH) known as Abdur-Rahman bin Auf was paired up with Saad ibn Ar-Rabi'ah may Allah agreed with him (R.A) who was one of the wealthiest men of Madinah (Al- Mubarakpuri 1998). On that occasion, Saad (R.A), out of generosity and kindness to his new brother, told Abdur-Rahman that:

My brother, among the people of Madinah I have the most wealth. I have two orchards and I have two wives. See which of the two orchards you like, and I shall vacate it for you, and which of my two wives is pleasing to you and I shall divorce her for you. Abdur-Rahman (R.A) responded to Sa'ad ibn Ar-Rabi'ah (R.A) showing great appreciation, by making a prayer for him "May Allah bless you in your family and wealth. But show me where the marketplace is." It was the market of bunu-Qainuqa' he was asking for. He did not wish to be a burden on anyone inducing his paired brother Sa'ad (R.A) to show him the way of the market to engage in business activities.

Therefore, the Islamic economic system rejects idleness and encourages business activities and productivity by engaging in Shari'ah-approved activities for a living. Hence, in Islam, there is no day off from worldly work (Amsamia & Adamu 2017). Additionally, Prophet Muhammad (PBUH)) teaches us self-reliance, the dignity of engaging in labour to support oneself via business operations:

"It is better for anyone of you to take a rope and cut the wood (from the forest) and carry it over his back and sell it [as a means of earning a living] rather than to ask a person for something and that person may give him or not" (Khan 1977).

These confirmed the importance of the pursuit of business activities in Islam. Likewise, during the revelation, Qur'an explicitly revealed that:

...And to those whom your oaths have bound [to you] – give them their share.¹⁵⁷ Indeed Allah is ever, over all things, a Witness (Q: 4:33).

When you contract a debt for a fixed period, write it down. . . take witness whenever you make a commercial contract (Q: 2:282).

O you who believe! Fulfil your obligations' (Q: 5:1).

And observe the weight with equity and do not make the balance deficient' (Q: 55:9, 83:1-3).

And give full measure when you measure and weigh with a balance that is straight (Q: 17:35).

Therefore, the Qur'an provides unique principles and guidelines for every sphere of human endeavour, ranging from spiritual, social, and economic, to business transactions. Also, Prophet Muhammad (PBUH) confirmed that:

The truthful, honest merchant is with the prophets and the truthful ones and martyrs in the hereafter (Tirmidhi 12:4).

You ought to be engaged in commerce because ninety-nine per cent of the bounties of God is contained therein (Mansor, 1984).

A person who imports goods and provides them is favoured in his livelihood while a person who hoards goods is the wrongdoer and a cursed one (Islahi 1988).

Similarly, the notion of the corporation, which is a modern term for a business organization, was said to have been in place since the time of Prophet Muhammad (PBUH), whereby people pooled their resources together for commercial benefit on principles like those of modern-day business organizations (Afzal-ur-Rahman, 1982). The basic principles of Islamic business are vicegerent (*Khalifah*) and consultation (*Shura*) (Gambling & Karim, 1991). The canon of *Khalifah* revealed that all Muslims are liable for what is done with the capital entrusted to them (Managers). While the canon of consultation is the key leadership value in Islam that serves as a mechanism for all decision-making. This necessitates the leaders to consult and receive all the advice and grievances tendered by those represented in business (Beekun & Badwi, 2005).

Unlike conventional business organizations that are set up for for-profit making only and their development is at the expense of moral values (like gambling, usury, uncertainty, and indeterminacy) (Khan 2013), IBOs are governed by any transactions that are free from coercion, uncertainty (*Gharar*), usury (*Ribah*), gambling (*Gimar*), games of chance (*Maysir*), fraud and cheating (*Ghishsh* and *Khilafah*) and any activity that contradict any text of the Qur'an or the *Sunnah*, or oppose the highest objectives of Shari'ah (*Maqasidil Shari'ah*) (Kuran 1986). Total avoidance of such is termed as ShC. Therefore, IBOs are organizations that carry out their business activities in conformity with shari'ah rules and principles.

Shari'ah Audit

A shari'ah audit is a mechanism or tool for attesting to ShC by IBOs in all their operations. Making sure that all operations of IBOs are by the guidelines, principles, and rules of shari'ah is the main emphasis of shari'ah auditors (Alam, Abdul Aziz & Iqbal, 2020). Sultan (2007) described the Shari'ah audit as a systematic process of objectively obtaining sufficient, reliable, relevant, and appropriate audit evidence to provide a professional opinion on whether the financial statements comply with Shari'ah principles and rules. Shari'ah audit primarily seeks to assess the degree of compliance with shari'ah by IBOs which also helps towards the attainment of the organizational objective (Azam & Adel, 2018). Sani and Abubakar (2021) elaborated that the Shari'ah audit must go beyond the contractual agreements of IBOs and move into actual figures by examining the arithmetical accuracy related to the contracts which need to tally with the dates of the contracts. It covers every aspect of IBOs by shari'ah principles and regulations (Shafii et al., 2013). Such aspects include financial and non-financial segments. Financial segments include abridging financial statements, cash flows, and a five-year financial summary of the institution. The non-financial segment includes systems and processes, organizational structures, and the shari'ah governance process.

Practically, to ensure ShC in IBOs, Malaysia as a country issued many Acts such as the Central Bank of Malaysia Act 2009, Islamic Financial Services Act 2013, Financial Services Act 2013, Development Financial Institution Act 2002, Government Funding Act 1983, and recently Shariah Governance Policy Document (SGPD) 2019. In addition, Central Bank Malaysia (Bank Negara Malaysia, 2010:23) issued Shari'ah Governance Framework (SGF, 2010) for IBOs and it considered the Shari'ah audit as one of the mechanisms for ensuring ShC. Though, vigilant scrutiny revealed that SGF, (2010) does not sufficiently cover many sensitive aspects of Shari'ah audit such as Shari'ah auditors' certifications, required competency, professional standards, and reporting structures (Abdul Rahman, 2014). Therefore, scholars such as (Abdul Ghani & Abdul Rahman, 2015; Shafi'i et al; 2013; Abdul Rahman, 2014; Shaharuddin, 2011) concludes that the framework (SGF, 2010) is not wide enough in providing a generally accepted procedure for the performance of a shari'ah auditing system in Malaysia. As a result, to ensure ShC via Shari'ah audit the revised Shari'ah Governance Policy Document (SGPD, 2019) was issued and revealed that the shari'ah audit

must be carried out by a professional person that possesses all the necessary knowledge on shari'ah requirements relevant and applicable to the IBOs (BNM,2019).

Institutionalization of Institutional Theory in Shari'ah Audit

To relate theory with shari'ah audit for ensuring ShC in IBOs, IT confirmed that Coercive pressures are presumed to arise when the institution changes its practices or adopts certain rules due to the pressures from either dominant regulators or from the influence of competitors to gain more legitimacy. As the name implied, coercive means the forceful adoption of certain laws and guidelines by certain stakeholders in institutions with no options other than strict obedience. Practically, the Central Bank of Nigeria (CBN) under section 12 (2) of the shari'ah guidelines directed all IBOs in Nigeria to adopt AAOIFI's standards for any lacunas of the shari'ah guidelines developed by CBN. Thus, all IBOs in Nigeria have no option but to follow CBN's directives and conform to AAOIFI's standards. Similarly, in Malaysia, IBOs have no alternative but to abide by the Central Bank of Malaysia Act 2009, Islamic Financial Services Act 2013, Financial Services Act 2013, Development Financial Institution Act 2002, Government Funding Act 1983, Shari'ah Governance Framework (SGF, 2010), and Shariah Governance Policy Document (SGPD) 2019 etc. if they meant to remain relevant in the country

While Normative isomorphism means that organizations become more professional and follow guidelines specific to their peculiarities. It comes into being when norms and groups pressure institutions to adopt what they view as normal behaviour or practice. In other words, particular groups with peculiar training will tend to adopt similar practices and non-compliance or non-adoption could lead to a sanction by the group. For example, internal auditors can influence the IBOs to comply with shari'ah principles in carrying out their audit functions, otherwise, it will lead to non-compliance reports. Similarly, normative isomorphism comes into being to increase professionalization within the organization. Therefore, the institutionalization of IT into shari'ah audits can increase the professionalism of shari'ah audits across organizations. Likewise, the institutionalization of shariah audit into the shari'ah windows organization can also motivate internal auditors to engage themselves in addition to the pursuit of their conventional certificates in Islamic professional accounting to qualify as shari'ah internal auditors. Hence, from the shari'ah audit perspective, the above notion proved the ability of Islamic professional standards like AAOIFI, IFSB, CIBFI, and IBFIM to be implemented by countries (both Muslims dominated, and non-Muslim dominated) or to share common shari'ah governance as isomorphism.

Finally, mimetic isomorphism is a means of change initiated internally by the organization. Mimetic pressures ascend when an institution sees that a competitor's strategies work well and decides to adopt them for the company to excel. In other words, institutions will imitate the practices of successful institutions and therefore come to resemble them in terms of professionalism, legitimacy and recognition in the industry. For example, many if not all Islamic banks in Nigeria engaged foreign intellectuals to ensure that the Shari'ah audit is efficiently institutionalized to scale like their sister organizations across the world (Sapovadia, 2015). Thus, mimetic pressures help in making sure that they are truly Shari'ah compliant as complied with by other IBOs and succeed.

From the above three pressures of IT, it can be deduced that IT suggests that organizations, including IBOs, institutionalise structures, systems, and processes that feel abnormal as legitimate in their operational activities to enhance their probabilities. These organisations perform their operational activities with coercive, normative, and mimetic pressures in their organisational background and consistently set all mechanisms to react to these pressures. Below, figure 1 pitches a model of the institutionalisation of IT in shari'ah audit among IBOs

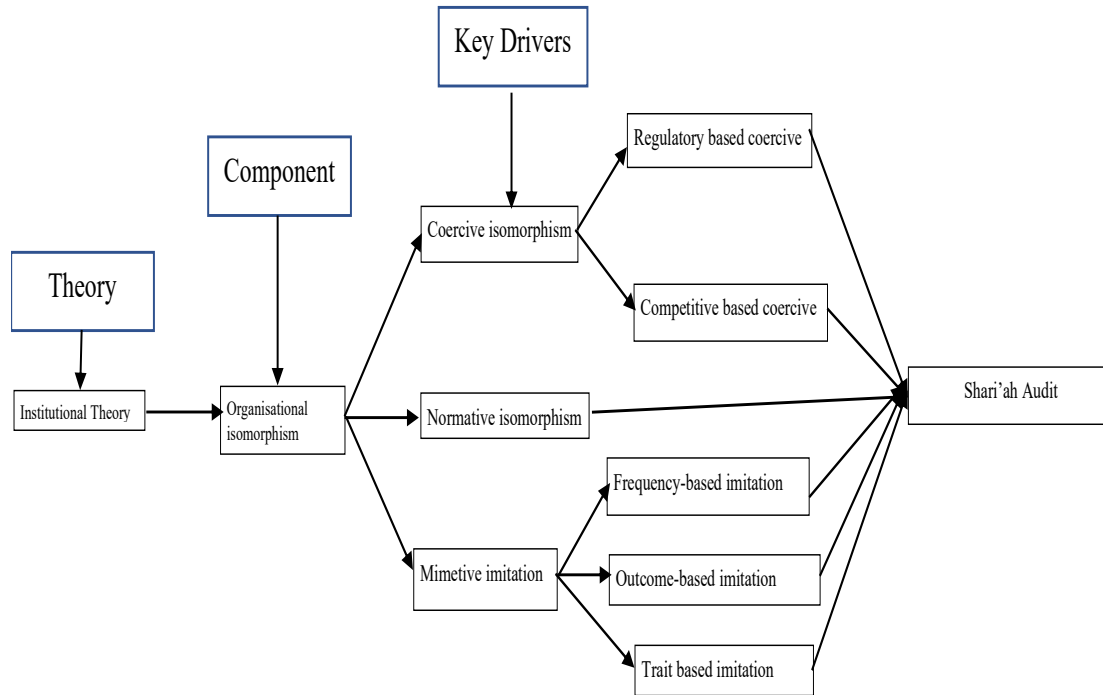


Figure 1. Proposed Model

The proposed model predicts that the utilization of IT pressures into shari'ah audit practises in IBOs for ensuring ShC arises from the two dimensions of coercive pressures which are competition-based coercion and imposition-based coercion (regulations). Competition-based coercion arises because of compliance with Shari'ah standards, principles, and rules by other successful IBOs, the pressure will arise if the IBOs refuse to comply with Shari'ah standards, principles, and rules. This compliance forces other IBOs to comply with such shari'ah standards, principles, and rules; otherwise, they may lose their legitimacy in the industry. Thus, whenever, the competitors of IBOs institutionalised shari'ah audit as part of their operational activities for proper ShC and excel, the competitors have no option but to comply by employing shari'ah audit in their operations otherwise they may lose their legitimacy if the shari'ah audit report is absent in their annual report. While regulations (Imposition-Based Coercion) arise from government agencies (Greenwood, Suddaby, & Hinings 2002) such as CBN, NDIC in the case of Nigeria and BNM in the case of Malaysia, professional regulatory bodies etc., IBOs have no alternative but to comply with such regulations, otherwise, the organisations may even lead to the seizure of their certificates of incorporation. Therefore, competitive pressures are pressures that come into being due to threats and fear of losing competitive advantage, while regulative pressures come into being due to pressures from environmental regulations or laws such as government agencies and crucial stakeholders' demands such as professional regulatory bodies (Deng, & Ji, 2015; Shi, et al., 2008).

Similarly, the dimension of Normative pressure has a direct bearing on the professionalization of fields of studies and disciplines. Unlike coercion pressure, this imitation is not coerced by any powerful actors either by regulations or competitions (Shi, et. al., 2008). Therefore, from the above-proposed model, shari'ah audit deals with the specialization of auditing functions based on ShC. In many incidences, IBOs may be afraid that they will be deemed conventional or laid back if they do not follow the current trend of shari'ah audit professionalization. Such professionalism of shari'ah audit includes applying standards from recognised Islamic professional accounting bodies like AAOIFI and IFB. Others include engaging auditors both internal and external that have Islamic accounting and auditing

professional certificates like CSAA, CISSA, and CPSA to utilize their professionalism to ensure ShC.

Mimetic pressures are primarily caused by an organization's perception of core rivals' performance (Liu et al., 2010). This perception imitates an organization's understanding of the industry and its competitive position (DiMaggio and Powell, 1983). As a result, they imitate the acts of such successful and high-status stakeholders because they perceived that successful players' strategies and other actions are much more likely to produce favourable results. In the context of shari'ah audit, as pitched from the model, frequency-based mimetic pressure comes from successful IBOs that already have practices of shari'ah audit functions for ensuring ShC across the world. For example, leading countries in the Islamic finance industry like Malaysia, Bahrain, Saudi Arabia, Indonesia Pakistan to mention a few have already gone far about the practice of shari'ah audit when compared with other countries of the world. So other countries may mimic such countries so that to become successful alike. With outcome-based imitation, institutions are encouraged to adopt certain practices due to positive results gained by prior adopters. From the shari'ah audit perspective, many IBOs are encouraged to adopt or adapt AAOFI and IFB's standards due to the fact many organizations across the world adopt/adapt such standards and succeeded in the practices of shari'ah audits for ensuring ShC in their respective IBOs. Finally, trait-based imitation arises when the behaviour of other institutions with whom they share common attributes. In addition, in trait-based imitation, institutions may also selectively imitate practices that have been used by some subset of other successful organizations. This is in line with the practice of shari'ah audit practice for proper ShC when the IBOs intend to select the audit practices that are peculiar to the environment, economy and culture of the organization provided to conform with the ShC. Therefore, IT is very relevant to shari'ah audit amongst IBOs for ensuring ShC.

Conclusion

This study highlights the fact that IT can be applied to a wide range of specialities and areas of study. This proposed model can be used in all aspects of the shari'ah study, not just the shari'ah auditing system. International regulators such as the AAOIFI and the IFSB can benefit from this research by re-examining their institutionalisation rules and standards to improve that match with IT. Similarly, Islamic banks, Islamic Micro-finance Banks, Takaful companies, Islamic capital markets and regulators operating in several nations throughout the world could find this study to be useful in discovering ways in applying the three dimensions of IT to always remain relevant.

Therefore, future researchers are suggested to apply the model in other areas of Islamic finance, such as Islamic Insurance (Takaful), Islamic microfinance, non-business Islamic institutions such as Hisbah, Pilgrimage, zakat, waqf and other Islamic cooperatives as well other Islamic social institutions. Such studies would substantially add to the prevailing literature. Future studies can also address how IT justifies the influences of government policy, national laws, and regulations towards institutionalization of IT into shari'ah audit as already practised in several Islamic economies. A further innovative research area is for researchers to employ quantitative or qualitative methodology to comparatively examine similar models adopted by different Islamic jurisdictions. This would provide valuable insights into the similarities, differences, and prospects for the institutionalization of IT across the Islamic world. Undoubtedly, this effort would lead to a much broader understanding of the issues surrounding IT and quality compliance with Shari'ah rules and principles amongst IBOs. Finally, this study will offer academia an understanding of the variables in the model which has not been considered by the previous studies. This study suggested further studies to validate the proposed model of this study empirically.

References

- Abdul Ghani, N. L., & Abdul Rahman, A. R. (2015). An analysis of Shariah audit practices in Islamic banks in Malaysia. *Jurnal Pengurusan*, 43(1), 107-118.
- Abdul Rahman, A. R. (2014). Shariah audit: from compliance to assurance. *Islamic Accounting Symposium*, 27-28.
- Afzal-ur-Rahman (1980). Economic Doctrines of Islam. *Lahore Islamic Publications*.
- Ahmed, E. R., Amran, A., & Islam, M. A. (2018). Sukuk Documentation and legitimacy: The role of the Shariah supervisory board as a moderator. *Management*, 5(3), 22-40.
- Ahmed, E. R., Islam, M. A., & Alabdullah, T. Y. (2014). Islamic Sukuk: Pricing mechanism and rating. *Journal of Asian Scientific Research*, 4(11), 640-648.
- Alam, K., Karbhari, Y., & Rahman, M. (2021). Adaptation of New Institutional Theory in Shariah Governance Practice, Structure and Process. *The Journal of Business Economics and Environmental Studies*, 11(1), 5-15.
- Alam, M. K., Ahmad, A. U. F., & Muneeza, A. (2020). External shari'ah audit and review committee vis-a-vis shari'ah compliance quality and accountability: A case of Islamic banks in Bangladesh. *Journal of Public Affairs an International Journal*. Retrieved from <https://doi.org/10.1002/pa.2364>
- Ali Y (1983). The Holy Quran, text, translation and commentary, *Amana Corporation*.
- Ali, N. A. M., Mohamed, Z. M., Shahimi, S., & Shafii, Z. (2016). Knowledge of Shari'ah Auditors' competency in Islamic financial institutions. *International Journal of Trade, Economics and Finance*, 7(4), 113 – 120. <https://doi.org/10.18178/ijtef.2016.7.4.509>
- Al-Mubarakpuri, S. R. (1998). *The sealed nectar*. Dar-us-salam Publications.
- Al-Twaijry, A. A., Brierley, J. A., & Gwilliam, D. R. (2003). The development of internal audit in Saudi Arabia: an institutional theory perspective. *Critical Perspectives on Accounting*, 14(5), 507-531.
- Amsamia, M., & Adamu, H., B. (2017). Self-Reliance as a Panacea to Youth Unemployment in Nigeria: The Islamic Approach. *International Journal of Sciences: Basic and Applied Research* 32 (3) 329-337.
- Antoniuk, O., Kutsyk, P., Brodska, I., Kolesnikova, O., & Struk, N. (2021). Institutionalization of Accounting and Auditing Services in Ukraine: Genesis, Evaluation, Analysis. *Independent Journal of Management & Production*, 12(3), 123-137.
- Azam, K. and Adel, S. (2018). The role of Shari'ah supervisory board on internal Shari'ah audit effectiveness: evidence from Bahrain. *Academy of Accounting and Financial Studies Journal*, Vol. 22 No. 5, available at: www.researchgate.net/publication/327721510_The_role_of_shariah_supervisory_board_on_internal_Shariah_audit_effectiveness_Evidence_from_Bahrain.
- Bakar, N. R. A., Kasim, N. A. A., Mustapha, M., & Amiruddin, R. (2016). *The Institutionalisation Process of the Performance Management System in a Malaysian Government-linked Company*.
- Baker, C. R., Bédard, J., & Hauret, C. P. (2014). The regulation of statutory auditing: an institutional theory approach. *Managerial Auditing Journal*, 29 (5) 371-394.
- Beekun, R. I., & Badawi, J. A. (2005). Balancing ethical responsibility among multiple organizational stakeholders: The Islamic perspective. *Journal of business ethics*, 60(2), 131-145.
- Bergevörn, L. E., Mellemvik, F., & Olson, O. (1995). Institutionalization of municipal accounting—a comparative study between Sweden and Norway. *Scandinavian Journal of Management*, 11(1), 25-41
- Boolaky, P. K., & Soobaroyen, T. (2017). Adoption of International Standards on Auditing (ISA): Do institutional factors matter? *International Journal of Auditing*, 21(1), 59-81.

- Brignall, S. and Modell, S. (2000). An institutional perspective on performance measurement and management in the 'new public sector'. *Management Accounting Research*, Vol. 11 (3)
- Carpenter, V.L. & Feroz, E.H. (2001). Institutional theory and accounting rule choice: analysis of four US state governments' decisions to adopt generally accepted accounting principles. *Accounting, Organizations and Society*, 26 (7/8) 565-596.
- Carruthers, B., G. (1995), "Accounting, ambiguity, and the new institutionalism. *Accounting, Organizations and Society*, 20 (4) 313-328.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London: SAGE Publications Ltd
- Chekavinskaya, G. (2019). Justification of the Institutional Approach to Audit. In *International Scientific Conference "Far East Con"(ISCFEC 2018)* 1138-1142. Atlantis Press.
- Chen, A. J., Watson, R. T., Boudreau, M. C., & Karahanna, E. (2009). Organizational adoption of green IS & IT: An institutional perspective ICIS 2009 Proceedings. 142. <http://aisel.aisnet.org/icis2009/142>
- Chik, M. N. (2011). Shariah audit: shariah perspective, *International Shariah Audit Conference* at 9 Mei 2011.
- Covaleski, M. & Dirsmith, M. (1988). An Institutional Perspective on the Rise of Social Transformation and Fall of a University Budget Category. *Administrative Science Quarterly*, 33 (4) 1988, 562–587.
- Deephouse, D. L. (1996). Does isomorphism legitimate? *Academy of management journal*, 39(4), 1024-1039.
- Deng, Q., & Ji, S. (2015). Organizational green IT adoption: concept and evidence. *Sustainability*, 7(12), 16737-16755.
- DiMaggio, P. (1998). The relevance of organizational theory to the study of religion. *Sacred Companies*, Oxford University Press.
- DiMaggio, P. and Powell, W.W. (1983). The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields. *American Sociological Review*, 48 (2) 147-160.
- DiMaggio, P.J. and Powell, W. (1991). The iron cage revisited: institutional isomorphism and collective rationality in organisational fields. *University of Chicago Press, Chicago*,
- Elbardan, H., Ali, M., & Ghoneim, A. (2016). Enterprise resource planning systems introduction and internal auditing legitimacy: an institutional analysis. *Information systems management*, 33(3), 231-247.
- Frumkin, P., & Galaskiewicz, J. (2004). Institutional isomorphism and public sector organizations. *Journal of public administration research and theory*, 14(3), 283-307.
- Fulton, B. R. (2017). Fostering Muslim civic engagement through faith-based community organizing. *Journal of Muslim Philanthropy and Civil Society*, 1(1), 23-39.
- Goddard, A., Assad, M., Issa, S., Malagila, J., & Mkasiwa, T. A. (2016). The two public and institutional theories—A study of public sector accounting in Tanzania. *Critical Perspectives on Accounting*, 40, 8-25.
- Greenwood, R., Suddaby, R., & Hinings, C. R. (2002). Theorizing change: The role of professional associations in the transformation of institutionalized fields. *Academy of management journal*, 45(1), 58-80.
- Hasbolah, F., Alwi, N. M., & Mohamad, M. H. S. (2018). Institutionalization of performance management system in a Malaysian local government from the perspective of new institutional sociology. *Jurnal Akuntansi dan Keuangan Indonesia*, 15(2).
- Haunschild, P. R., & Miner, A. S. (1997). Modes of inter-organizational imitation: The effects of outcome salience and uncertainty. *Administrative science quarterly*, 472-500.

- Hinings, C. R., Thibault, L., Slack, T., & Kikulis, L. M. (1996). Values and organizational structure. *Human Relations*, 49(7), 885-916.
- Islahi, A.A., (1988). Economic Concepts of ibn Taimiyah. Islamic Economic Series-12, Islamic Foundation, London.
- James, W. (2006). The institutionalisation of a business performance management system in the Australian public sector.
- Jarvis, C. B., MacKenzie, S. B., & Podsakoff, P. M. (2003). A critical review of construct indicators and measurement model misspecification in marketing and consumer research. *Journal of consumer research*, 30(2), 199-218.
- Jin, D., Chai, K. H., & Tan, K. C. (2012). Organizational adoption of new service development tools. *Managing Service Quality: An International Journal*.
- Kasim, N., & Sanusi, Z. M. (2013). Emerging issues for auditing in Islamic financial institutions: empirical evidence from Malaysia. *IOSR Journal of Business and Management*, 8(5), 10– 17.
- Ke, W., Liu, H., Wei, K. K., Gu, J., & Chen, H. (2009). How do mediated and non-mediated power affect electronic supply chain management system adoption? The mediating effects of trust and institutional pressures. *Decision Support Systems*, 46(4), 839-851.
- Khalid, A. A., Haron, H., Sarea, A. M., & Masron, T. A. (2018). The role of shariah supervisory board on internal Shariah audit effectiveness: Evidence from Bahrain. *Academy of Accounting and Financial Studies Journal*, 22(5).
- Khan, M., M. (1977). Al-Bukhari, Sahih At-Bukhari. Kazi Publications, Chicago,
- Khan, M.F. (2013) Theorizing Islamic Economics: Search for a Framework for Islamic Economic Analysis. *JKAU Islamic Economics*, 21 (1) 209-242.
- Kuran, T. (1986). The economic system in contemporary Islamic Thought: Interpretation and assessment. *International Journal of Middle East Studies*, 18(2), 135-164.
- Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of enterprise systems: the effect of institutional pressures and the mediating role of top management. *MIS Quarterly*, 59-87.
- Liu, H., Ke, W., Wei, K. K., Gu, J., & Chen, H. (2010). Adoption of internet-enabled supply chain integration: institutional and cultural perspectives. *Pacific Asia Journal of the Association for Information Systems*, 2(4), 3.
- Liu, H., Ke, W., Wei, K. K., Gu, J., & Chen, H. (2010). The role of institutional pressures and organizational culture in the firm's intention to adopt internet-enabled supply chain management systems. *Journal of Operations Management*, 28(5), 372-384.
- Löhlein, L. (2015). *Guarding the Guardians. Essays on Audit Regulation (Doctoral dissertation, University of Luxembourg, Luxembourg)*.
- Mansor, M. H. (1984). Undang-undang perdagangan dalam Islam. Alharamain.
- Meyer, J.W. & Rowan, B. (1977). Institutionalized organizations: formal structure as myth and ceremony. *American Journal of Sociology*, 83 (2), 340-363.
- Mizruchi, M. & Fein, L. 1999. The social construction of organizational knowledge: A study of the uses of coercive, mimetic, and normative isomorphism. *Administrative Science Quarterly*, 44(1) 653–683.
- Muhamad, R., & Muwazir, M. R. (2008). Corporate social responsibility and Islamic business organizations: A proposed model. *Tazkia Islamic Finance and Business Review*, 3(1).
- Muhammad, S., Sori, Z. M., Mohd Rashid, M., E., S. (2016). Challenges facing the shari'ah committee in the Malaysian Islamic Financial Institutions. *Journal of Islamic Economics, Banking and Finance*, 12 (2), 60-71
- Najeeb S., F., & Ibrahim, S. H. M. (2014). Professionalizing the role of Shari'ah Auditors: How Malaysia can generate Economic benefits. *Pacific-Basin Finance Journal*. DOI: 10.1016/j.pacfin.2013.10.009.

- Nasir, Nair, & Ahmed (2021) Institutional isomorphism and environmental sustainability: a new framework from the Shariah perspective. *Environment, Development and Sustainability*, 1-14.
- Omar, M. (2019). Issues and challenges of shariah compliance auditing in Islamic financial institutions. *Advanced International Journal of Banking, Accounting and Finance*, 1 (1), 13-24. DOI: 10.35631/aijbaf.11002.
- Osinubi, I. S. (2020). The three pillars of institutional theory and IFRS implementation in Nigeria. *Journal of Accounting in Emerging Economies* 10 (4), 575-599.
- Othman, R. & Ameer, R. (2015). Conceptualizing the duties and roles of auditors in Islamic financial institutions: What makes them different? *Humanomics*, 31(2), 201-213. <https://doi.org/10.1108/H-04-2013-0027>.
- Ozmel, U., Reuer, J. J., & Wu, C. W. (2017). Interorganizational imitation and acquisitions of high-tech ventures. *Strategic Management Journal*, 38(13), 2647-2665.
- Rahim, A., Bakar, A. N. B., & Syafie, A. W. (2004). A preliminary study on the responsibility & independence of Syari'ah advisors of Islamic banks. In a Paper presented at the IIUM Accounting Conference II, Kuala Lumpur, Malaysia.
- Rana, T., Ahmed, Z. U., Narayan, A., & Zheng, M. (2021). An institutional theory perspective on public sector reform and service performance reporting by New Zealand universities. *Journal of Accounting & Organizational Change*.
- Sani, S. D. & Abubakar M. (2021). A proposed framework for implementing risk-based Shari'ah audit. *Journal of Financial Accounting and Reporting*. <https://www.emerald.com/insight/1985-2517.htm>.
- Scott, W.R. (2004). Reflections on half a century of organizational psychology. *Annual Review of Sociology*, (3)1-21.
- Semenyshena, N., Khorunzhak, N., & Zadorozhnyi, Z. M. (2020). The institutionalization of accounting: the impact of national standards on the development of economies. *Independent Journal of Management & Production*, 11(8), 695-711.
- Shafii, Z., Abidin, A. Z., Salleh, S., Jusoff, K., & Kasim, N. (2013). Post-implementation of Shariah governance framework: The impact of Shariah audit function towards the role of Shariah Committee. *Middle East Journal of Scientific Research*, 13(Special issue), 7-11.
- Shaharuddin, A. (2011). Shariah governance of Malaysian Islamic banking institutions. *Jurnal Ekonomi*, 14(2), 53-57.
- Shi, W., Shambare, N., & Wang, J. (2008). The adoption of internet banking: An institutional theory perspective. *Journal of Financial Services Marketing*, 12(4), 272-286.
- Stanley, O. (2014). Effective Tax administration and institutionalization of accounting systems in small and medium scale enterprises: Evidence from Nigeria. *Journal of Empirical Studies*, 1(2), 85-97.
- Suchman, M.C. (1995). Managing legitimacy: strategic and institutional approaches. *Academy of Management Review*, 20 (3) 571-610.
- Sultan, S. A. M. (2007). A Mini Guide to Shari'ah Audit for Islamic Financial Institutions - A Primer. Kuala Lumpur: CERT Publications.
- Syafei, A. W. (2005). *The responsibility and independence of shariah advisors and the shariah review process in the Indonesian Islamic banks* (Master's thesis, Kuala Lumpur: International Islamic University Malaysia, 2005).
- Uddin, S. J. (2003). Understanding the framework of business in Islam in an era of globalization: a review. *Business ethics: a European review*, 12(1), 23-32.
- Vailatti, J. L., Da Rosa, F. S., & Vicente, E. F. R. (2017). Institutional Theory Applied to Management Accounting: Analysis of the theoretical and methodological contribution of international publications occurred in the 2006-2015 period. *Revista Catarinense da Ciência Contábil*, 16(47), 97-111.

- White HC, Boorman SA, Breiger RL. 1976. Social structure from multiple networks: II. Block models of roles and positions. *Am. J. Social.* 81:730–80.
- Zsidisin, G. A., Melnyk, S. A., & Ragatz, G. L. (2005). An institutional theory perspective of business continuity planning for purchasing and supply management. *International journal of production research*, 43(16), 3401-3420.

The effect of Country Level Governance on Financial Reporting Quality: The Case of Nigeria

Awaisu Adamu Salihi, Haslindar Ibrahim, & Dayana Mastura Baharudin

School of Management, Universiti Sains Malaysia, Malaysia

Abstract

This paper aimed at examining the effect of country level governance on the financial reporting quality of public listed companies in Nigeria. Data for the testing and control variables was collected from the annual report and accounts of the public listed companies obtained from the NSE, while data the explanatory variables was obtained from the World Governance Indicators (WGI) published by the World Bank. The result shows that, regulatory reporting quality and rule of law were found with negative and significant effects on the financial reporting quality. Therefore, it is recommended that, financial reporting council of Nigerian should all necessary measure to prevents companies from engaging in earnings management to improve the quality of earnings, so as to attract foreign direct investment for sustainable economic growth.

Keywords: country level governance; financial reporting quality; Nigeria.

Introduction

The quality governance plays an important role in the steadiness, liquidity, and effectiveness of the stock market of any country, especially in the present business setting, where there is persistence global financial scandals involving high profile companies, then investors' sensitivities to the operations of companies have heightened on the one hand. On the other hand, investors now probe more into country governance quality as opposed to corporate governance policies (Modugu and Dempere, 2020). This is because, the efficiency and usefulness of the corporate governance at the company level is greatly dependent on the general structure, system and quality of country-level governance systems which guide the companies' operations.

For this reason, the companies' financial reporting quality is linked to country's level governance. Country level governance has been clarified as the key driver of efficient business setting (Bota-Avram, 2013). The effect of good governance on corporations is given by the assumption that a country with a moderate level of bureaucracy, a greater legal compliance, and effective mechanisms for controlling corruption is anticipated to develop and maintain a business environment that will minimize voracity and deceitfulness among managers of corporations, resulting in higher levels of ethics and ethical behavior of firms. Because firms are not human, country-level good governance is essential to offer formal structural limitations and guidance on ethical matters (Ferrel et al., 2011). Therefore, if corporations are not operating consistent with major governance structures of a country, then they can be fined and even receive death penalty. However, the manner in which corporations can abide by the legal structures of countries is largely dependent on country-level good governance.

In this study, we examine whether country-level good governance impacts ethical behaviour of firms in African economies. In line with the La Porta et al. (1997), we argue that that a country's legal rules and the enforcement of these rules are associated with the financial reporting quality. This is in line with the argument of Aguilera and Jackson, (2010); Oehmichen, Schripp and Wolff, (2017), that the effectiveness of corporate governance mechanisms significantly depends on the institutional environment on which company. This is because, companies that are operating in emerging economies like Nigeria encounter a wide range of potential challenges (Alon & Hageman, 2017), such as poor private financial markets,

difficulties in accessing financing, concentrated ownership structures and lower institutional ownership as compared to their developed economies (Claessens & Yurtoglu, 2013). Furthermore, the nature of weak legal systems, unstable political systems, poor investor protection, dynamic economic conditions, slow financial development and diverse religions and cultures in emerging countries distinguish them from developed countries (Zattoni & Cuomo, 2008). These reasons warrant Nigeria to be suitable environment for examining the effect of country level governance on financial reporting quality.

Our paper contributes to the extant literature in several ways. First, we present, discuss, and disclose the possible effects that country level governance has on financial reporting quality. Previous studies Udiale, (2012); Okougbo and Okike (2015); Ugebede, Lizam and Kaseri (2013); Abata and Migiro (2016); Eze, (2017); Nwaobia et al. (2019); Evbuomwan (2021) examine the effect of corporate governance on reporting quality but at company level without investigating the feasible influence of country level governance has on the financial reports of public listed companies.

Following the above introduction, the rest of the paper is structured as, review of related literature and hypothesis development, sampling procedure, analysis of findings, discussions and concluding remarks.

Literature Review

The quality of financial reporting determines, and depends upon, the value of accounting reports, therefore, it is a global demand providing a clear and full definition of financial reporting quality (Herath & Albarqi, 2017). They further reveal that, it is important to provide high-quality financial reports to influence users in making investments decisions, and to enhance markets efficiency. Thus, providing ideal methods for assessing the quality of financial reports is another national interest.

This is because investors and other users are largely interested in achieving a high quality of accounting numbers, and this quality can be derived from having a high quality of earnings that is known as one of the most important indicators of capital market efficiency (Herath & Albarqi, 2017), since they heavily relied on the reported earnings (Usman, 2013), for their investment decision and enhancing market efficiency (Herath & Albarqi, 2017), in order to boost country's economic growth.

However, companies that are operating developing and emerging markets like Nigeria found their financial reports with poor quality despite the existence of accountability, regulatory quality, and rule of law at country level. It is documented that, large number of experts argues that the financial reports of companies operating in an emerging economy have low quality, such as falsification of information which disturbed the market and its participants, and that prevents shareholders to have a fair and free view of the companies (Edlund, 2012).

However, earnings management was found to be among the major indicators of reporting quality, as it is a widespread phenomenon (Shuli, 2011). It is a legal way of misleading users because managers are allowed to select accounting method and make operating decision. Thus, manage earnings to achieve their personal objectives, such as higher bonus, job security, maintaining career path, among others (Shuli, 2011), while reporting poor accounting numbers. For example, Burgstahler and Dichev (1997) states that 8-12 percent of firms with small pre-managed earnings decreases exercise discretion to report earnings increases, while 30 to 44 percent of the firms with slightly negative pre-managed earnings exercise discretion to report positive. This means that many companies are using the earnings management either to keep a steadily earnings growth or to avoid the reporting poor accounting numbers. This finding has been affirmed and re-affirmed by many studies especially in emerging economies like Nigeria. Most of these research reveals that firms tend to engage in earnings management to avoid reporting losses and avoid reporting earnings decreases (see. Jacob & Jorgensen

(2007); Charoenwong & Jiraporn, (2009); Taylor and Xu (2010); Ebaid (2012); Pududu & DeViller (2016); Houcine & Halaoua (2017).

Therefore, the wider the engagement of firms in earnings management, the lower the firm's financial reporting quality. Moreso, mostly managers concentrate on accruals management rather than on management earnings or cash flows, such as research and development expenditure and advertisement. This is because negative impact of accruals is easier to manipulate and less visible to stakeholders than cash flows (Choi & Pae, 2011).

Extant literature reveals that, effective accountability acts to raise awareness of legality, restrict fraud and corruption, and increase the responsibilities of government organizations, with an improved understanding when efficiency goals cannot always be fully achieved and ultimately helping to build trust among stakeholders (Mizrahi & Minchuk, 2019). Therefore, accountability becomes an important determinant for better business environments and sound economic activity, which could lead to presentations of true and fair financial statement in accordance with underlying accounting policies. Thus, it is hypothesis that:

H1. Country level of accountability is negatively associated with financial reporting quality in Nigeria.

Low, Kew and Tee (2011) examine the relationship between quality of governance and stock market performance. They document a negative relationship between governance quality and equity return. Thus:

H2. Country level of regulatory quality is negatively associated with financial reporting quality in Nigeria.

Lombardo and Pagano (2006) documents that judicial efficiency and rule of law, but have no relationship with measures of shareholder rights, controlling for risk in reporting information. Thus:

H3. Country level rule of is negatively associated with financial reporting quality.

Methodology

Procedure for Sample Selection

At the initial stage the population of this study was all one hundred and fifty-six (156) public companies listed in the NSE, but fifty companies (50) are listed in the financial sector and were excluded. The exclusion was due to their peculiarity in regulation. This gives one hundred and six (106) companies quoted on the non-financial segment (NFS) of (NSE). Therefore, for the purpose of this study the entire hundred and six (106) NFS quoted companies in the NSE were formed the population of the study. In addition, 9 companies from alternative stock exchanges (ASEM) and growth markets were eliminate because they have less stringent requirements compared to companies listed in the premium and main board. This enables the research to have consistency in data collection. Also, 6 PLCs were delisted from the NSE through the study period and finally 17 PLCs were dropped as a result of incomplete information for the calculation of EMs. Therefore, total of 82 companies were excluded from the study, then 74 companies were available for the period of ten (10) years. This gave a concluding sample of 740 firm year observations in the emerging West African Market.

Measurement of Variables

Explanatory Variables

Country-Level of Governance: The country level of governance was measured using regulatory quality via the Government Index taken from the World Governance Indicators (WGI) published by the World Bank. It identifies global governance dimension more than 200 nations; it was begun in the year 1996 and updated yearly since the year 2002. For this study three (3) aspects of country level governance where used, thus, accountability, regulatory quality, and rule of law.

Testing Variables

Accounting aspect was considered to determine the indicators of national financial reporting quality, through earnings management. For this study, one (1) measure of earnings management was used as a testing variable:

Loss Avoidance Ratio (LOAR): Healy and Wahlen, (1999) reveal that managers have incentives to manipulate earnings to present a more favorable picture to maximize their compensation and maintain their employment with the firm. These incentives for self-wealth maximization of managers would result in a higher-than-expected number of firms with small profits. Following Tang et al. (2012), this study describes small profit (small loss) companies as companies with net income scaled by lagged total assets between 0 and 1 percent (between -1 and 0 percent), and the loss avoidance ratio is calculated as proportion of the total number of small profit companies divided by the total number of small loss companies (Burgstahler et al. 2012; Burgstahler & Dichev 1997). Thus, the greater the proportion, the bigger the level of earnings management, and then the lower the financial reporting quality. Thus;

$$LOAR = \frac{\text{Total No.of small profit companies}}{\text{Total No.of small loss companies}}$$

Econometrics Equations

Model 1

$$LOAR_{it} = \beta_0 + \beta_1 ACC_{it} + \beta_2 FFR_{it} + \beta_3 FGR_{it} + \beta_4 FLV_{it} + \beta_5 FPF_{it} + \beta_6 FSZ_{it}$$

Model 2

$$LOAR_{it} = \beta_0 + \beta_1 RGQ_{it} + \beta_2 FFR_{it} + \beta_3 FGR_{it} + \beta_4 FLV_{it} + \beta_5 FPF_{it} + \beta_6 FSZ_{it}$$

Model 3

$$LOAR_{it} = \beta_0 + \beta_1 RUL_{it} + \beta_2 FFR_{it} + \beta_3 FGR_{it} + \beta_4 FLV_{it} + \beta_5 FPF_{it} + \beta_6 FSZ_{it}$$

Where:

LOAR= Loss Avoidance Ratio

ACC=Accountability

RGQ=Regulatory Quality

RUL=Rule of Law

FFR=Firms Financial Resources

FGR=Firms Growth

FLV=Firms Leverage

FPF=Firms Performance

FSZ=Firms Size

Analysis of Findings

Descriptive Analysis

Table 1 below presents ten (10) years' average mean value, ranges and standard deviation for the three (3) country level governance and one (1) financial reporting quality indicator.

Table 1 Descriptive Analysis

Variable	Mean	Min.	Max.	SD.
LOAR	0.68	-7.00	1.39	0.66
ACC	32.18	27.23	35.47	2.88
RGQ	19.88	13.94	27.01	4.39
RUL	16.53	10.33	21.15	3.52
FFR	0.18	-0.48	0.60	0.34
FGR	-0.03	-0.97	0.80	0.72
FLV	0.03	-0.54	0.42	0.05
FPF	0.01	-0.69	0.10	0.03
FSZ	12.42	4.37	19.99	3.00

Note: LOAR= loss avoidance ratio ACC=accountability, RGQ=regulatory quality, RUL=rule of law, FFR=firms financial resources, FGR=firms growth, FLV=firms leverage, FPF=firms performance, FSZ=firm size.

The mean of loss avoidance ratio (LOAR) as an indicator of financial reporting via earnings management is found with 0.68, which indicates the number of small profit firms is on average 68 times of that of small loss firms. This suggests that firms tend engage in earnings management to avoid earnings decreasing. Regarding to the independent variables, the finding shows that the values are ranging between 1 and 100 as per the score rating of the WGI. The independent variables for the selected country level governance have values between a minimum of 10 and a maximum of 35. The mean values of 32.18, 19.88 and 16.53 for accountability, regulatory quality and rule of law respectively are lower than the standard average “50”. For the control variable, the results indicate an average mean value 0.18, -0.03%, 0.03%, 0.01% and 12.42% for the FFR, FGR, FLV, FPF, FSZ respectively.

Correlation Analysis

Table 2 below present the correlation analysis among the testing, predicting and control variables under the study.

Table 2 Correlation Analysis

	LOAR	ACC	RGQ	RUL	FFR	FGR	FLV	FPF	FSZ
LOAR	1.00								
ACC	-0.17	1.00							
RGQ	0.08	-0.70	1.00						
RUL	-0.14	0.67	-0.95	1.00					
FFR	-0.05	0.42	0.07	0.03	1.00				
FGR	-0.21	0.61	-0.05	0.08	0.75	1.00			
FLV	-0.03	-0.02	0.04	-0.05	-0.03	0.00	1.00		
FPF	-0.03	-0.07	0.05	-0.07	-0.09	-0.07	0.06	1.00	
FSZ	-0.02	-0.01	0.02	-0.02	0.02	0.00	0.02	-0.01	1.00

The results show the correlations between the major variables. The maximum absolute value of the correlation is 0.95 between the two country-level governance measurements RGQ and RUL. The minimum absolute value of the correlation is 0.03, between FFR and RUL. The high correlations were due to the nature of the data used, which is identical within a panel, since it is ranking index. The table shows that most of country-level governance measures are negatively associated with the financial reporting quality proxy (earnings management) proxies, which provides preliminary results supporting hypothesis.

Regression Analysis

Table 3 below presents regression analysis on the association of country level governance and financial reporting quality. The study run pooled OLS, due the fact that the panel effect cannot be examined, as data used was ranking index of the country level governance indicators

obtained from WGI which remained same throughout year. This implies that no significant difference across the unit. Thus, pooled OLS is appropriate.

Table 3 Regression Analysis

Variables	Coef.	t-value
ACC	-0.01	-0.67
RGQ	-0.10	-5.09***
RUL	-0.14	-6.38***
FFR	0.67	6.25***
FGR	-0.39	-6.12***
FLV	-0.23	-0.55
FPF	-1.14	-1.31
FSZ	-0.01	-0.77
Cons	5.44	4.82***
r ²	12.8	
F.stat	0.00	
Obs	740	

***, indicates that parameter estimate is statistical significance at 1 percent level

The result on the accountability found with negative but insignificant relationship with financial reporting quality. This nullifies the earlier expectation and thus suggests that political liberty does not translate into improvement in the quality of financial reports. It further implies that development in democratic practices and accounting policies does not lead to higher quality report. Yet, H1 is rejected.

Regulatory quality (RQ), which measures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development, shows negative and significant relationship with financial reporting quality. This can be explained as, countries with higher regulatory control experience a downward trend in quality of financial reports, perhaps due to tight regulation. Therefore, firms tend to avoid reporting losses and avoid reporting earnings decreases, and that lead to earnings management which in turn reduces the quality of financial reports. Thus, H2 is accepted. This finding is followed the study of Modugu and Dempere (2020) who report negative association between regulatory quality and ASI. This is also consistent with agency and positive accounting theories, which believes managers are motivated to engage in earnings management to issue more informative disclosure (Watts & Zimmerman, 1986).

Rule of law (ROL) reveals a significant negative and significant relationship with financial reporting quality. This indicates that the poor in reporting quality is driven by the poor confidence level of the members of a country in key institutions of governance such as the executive, legislature and judiciary as well as other administrative organs of government. This can be justified as, countries with higher ranking in rule of law record higher reporting quality. The incredibility of government institutions reiterates both existing and potential investors' confidence in the systems of government to safeguard their investments. This further suggest that firms tend to avoid reporting losses and avoid reporting earnings decreases, and that lead to earnings management which in turn reduces the quality of financial reports Thus, H3 is accepted. This finding contradicts the findings of Modugu and Dempere (2020) who report positive association between regulatory quality and ASI. However, it is consistent with the stakeholder's theory which believes managers are motivated to engage in earnings management in meeting the aspirations and needs of stakeholders.

Firms' financial resources are positively and significantly affecting financial reporting quality. Thus, firm with greater resources have enough to display, which impact positively on financial reporting quality. However, firms' growth was found with negative and significant association with financial reporting quality. This suggests that firms with higher revenues

report less quality report, perhaps due to their maturity in the markets. Likewise firm leverage and performance were found with negative but insignificant effect on the financial reporting quality.

Firm size negatively affects financial reporting quality. Although, it is insignificant, but it seems that larger firms are more difficult to be monitored. Thus, larger firms are also more mature, diversified, and sometimes are operating in non-profitable industries which impact negatively on reporting quality. While smaller firms are more dynamic and able to quickly adjust their financial decisions, have more growth opportunities than large firms, which in turn impacts positively on their quality.

Robustness Check

The negative relationship between country-level governance and financial reporting quality of the firms could possibly be misleading. In the main analysis country level governance is counted using ranking index from WGI, and countries might be at variance in regard to their opportunities and challenges over a time. Therefore, the results may lead to a situation where country-level governance and financial reporting of firms are jointly determined by unobserved country-specific variables, which simple OLS regressions probably will not be able to capture. Thus, this study conducts a sensitivity check to determine how robust the results is. In this robustness analysis, the study estimated a fixed-effects model to account for endogeneity problems that possibly will arise from the presence of probable unobserved country-level heterogeneity.

In this robustness analysis country level governance indicators were considered as dummy variables. Thus, it takes value “1” if its ranking index from WGI is above the respective average mean value and “0” value for otherwise. The result of the robustness checks contained in Table 4 reports that, the direction of the relationship remained the same, therefore, the results are robust to possible endogeneity problems that may arise from the existence of possible unobserved country-level heterogeneity.

Table 4 Robustness Analysis

Variables	Coef.	t-value
ACC	0.01	-0.15
RGQ	-0.12	-5.78***
RUL	-0.12	-5.46***
FFR	0.45	4.21***
FGR	-0.22	-3.42***
FLV	-0.14	-0.34
FPF	-1.02	-1.17
FSZ	-0.01	-0.09***
Cons	4.44	3.93***
r ²	10.98	
F.stat	0.00	
Obs	740.00	

Discussion and Conclusion

The quality of accounting number is an integral part of country’s financial health, and by extension lead to economic growth. In this study, we examined the impact of country’s level governance on the financial reporting quality. Specifically, the study investigated the influence of accountability, regulatory quality, and rule of law, on the earnings management of Nigerian public listed companies.

The findings of this study present some strategic implications for the policy makers and regulators: Thus; regulatory quality and rule of law shows negative and significant relationship with earnings management. This indicates that quality of financial reports are largely dependent

on an efficient institutional environment of the presenters of the financial reports. Users of financial reports are careful manager opportunistic behaviour of managing earnings. Hence, investors that are avoiding risk will direct their investment into countries they observed laudable amount of institutional and regulatory efficiency as this will help them to lower their agency and transaction costs and increase their investment returns. The results further suggest some concerns about the quality regulation which may necessitate government intervention to smooth the irregular sides in order to improve quality of financial reports, thereby attract foreign direct investment. However, accountability was found with negative but insignificant relationship with financial reporting quality.

The study recommends to Nigerian government through the financial reporting council to rearrange re-arrange their governance policy framework in line with the global best practice, so as to build confidence in the mind of investors to attain economic growth and sustainable development.

Contribution to Literature

This article shed more light on the CLG matters in restraining earnings management. The article employs WGI country level governance. Extant literatures investigate the association of governance system and earnings quality with focus on company level, ignoring their country level effect especially in an emerging economics such as Nigeria which is characterized with low reporting quality, poor investor protection and poor governance system. Consequently, this paper is based on country level governance that addresses financial reporting quality.

The paper gives constructive evidence concerning Nigeria. This Country has received adequate attention by the existing researches, despite the country's ranking as the most giant economy in Africa in terms of economic index with Gross Domestic Product (GDP) of 514.28B U.S Dollar as at 2021, yet country level governance ranking is low. Therefore, results of negative association among corporate regulatory reporting quality, rule of law reporting and earnings management suggest low quality financial report from Nigerian public companies, thereby discourages foreign direct investment.

Direction for Future

First, this study is limited to only three (3) indicators of country level governance, therefore door is opened for future studies to used other important indicators of country level governance such as political stability, government effectiveness, and control of corruption in assessing financial reporting quality. Second, this study is based on only measure of earnings management (loss avoidance ration), avenue is open for future studies to used other measures of earnings management such as profit decline avoidance ratio, accrual ratio. The study is also limited to only companies listed in the non-financial sector companies. Thus, future studies should use financial sector of Nigerian stock exchange.

References

- Abata, M. A., & Migiro, S. O. (2016). Corporate governance and management of earnings: Empirical evidence from selected Nigerian-listed companies. *Investment Management and Financial Innovations*, (13, Iss. 2 (contin1)), 189-205.
- Aguilera, R. V., & Jackson, G. (2010). Comparative and international corporate governance. *Academy of Management annals*, 4(1), 485-556.
- Boța-Avram, C. (2013). Linking governance to efficacy of corporate boards: a global perspective. *Procedia-Social and Behavioral Sciences*, 99, 1073-1081.
- Burgstahler, D. C., Hail, L., & Leuz, C. (2006). The importance of reporting incentives: Earnings management in European private and public firms. *The accounting review*, 81(5), 983-1016.

- Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of accounting and economics*, 24(1), 99-126.
- Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of accounting and economics*, 24(1), 99-126.
- Charoenwong, C., & Jiraporn, P. (2009). Earnings management to exceed thresholds: Evidence from Singapore and Thailand. *Journal of Multinational Financial Management*, 19(3), 221-236.
- Choi, T. H., & Pae, J. (2011). Business ethics and financial reporting quality: Evidence from Korea. *Journal of business ethics*, 103(3), 403-427.
- Ebaid, I. E. S. (2012). Earnings management to meet or beat earnings thresholds: Evidence from the emerging capital market of Egypt. *African Journal of Economic and Management Studies*.
- Edlund, H. (2012). Reasons behind presumed low financial reporting quality (FRQ) in China.
- Evbuomwan, I. (2021). *Corporate governance and earnings management in listed Nigerian manufacturing companies* (Master dissertation, Dublin, National College of Ireland).
- Eze, I. O. (2017). Corporate governance mechanisms and earnings management in Nigerian food product companies. *Journal of Administrative and Business Studies*, 3(1), 1-9.
- Ferrell, L., & Ferrell, O. C. (2011). *Ethical Decision Making for Business*. South-Western Cengage Learning.
- Hageman, A. M., & Alon, A. (2017). An Institutional Perspective on Corruption in Transition Economies. *Corporate Governance: An International Review*, 25(3), 155-166.
- Hageman, A. M., & Alon, A. (2017). An Institutional Perspective on Corruption in Transition Economies. *Corporate Governance: An International Review*, 25(3), 155-166.
- Hassan, S. U. (2013). Financial Reporting Quality, Does Monitoring Characteristics Matter? An Empirical Analysis of Nigerian Manufacturing Sector. *The Business & Management Review*, 3(2), 147.
- Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting horizons*, 13(4), 365-383.
- Herath, S. K., & Albarqi, N. (2017). Financial reporting quality: A literature review. *International Journal of Business Management and Commerce*, 2(2), 1-14.
- Houcine, A., & Halaoua, S. (2017). Do Tunisian firms manage earnings to attain thresholds?. *International Journal of Managerial and Financial Accounting*, 9(1), 19-43.
- Jacob, J., & Jorgensen, B. N. (2007). Earnings management and accounting income aggregation. *Journal of Accounting and Economics*, 43(2-3), 369-390.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1997). Legal determinants of external finance. *The journal of finance*, 52(3), 1131-1150.
- Lombardo, D., & Pagano, M. (2006). Legal determinants of the return on equity. *Corporate and institutional transparency for economic growth in Europe*, 1, 235-270.
- Low, S. W., Kew, S. R., & Tee, L. T. (2011). International evidence on the link between quality of governance and stock market performance. *Global Economic Review*, 40(3), 361-384.
- Mizrahi, S., & Minchuk, Y. (2019). Accountability and performance management: Citizens' willingness to monitor public officials. *Public Management Review*, 21(3), 334-353.
- Modugu, K. P., & Dempere, J. (2020). Country-Level Governance Quality and stock market performance of GCC countries. *The Journal of Asian Finance, Economics and Business*, 7(8), 185-195.
- Nwaobia, A. N., Kwarbai, J., & Olajumoke, J. (2019). Earnings management and corporate survival of listed manufacturing companies in Nigeria. *International journal of development and sustainability*, 8(2), 97-115.

- Oehmichen, J., Schrapp, S., & Wolff, M. (2017). Who needs experts most? Board industry expertise and strategic change—a contingency perspective. *Strategic Management Journal*, 38(3), 645-656.
- Okougbo, P. O., & Okike, E. (2015). Corporate governance and earnings management: empirical evidence from Nigeria. *Corporate ownership and control*, 12(4), 312-326.
- Pududu, M. L., & De Villiers, C. (2016). Earnings management through loss avoidance: Does South Africa have a good story to tell?. *South African Journal of Economic and Management Sciences*, 19(1), 18-34.
- Shuli, I. (2011). Earnings management and the quality of the financial reporting. *Perspectives of Innovations, Economics, and Business*, 8(1231-2016-100747), 45-48.
- Tang, Q., Chen, H., & Lin, Z. (2012). How to Measure Country Level Financial Reporting Quality?. *Available at SSRN 2114810*.
- Taylor, G. K., & Xu, R. Z. (2010). Consequences of real earnings management on subsequent operating performance. *Research in accounting regulation*, 22(2), 128-132.
- Uadiale, O. (2012). Earnings management and corporate governance in Nigeria.
- Ugbede, O., Lizam, M., & Kaseri, A. (2013). Corporate governance and earnings management: empirical evidence from Malaysian and Nigerian banks. *Asian journal of management sciences & education*, 2(4), 1-21.
- Watts, R., & Zimmerman, J. (1986). *Positive accounting theory*. Englewood Cliffs, Prentice-Hall
- Zattoni, A., & Cuomo, F. (2008). Why adopt codes of good governance? A comparison of institutional and efficiency perspectives. *Corporate governance: an international review*, 16(1), 1-15.

Corporate Environmental and Financial Performance Nexus in Nigeria: The Intervening Role of Board Size

Aliyu Sani Shawai¹, Lok Char Lee¹, & Dayana binti Jalaludin²

School of Management, Universiti Sains Malaysia, Malaysia¹

Faculty of Universiti of Malaya, Malaysia²

Corresponding email: shawai3@student.usm.my

Abstract

The link between corporate environmental and financial performance has received significant attention in recent decades, however, in general the findings remain inconclusive and inconsistent. Given the debate on the nature of the relationship, this study proposed a theory-based of data envelopment analysis (DEA) to measure the environmental performance as a predictor of financial performance proxy with ROA and Tobin's Q using less developed country like Nigeria with all listed firms in the Nigerian exchange group plc. Panel data analysis will be employed to analyse and interpret the results.

Keywords: data envelopment analysis; environmental performance; financial performance; Nigerian exchange group; return on asset; Tobin's Q.

Introduction

Firm performance is used as an index to measure the ability of management in a company as well as net effectiveness and soundness of business efficiency and performance since the ultimate objectives of a business is to maximises profit (Oluseyi-Sowunmi et al., 2020), and it shows how well a company uses its resources to maximise profits and wealth for its stakeholders. The performance can be measured through possible cost reduction and net return improvement via either increase in sales of production or a production mix to attain profit maximisation as the organisation's concern is profit making and dividend payment(Ojeka Stephen. A et al., 2017).

A sound financial decision-making requires a clear understanding of the goals and objectives of a company, and these goals hold a key direction for managers in any business activities(Elsayed Khaled & Paton David, 2009). Financial performance improvement has become key for firm's actualisation of the profit maximisation goal and as such maximising return on assets and shareholder's funds is solely built on the firm's efficiency.(Petrus Daniël Erasmus & de Villiers Stellenbosch, 2008)assert that, financial performance measures profitability and liquidity among others and provides a strong tool to stakeholders to evaluate the past and current financial performance of the firm.

Many industrial sectors in Nigeria have faced challenges that affected their revenue and profit after tax over the years, the financial performance of listed companies in Nigeria have not been stable (Egwurube David O. et al., 2020). The instability and fluctuations in the financial performance of listed firms in the Nigerian Group Exchange which is an indication that firms in Nigeria have not achieved an optimum capital structure that maximises the firm's value and minimises the firm's risk(Adetunji et al., 2016).

Moreover, the process of delisting Nigerian firms shows their financial challenges, and the purpose of delisting is to enable the companies explore strategic opportunities, alliances and collaboration that can booster earnings and/or provide synergised benefits with little or no regulatory obligations as reported by the exchange (NGX website, 2022). As per the records by the exchange, a total of 23 companies have delisted from the Nigerian stock market between

March 2018 and January 2022. Below is the statistical evidence of the companies delisted from the exchange.

Table 1. Statistical summary of Nigerian firms delisted from 2018 to 2022

S/N	COMPANY NAME	Date delisted	Reasons
1.	Seven-Up Bottling Company Plc	05/Mar/2018	Voluntary
2.	African Paints Nig Plc	06/Apr/2018	Regulatory
3.	Afrik Pharmaceuticals Plc	06/Apr/2018	Regulatory
4.	Paints and Coatings Manufacturer Nig Plc	17/Aug/2018	Voluntary
5.	Great Nigeria Insurance Plc	25/Jan/2019	Voluntary
6.	Diamond Bank Plc	01/Apr/2019	Merged with Access Bank Plc
7.	Newrest ASL Nigeria Plc	13/May/2019	Voluntary
8.	First Aluminium Nig Plc	31/Jul/2019	Voluntary
9.	Fortis Microfinance Bank Plc	21/Aug/2019	Regulatory
10.	Skye Bank Plc	21/Aug/2019	Regulatory
11.	Dangote Flour Mills Plc	18/Nov/2019	Voluntary
12.	A.G Leventis Nig Plc	07/Jan/2020	Voluntary
13.	Cement Company of Northern Nig Plc	09/Jan/2020	Merged with BUA Cement Plc
14.	Continental Reinsurance Plc	17/Jan/2020	Voluntary
15.	Anino International Plc	12/Oct/2020	Regulatory
16.	11 Plc	07/May/2021	Voluntary
17.	Evans Medical Plc	14/Jun/2021	Regulatory
18.	Nigeria-Germany Chemicals Plc	14/Jun/2021	Regulatory
19.	Roads Nigeria Plc	14/Jun/2021	Regulatory
20.	Unic Diversified Holdings Plc	14/Jun/2021	Regulatory
21.	Portland Paints & Products Nig Plc	17/Sept/2021	Merged with Chemical & Allied Products Plc
22.	Studio Press Nigeria Plc	07/Jan/2022	Voluntary
23.	Union Diagnostic & Clinical Services Plc	07/Jan/2022	Voluntary

Source: Nigerian Exchange Group website (2022)

In addition to the problematic situation described in the above paragraph, the study also identified the following gaps in the corporate environmental and firm's performance in general and serve as further justifications for conducting this research.

Firstly, diversity of measurement strategies leading to development of non- standardised and non-theory based environmental performance measurements (Al-Tuwaijri et al., 2004; Tyteca, 1996; Tyteca Daniel, 1997) has been critically identified as a gap especially in corporate environmental and financial performance research and this is the major reasons why results regarding corporate environmental and financial performance are mixed ranging from positive significant relationship such as (Aslam et al., 2021; Liu, 2020; Nguyen et al., 2021) and some scholars found negative relationship such as (Garner. et al. 2019; Lang 2016; Domenico 2014; Jagong 2013) while others found mixed/neutral relationship (Alareeni & Hamdan, 2020; Rohani, A., Jabbour, M. and Abdel-Kader, 2021; Tan et al., 2021). This study seeks to try towards filling this gap by employing Data Envelopment Analysis (DEA) a theory based, standardised and generally applicable in corporate environmental performance measurement strategy for the measurement of environmental performance of listed firms in Nigeria. Secondly, most of the studies concerned with relationship between corporate environmental and financial performance were carried out in the developed world especially US, Europe and Canada (Abban & Hasan, 2021; Aslam et al., 2021; Gonenc & Scholtens, 2017; Liu, 2020; Tzouvanas et al., 2020), and less studies exist in less developed countries and most of these studies reviewed attempted to analyse the relationship using cross sectional regression analysis in order to estimate the relationship. This study will conduct panel data

regression analysis combining cross-sectional & time-series analysis of the relationship between corporate environmental and financial performance in the context of less developed countries like Nigeria.

The overall aim and objectives are to analyse the impact of corporate environmental and financial performance of Nigerian firms listed with the intervening role of board size. The specific objectives are:

To examine the effect of environmental performance on financial performance

To examine the intervening role of board size in the relationship between corporate environmental and financial performance nexus.

Based on the above objectives, hypotheses were raised

H₁₀: There is no positive and significant relationship between corporate environmental and financial performance nexus.

H_{1a}: There is positive and significant relationship between corporate environmental and financial performance nexus.

H₂₀: There is no positive and significant relationship between corporate environmental and financial performance with intervening variable of board size.

H_{2a}: There is positive and significant relationship between corporate environmental and financial performance with intervening variable of board size.

The remaining sections entails literature review and methodological approach to the study.

Literature Review

Corporate environmental performance is essential for long-term corporate success and ensuring markets deliver value across society (Oliver F. Williams, 2014). Firms that are highly environmentally sensitive are engaged in operations and production of products and the process of production may be hazardous as the waste products from these operations are disposed directly to the environment (Sharifa and Baktiar, 2011).

Several studies were conducted to find out the link between environmental performance and financial performance, but despite these efforts, many researchers claimed that findings of such research are contradictory, ambiguous, and inconclusive (Brooks & Oikonomou, 2018). Many scholars found Positive Significant relationship such as (Aslam et al., 2021; Liu, 2020; Nguyen et al., 2021) and some scholars found Negative relationship such as (Garner. et al. 2019; Lang 2016; Domenico 2014; Jagong 2013) while others found mixed/neutral relationship (Alareeni & Hamdan, 2020; Rohani, A., Jabbour, M. and Abdel-Kader, 2021; Tan et al., 2021).

Many empirical studies have investigated the link between environmental performance and financial performance, but despite these efforts, many researchers claimed that findings of such research are contradictory, ambiguous, and inconclusive (Brooks & Oikonomou, 2018).

Various arguments justified how proactive environmental practices may impact on financial performance positively (Clarkson et al., 2011). Most of these arguments are on the idea that proactive environmental measures provide cost-based competitive advantage which affects financial performance. Porter (1980) argued that one best way for organisations to attain competitive advantage is pursuing a low-cost strategy and where environmental performance has significant impact on costs, it results to increase in profitability through financial performance measures such as return on assets (ROA). It is argued that improved measures of environmental practices curtail compliance costs, lower emission charge and community pressure is also minimised.

Environmental management practices and financial performance by (Aslam et al., 2021) and (Abban & Hasan, 2021) and all reported that, with comprehensive and sound environmental performance and/or environmental management practices tend to establish a positive and significant impact between environmental performance and firm's performance. Similarly, Hang Song et al., (2017) and Halit Gonenc & Bert S. (2017) also concluded that a sound environmental management strategies and good environmental performance could enhance firm's performance positively and maximises the profitability of the firms. Research was conducted by (Liu, 2020) and assert that proactive environmental management strategy is helpful in improving financial performance of a firm and hence positive link between environmental performance and firm's performance. In the same vein, Panagiotis T. et al., (2020) confirmed that superior corporate environmental performance enhances the firm's performance and hence boost the profitability of an organisation. Similarly, Chen & Ma, (2021) examined whether green investment improve energy firm performance in China and reported that green investment has a significant and positive correlation with financial performance proxies and suggested that increasing green investment helps to improve financial performance of the firm.

It was confirmed that Khanna & Damon, (1999) and Hassel et al., (2005) reported a negative result between environmental and firm's performance because of poor environmental performance.

Similarly, Busch & Hoffmann, (2011) and Horváthová, (2012) reported a negative link between environmental and financial performance when using carbon management as a processed-based measurement, we find a negative relationship and as well in the short term. Moreover, Henry Aigbed (2021) reported a negative link between environmental and financial performance nexus. Research conducted on the link between corporate environmental performance (CEP) and corporate financial performance (CFP) and reported a U-Shape relationship with mixed results ranging from positive effects if the CEP is high and negative if its low. This implies that Higher CEP enhances the firm performance while low CEP reduces profitability of the firms and some of such research includes (Alareeni & Hamdan, 2020; Kim Lim Tan et al., 2020; Trumpp & Guenther, 2017). Similarly, Tonje Marthinsen et al., (2021) examined the link between green innovation damage and financial performance of oil & gas companies and reported a mixed results with high environmental scores, it positively affects the firm's performance but with low level, it turns to negative impact.

Table 1. Summary of the link between corporate environmental and financial performance nexus.

S/N	Author and Year	Title	Method of Data Analysis	Findings	Relationship
1.	Aslam, Shoaib et al., (2021)	Environmental Management Practices and Financial Performance Using Data Envelopment Analysis in Japan. The mediating role of environmental performance.	Regression Analysis using Generalised Moment of Methods (GMM).	Our findings suggest that Environmental Management Practices (EMPs) have a positive effect on Financial Performance	Positive
2.	(Abban & Hasan, 2020)	The causality direction between environmental performance and financial performance in Australian mining companies - A panel data analysis. (Australia)	Panel Lease Squares Regression Analysis	The study also contends that improved environmental performance leads to better	Positive

S/N	Author and Year	Title	Method of Data Analysis	Findings	Relationship
3.	Hang Song (2017)	Can environmental Management improve financial performance? An empirical study of A-shares listed companies in China	Regression Analysis	financial performance. We found that corporate environmental management has a significant positive correlation with future financial performance.	Positive
4.	Halit Gonen & Bert. S (2017)	Environmental & financial performance of Fossil fuel firms. A clear inspection of their interaction. (U.S)	Regression Analysis using two stages least squares and three stage last squares	The results concluded that there is significant and positive impact between environmental and financial performance of fossil fuel firms.	Positive
5.	Liu Z. (2020)	Unravelling the complex relationship between environmental performance & financial performance Multilevel Analysis. (U.S)	Multilevel Analysis	The results confirmed the positive impact of environmental performance on financial performance.	Positive
6.	Panagiotis T. et al., (2020)	Environmental & Financial performance in the European Manufacturing sector. An analysis of extreme tail dependency. (Europe)	Quantile Regression Model	We find out that firms with superior environmental performance tend to be more profitable and the links can be characterised as positive and significant,	Positive
7.	Chen. Y & Ma. Y (2021)	Does green investment improve energy firm performance	Regression Model using GMM	The research results show that green investment has a significant and positive correlation with Financial Performance.	Positive
8.	Khanna & Damon (1999)	EPA voluntary 33/50 Program: Impact on toxic releases & economic performance of firms. US	Regression Analysis using two stages Generalised least squares method.	The program also had a statistically significant negative impact on the current return on investment of firms.	Negative
9.	Hassel et al., (2005)	The value relevance of environmental performance. Sweden	Regression Analysis	The results indicate that environmental	Negative

S/N	Author and Year	Title	Method of Data Analysis	Findings	Relationship
				performance has a negative influence on the market value of firms.	
10.	Bush Hoffman (2011)	& How hot is your Batton line? Liking carbon & financial performance. Switzerland	Regression Analysis	when using carbon management as a processed-based measurement, we found a negative relationship.	Negative
11.	Horvathova Eva (2012)	The impact of environmental performance on firm performance. Short-term & Long-term benefits. European countries	Regression Analysis.	The results shows that there is negative effect between environmental performance and financial performance in the short-term.	Negative
12.	Henry Aigbed (2021)	An empirical analysis of the effect of financial performance (FP) on environmental (EP) performance of companies in Global supply chain. 32 Countries	Hierarchical Regression Analysis.	The effect of FP on EP as measured by revenue growth was negative and statistically significant.	Negative
13.	Alareeni Hamdan (2020)	& ESG Impact on performance of U. S S&P 500 listed firms	Panel Regression Analysis.	The results showed that ESG dimensions has a mixed findings in relation to financial performance proxies (ROA, ROE, and Tobin's Q).	Mixed
14.	Tan Kim Lim et al., (2020)	Doing good does you good? The financial impact of individual CSR dimensions. A Malaysian context	Cross-sectional Correlation Analysis.	The results showed that the financial impact of CSR dimension concludes a mixed finding.	Mixed
15.	Trumpf Guenther (2017)	& Too little or too much? Exploring U-shaped relationship between Corporate environmental performance (CEP) and corporate financial performance (CFP). 6 Continents	OLS Regression Analysis	The results conclude a mixed finding, with low CEP the impact is negative and positive if the CEP is high.	Mixed
16.	Tonie M. et al., (2021)	Does green innovation damage financial performance of oil & gas companies	Regression Model & Correlation Analysis.	The results show a mixed depending on whether the	Mixed

S/N	Author and Year	Title	Method of Data Analysis	Findings	Relationship
				environmental score is high or low (both positive & negative).	

Source: Compiled by the Author (2022)

Methodological Approach

This study will adopt ex-post facto design as the events already exists and the population of the study will consist of all firms listed on the Nigerian Exchange Group.

The variables include dependent variables of financial performance (ROA & Tobin's Q) and independent variable(predictor) of environmental performance using DEA and intervening variable of board size with control variables of company size, company age and financial leverage. Environmental performance using data envelopment analysis (DEA) will be used in this and Many models for measuring environmental performance have been proposed under constant returns to scale environmental DEA technology (Färe & Grosskopf, 2004; Tyteca, 1996; Tyteca Daniel, 1997; Zaim, 2004; Zhou et al., 2008, 2016).

There are various approaches employed within the parlance of data envelopment analysis (DEA) for measuring and evaluating environmental performance of decision-making units (DMU). Basic DEA model was proposed by Charnes, Cooper, and Rhodes (CCR) in 1978, and which assumed as constant returns to scale (CRS). Under the circumstance of the CRS assumption, all DMUs are operating at optimal scale no matter the size of the firms.

However, the pure environmental performance index first proposed by Tyteca, (1996;1997), based on the earlier work of Fare et al. (1989) amplified and applied by Zhou et al., (2016) is used in this study. As this study includes only one pollutant, it relies on the radial version of the model as specified by Zhou et al. (2016). Thus, the model is first specified its general form originally constructed by Färell (1957) as follows:

$$\begin{aligned}
 S = \{(y, b, x): \quad & y_o - \sum_{j=1}^n \lambda_j y_{ij} \leq 0, \quad (i = 1, 2, 3, \dots, n). \\
 & x_o - \sum_{j=1}^n \lambda_j x_{rj} \geq 0, \quad (i = 1, 2, 3, \dots, n). \\
 & b_o - \sum_{j=1}^n \lambda_j b_{lj} = 0, \quad (i = 1, 2, 3, \dots, n). \\
 & \lambda_j \geq 0, \quad (j = 1, 2, 3, \dots, n)\}
 \end{aligned} \tag{1}$$

Where:

- S Represents the production technology
- λ Denotes intensity variable
- y_o Desirable production outputs for the focused DMU
- y Desirable production outputs for other DMUs
- x_o Represents the production inputs for the focused DMU
- x_r Represents the production inputs for other DMUs
- b_o Undesirable or bad production outputs (pollutants) for the focused DMU
- b Undesirable or bad production outputs (pollutants) for other DMUs

The form of this model which directly computes pure environmental performance of companies was modelled by Tyteca (1997) as follows:

$$\begin{aligned}
& \min_{\theta, \lambda} \theta = EP \\
& \text{Subject to:} \\
& y_o - \sum_{j=1}^n \lambda_j y_{ij} \leq 0, \quad (i = 1, 2, 3, \dots, n). \\
& x_o - \sum_{j=1}^n \lambda_j x_{rj} \geq 0, \quad (i = 1, 2, 3, \dots, n). \\
& b_o - \sum_{j=1}^n \lambda_j b_{lj} = 0, \quad (i = 1, 2, 3, \dots, n). \\
& \lambda_j \geq 0, \quad (j = 1, 2, 3, \dots, n)
\end{aligned} \tag{2}$$

In application, the data on inputs and outputs for all the decision-making units (DMUs) are required to make the environmental DEA technology be applicable. The current study will use Labour cost, capital employed and energy & overhead as inputs, Turnover as output while Carbon emission as undesirable output (pollutant).

Consequently, the DEA specific to this study may modelled as follows:

$$\begin{aligned}
& \min_{\theta, \lambda} \theta = EP \\
& \text{Subject to:} \\
& TO_o - \sum_{j=1}^n \lambda_j TO_{kj} \leq 0 \quad (k = 1, 2, 3, \dots, n). \\
& LB_o - \sum_{j=1}^n \lambda_j LB_{ij} \geq 0 \quad (i = 1, 2, 3, \dots, n). \\
& CE_o - \sum_{j=1}^n \lambda_j CE_{rj} \geq 0 \quad (r = 1, 2, 3, \dots, n). \\
& EO_o - \sum_{j=1}^n \lambda_j EO_{lj} \geq 0 \quad (l = 1, 2, 3, \dots, n). \\
& \theta CO_o - \sum_{j=1}^n \lambda_j CO_{mj} = 0 \quad (m = 1, 2, 3, \dots, n). \\
& \lambda_j \geq 0
\end{aligned} \tag{3}$$

Where:

- EP Represents the environmental performance
- TO_o Represents the production output, turn over, for the focused company.
- TO_k Represents the production output, turn over, for other companies.
- LB_o Represents the total labour cost (a production input) for the focused companies.
- LB_i Represents the total labour cost (a production input) for other companies.
- CE_o Represents the capital employed (a production input) for the focused companies.
- CE_r Represents the capital employed (a production input) for other companies.
- EO_o Represents the energy and overhead cost (a production input) for the focused companies.
- EO_l Represents the energy and overhead cost (a production input) for other companies.

CO_o Represents the carbon emission (the pollutant) for the focused companies.
 CO_m Represents the carbon emission (the production input) for other companies.

Input and Output Variables Employed in the DEA Methodology

From the previous studies, we know that DEA has been one of the key measurement methods to assess the firm performance or country performance see table 1 below. The challenges of productivity measurement lie primarily on the selection of input and output variables (Li & Tsai, 2018). The selected input variables need to represent the key elements that are required to produce the product and/or deliver the services (Li & Tsai, 2018).

Different authors used different variables to define the firm performance see (T. Y. Chen, 2002; Fenyves & Tarnóczy, 2020; Li & Tsai, 2018) and country or region performance see (Song Malin et al., 2012; Vlontzos George et al., 2014)

Fenyves & Tarnóczy, (2020), choose tangible assets, current assets, non-current liabilities, current liabilities, material expenses, personnel expenses, and depreciation as inputs variables while net sales revenue, operating profit or loss and earnings after taxes as output variables at firm performance level. Similarly, Zhang (2018) used 30 Provincial regions of China, 2003–2014, Capital, labor, build-up land, water and energy as inputs variable, Solid waste, household refuse, SO₂, soot, industrial dust, wastewater as undesirable output while GDP as desirable output.

This paper concerned about the firm performance of companies listed in the Nigerian Group Exchange in relation to corporate environmental performance. We choose input variables as labour cost(X1), capital employed(X2), and energy & overhead(X3), these three variables reflect all aspects of inputs. Output variable (desirable) is turnover(Y1), while output variable (undesirable) is carbon emission(B1).

Table 1. Summary of the Variables and their Measurements:

Variables	Symbol	Measurements	Source
Independent: Environmental Performance using DEA inputs and outputs (Desirable & Undesirable)	ENVP	Data envelopment Analysis using inputs, desirable and undesirable output.	(Zhou et al., 2016)
Input: Labour cost	LC	Salaries Plus all Director's remuneration	(Fenyves & Tarnóczy, 2020; Li & Tsai, 2018)
Input: Capital employed	CE	Total assets Minus Current liabilities	(Fenyves & Tarnóczy, 2020; Li & Tsai, 2018)
Input: Energy & Overhead	EO	Total expenditure Minus Labour costs	(Fenyves & Tarnóczy, 2020; Li & Tsai, 2018)
Output:(Desirable) Turnover	TO	Net sale revenue	(Fenyves & Tarnóczy, 2020; Li & Tsai, 2018)
Output: (Undesirable) Carbon emissions	CE	Carbon emissions of the firm for the year	(Fenyves & Tarnóczy, 2020; Li & Tsai, 2018)
Dependent: Financial Performance:	FPER		
Return on Assets	ROA	Net income to total assets.	(Nor et al., 2016; Smith et al., 2007; Victor Chiedu Oba, Musa Inuwa Fodio, 2012).
Tobin's Q	TQ	<i>Total market value of equity (market capitalisation) plus Total book value of Assets/Total book value of Assets.</i>	(Buallay, 2021)

Variables	Symbol	Measurements	Source
Intervening Variables:			
Board Size	BSIZE	the total number of directors on the board.	(Kabir & Thai, 2017).
Control:			
Company Size	CSIZE	Log of Total Asset	(Giannarakis et al. 2019; Welbeck et al. 2017; Fonseka et al. 2019)
Company Age	CAGE	How long the company had been listed	(Kabir Tahir Hamid and Mohammed Ibrahim, 2020)
Financial Leverage	LEV	Total Liability/Total Equity.	(Al-Tally, 2014; Ibrahim, Hashim, & Ariff, 2020).

Source: Compiled by the Author (2022)

To determine the direct link between environmental performance and financial performance:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 X_{it} + \beta_3 CS_{it} + \beta_4 CA_{it} + \beta_5 FLV_{it} + \varepsilon_{it} \dots 1$$

Where first model is given as:

$$FP_{it} = \beta_0 + \beta_1 EPI_{it} + \beta_2 CS_{it} + \beta_3 CA_{it} + \beta_4 FLV_{it} + \varepsilon_{it} \dots \dots 2$$

The above equation is further sub-divided in to two equations based on the financial performance:

$$ROA_{it} = \beta_0 + \beta_1 EPI_{it} + \beta_2 CS_{it} + \beta_3 CA_{it} + \beta_4 FLV_{it} + \varepsilon_{it} \dots \dots 3$$

$$Tobin's Q_{it} = \beta_0 + \beta_1 EPI_{it} + \beta_2 CS_{it} + \beta_3 CA_{it} + \beta_4 FLV_{it} + \varepsilon_{it} \dots 4$$

The second model of this study will investigate the effects of intervening variable on the link between the dependent (financial performance) and independent (environmental performance) variables:

$$FP_{it} = \beta_0 + \beta_1 Csize_{it} + \beta_2 Cage_{it} + \beta_3 FLEV_{it} + \beta_4 EPI_{it} + \beta_5 BS_{it} + \beta_6 (EPI_{it} * BS_{it}) + \varepsilon_{it} \dots \dots \dots 6$$

Where:

FP_{it} = Financial Performance

β_0 = Beta

$\beta_1 - \beta_7$ = The slope of the independent, moderating and controlling variables

$Csize_{it}$ = Company size

$Cage_{it}$ = Company Age

$FLEV_{it}$ = Financial Leverage

EPI_{it} = Environmental Performance Index

BS_{it} = Board Size

ε_{it} = Error term

The Intervener: Board size

$$ROA_{it} = \beta_0 + \beta_1 Csize_{it} + \beta_2 Cage_{it} + \beta_3 FLEV_{it} + \beta_4 FO_{it} + \beta_5 EPI_{it} + \beta_6 Bsize_{it} + \beta_7 (EPI_{it} * Bsize_{it}) + \varepsilon_{it} \dots \dots \dots 7$$

$$Tobin's Q_{it} = \beta_0 + \beta_1 Csize_{it} + \beta_2 Cage_{it} + \beta_3 FLEV_{it} + \beta_4 FO_{it} + \beta_5 EPI_{it} + \beta_6 Bsize_{it} + \beta_7 (EPI_{it} * Bsize_{it}) + \varepsilon_{it} \dots \dots \dots 8$$

In conclusion, the above are the clear proposal to be investigated and fully analyse for interpretation and discussions.

References

- Abban, A. R., & Hasan, M. Z. (2021). The causality direction between environmental performance and financial performance in Australian mining companies - A panel data analysis. In *Resources Policy* (Vol. 70). <https://doi.org/10.1016/j.resourpol.2020.101894>
- Adetunji, A., Akinyemi, A., & Rasheed, O. (2016). FINANCIAL LEVERAGE AND FIRMS' VALUE: A STUDY OF SELECTED FIRMS IN NIGERIA. *European Journal of Research and Reflection in Management Sciences*, 4(1). www.idpublications.org
- Alareeni, B. A., & Hamdan, A. (2020). ESG impact on performance of US S&P 500-listed firms. *Corporate Governance (Bingley)*, 20(7), 1409–1428. <https://doi.org/10.1108/CG-06-2020-0258>
- Al-Tuwaijri, S. A., Christensen, T. E., & Hughes, K. E. (2004). The relations among environmental disclosure, environmental performance, and economic performance: A simultaneous equations approach. *Accounting, Organizations and Society*, 29(5–6), 447–471. [https://doi.org/10.1016/S0361-3682\(03\)00032-1](https://doi.org/10.1016/S0361-3682(03)00032-1)
- Aslam, S., Elmagrhi, M. H., Rehman, R. U., & Ntim, C. G. (2021). Environmental management practices and financial performance using data envelopment analysis in Japan: The mediating role of environmental performance. *Business Strategy and the Environment*, 30(4), 1655–1673. <https://doi.org/10.1002/bse.2700>
- Brooks, C., & Oikonomou, I. (2018). The effects of environmental, social and governance disclosures and performance on firm value: A review of the literature in accounting and finance. In *British Accounting Review* (Vol. 50, Issue 1, pp. 1–15). <https://doi.org/10.1016/j.bar.2017.11.005>
- Buallay, A. (2021). *Sustainability reporting and agriculture industries' performance: worldwide evidence*. <https://doi.org/10.1108/JADEE-10-2020-0247>
- Chen, T. Y. (2002). Measuring firm performance with DEA and prior information in Taiwan's banks. *Applied Economics Letters*, 9(3), 201–204. <https://doi.org/10.1080/13504850110057947>
- Chen, Y., & Ma, Y. (2021). Does green investment improve energy firm performance? In *Energy Policy* (Vol. 153). <https://doi.org/10.1016/j.enpol.2021.112252>
- Deng Xiyue, & du Limin. (2020). Estimating the environmental efficiency, productivity, and shadow price of carbon dioxide emissions for the Belt and Road Initiative countries. *Journal of Cleaner Production*, 277, 123–135.
- Elsayed Khaled, & Paton David. (2009). The impact of Financial Performance on Environmental Policy_Does Life Cycle Matter? *Business Strategy & Environment*, 18, 397–413.
- Färe, R., & Grosskopf, S. (2004). Modeling undesirable factors in efficiency evaluation: Comment. *European Journal of Operational Research*, 157(1), 242–245. [https://doi.org/10.1016/S0377-2217\(03\)00191-7](https://doi.org/10.1016/S0377-2217(03)00191-7)
- Fenyves, V., & Tarnóczy, T. (2020). Data envelopment analysis for measuring performance in a competitive market. *Problems and Perspectives in Management*, 18(1), 315–325. [https://doi.org/10.21511/ppm.18\(1\).2020.27](https://doi.org/10.21511/ppm.18(1).2020.27)
- Gonenc, H., & Scholtens, B. (2017). EP & FP of Fossil Fuel Firms_ A closer inspection of their interaction. *Ecological Economics*, 132, 307–328.
- Hassel, L., Nilsson, H., & Nyquist, S. (2005). The value relevance of environmental performance. *European Accounting Review*, 14(1), 41–61. <https://doi.org/10.1080/0963818042000279722>
- Horváthová, E. (2012). The impact of environmental performance on firm performance: Short-term costs and long-term benefits? In *Ecological Economics* (Vol. 84, pp. 91–97). <https://doi.org/10.1016/j.ecolecon.2012.10.001>

- Kabir, R., & Thai, H. M. (2017). Does corporate governance shape the relationship between corporate social responsibility and financial performance? *Pacific Accounting Review*, 29(2), 227–258. <https://doi.org/10.1108/par-10-2016-0091>
- Kabir Tahir Hamid and Mohammed Ibrahim. (2020). The Moderating effect of corporate governance on the relationship between corporate social responsibility and financial performance of listed non-financial services companies in Nigeria. *International Journal of Accounting & Finance*, 9(1), 12–26.
- Khanna, M., & Damon, L. A. (1999). EPA's voluntary 33/50 program: Impact on toxic releases and economic performance of firms. *Journal of Environmental Economics and Management*, 37(1), 1–25. <https://doi.org/10.1006/jeem.1998.1057>
- Kim Lim Tan et al. (2020). Doing good does you good_ The financial impact of individual dimensions_ A Malaysian context. *Social Responsibility Journal*, 146.
- Li, S., & Tsai, S. (2018). Efficiency of apparel retail at the firm level-- an evaluation using data envelopment analysis (DEA). *Journal of Textile Engineering & Fashion Technology*, 4(2). <https://doi.org/10.15406/jteft.2018.04.00130>
- Liu, Z. (2020). Unraveling the complex relationship between environmental and financial performance_ A multilevel longitudinal analysis. *International Journal of Production Economics*.
- Nguyen, T. H. H., Elmagrhi, M. H., Ntim, C. G., & Wu, Y. (2021). Environmental performance, sustainability, governance and financial performance: Evidence from heavily polluting industries in China. *Business Strategy and the Environment*, 30(5), 2313–2331. <https://doi.org/10.1002/bse.2748>
- Nor, N. M., Bahari, N. A. S., Adnan, N. A., Kamal, S. M. Q. A. S., & Ali, I. M. (2016). The Effects of Environmental Disclosure on Financial Performance in Malaysia. In *Procedia Economics and Finance* (Vol. 35, pp. 117–126). [https://doi.org/10.1016/s2212-5671\(16\)00016-2](https://doi.org/10.1016/s2212-5671(16)00016-2)
- Ojeka Stephen. A, Iyoha Francis. O, & Osakwe Chioma. (2017). Does the Reformed code of Corporate Governance 2011 Enhance market performance of firms in Nigeria. *International Journal of Economics Perspectives*, 11(1), 155–164.
- Oliver F. Williams. (2014). The United Nations Global Compact_ What Did it Promised. *Journal of Business Ethics*, 3(122), 241–251.
- Oluseyi-Sowunmi, S. O., Iyoha, F. O., & Owolabi, A. A. (2020). Corporate environmental reputation management and financial performance of environmentally sensitive companies in Nigeria. *Cogent Social Sciences*, 6(1). <https://doi.org/10.1080/23311886.2020.1813368>
- Petrus Daniël Erasmus, B., & de Villiers Stellenbosch, J. (2008). *EVALUATING VALUE BASED FINANCIAL PERFORMANCE MEASURES*. <http://scholar.sun.ac.za>
- Rohani, A., Jabbour, M. and Abdel-Kader, M. (2021). Carbon performance, carbon disclosure, and economic performance: the mediating role of carbon (media) legitimacy in the UK. *International Journal of Accounting and Economics*.
- Smith, M., Yahya, K., & Marzuki Amiruddin, A. (2007). Environmental disclosure and performance reporting in Malaysia. *Asian Review of Accounting*, 15(2), 185–199. <https://doi.org/10.1108/13217340710823387>
- Song Malin, An Qingxian, Zhang Wei, Wang Zeya, & Wu Jie. (2012). Environmental efficiency evaluation based on data envelopment analysis: A review. *Renewal and Sustainable Energy Reviews*, 16, 4465–4469.
- Tan, K. L., Ho, J. M., Pidani, R., & Goveravaram, A. das. (2021). Doing good does you good? The financial impact of individual CSR dimensions: A Malaysian context. *Social Responsibility Journal*, August. <https://doi.org/10.1108/SRJ-04-2020-0146>

- Trumpp, C., & Guenther, T. (2017). Too Little or too much? Exploring U-shaped Relationships between Corporate Environmental Performance and Corporate Financial Performance. *Business Strategy and the Environment*, 26(1), 49–68. <https://doi.org/10.1002/bse.1900>
- Tyteca, D. (1996). On the measurement of the environmental performance of firms - A literature review and a productive efficiency perspective. *Journal of Environmental Management*, 46(3), 281–308. <https://doi.org/10.1006/jema.1996.0022>
- Tyteca Daniel. (1997). Linear Programming Models for the Measurement of Environmental Performance of Firms_ Concepts and Empirical Results. *Journal of Productivity Analysis*, 8, 183–197.
- Tzouvanas, P., Kizys Renatas., Chatziantoniou Ioannis, & Sagitova Roza. (2020). Env and FP in the European Manufacturing Sector_An analysis of extreme tail dependency. *The Bretish Accounting Review*, 52, 100863.
- Victor Chiedu Oba, Musa Inuwa Fodio, B. S. (2012). The Value Relevance of Environmental Responsibility Information Disclosure in Nigeria. *Acta Universitatis Danubius: Oeconomica.*, 8(6), 99–112. <http://web.b.ebscohost.com/ehost/detail/detail?vid=105&sid=cab002ee-11b2-4e91-96d1-c794a04685d8@sessionmgr106&hid=102&bdata=JnNpdGU9ZW9vc3QtbGl2ZQ==#AN=88361949&db=buh>
- Vlontzos George, Niavis Spyros, & Manos Basil. (2014). A DEA approach for estimating the agricultural energy and environmental efficiency of EU countries. *Renewable and Sustainable Energy Reviews*, 40, 91–96.
- Zaim, O. (2004). Measuring environmental performance of state manufacturing through changes in pollution intensities: A DEA framework. *Ecological Economics*, 48(1), 37–47. <https://doi.org/10.1016/j.ecolecon.2003.08.003>
- Zhou, P., Ang, B. W., & Poh, K. L. (2008). Measuring environmental performance under different environmental DEA technologies. *Energy Economics*, 30(1), 1–14. <https://doi.org/10.1016/j.eneco.2006.05.001>
- Zhou, P., Poh, K. L., & Ang, B. W. (2016). Data envelopment analysis for measuring environmental performance. In *International Series in Operations Research and Management Science* (Vol. 239, pp. 31–49). Springer New York LLC. https://doi.org/10.1007/978-1-4899-7705-2_2

Value Relevance Studies in Accounting: A Critical Review

Nabila Kabir & Umaru Musa Yar'adua

Umaru Musa Yar'adua University, Nigeria

Corresponding email: kabirnabila@gmail.com

Abstract

Value relevance studies empirically examines the extends of association existing between accounting information and share price as it investigates the usefulness of accounting information to various stakeholders. The objective of this paper is to provide a comprehensive review of value relevance studies in accounting. The study also grouped the reviewed value relevance studies based on the three classifications of value relevance researches; incremental, marginal and relative association studies. The study found most studies adopting price model and/or return model. The study further recommends the use of price model or a combination of the two models for better valuation.

Keywords: book value of equity; earnings per share; price model and return model; value relevance.

Introduction

Provision of highly qualitative financial information has been the ultimate aim of International Accounting Standard Board (IASB) and Financial Accounting Standard Board (FASB). Of course, high quality financial information is not only necessary for users of financial statement but for a vibrant economy and for a strong capital market as well asserted by (Svenssor & Larsson, 2009). Financial reporting is about providing report or statement revealing the financial condition of an entity. It is only when an entity revealed its financial condition that investors or users will be able to make sound economic decision. The preparer of such report are expected to out sketch the true financial position of an entity. Although there is nothing as ideal condition in real life, as such there is no such thing as “perfect or true and fair” financial statements. Instead, accountants should try to prepare statements that are most useful to users. However, Belkaoui (2004); Dandago and Hassan (2013) further identified three items to be considered in preparing financial report. The users, information needed by the users and the preparers. In the opinion of Konstantinos (2011) users of accounting information are categorized into two. External users comprise of users that are outside the organization as; investors, government, lawyers, standard setters, external auditors and general public. Internal users are those within the organization for example; managers, directors, employees to mention but a few. The investor is assumed to be rational and risk averse where he makes investing decision based on market response. Even though, Svenssor and Larsson (2009) opined that whenever the information need of investors are met by then, it is considered that the need of other users of financial statement will also be met. This is because investors are among the most important users of financial statement.

Value relevance as a field of study has been growing rapidly and gaining attention by many scholars. Value relevance studies can be traced back from late 1960s (Hellström, 2005 & Titilayo, 2011). Although (Titilayo, 2011) opined that during this period, investigations were based on stock market and accounting information with less emphases about firm value. For example, Ball and Brown study (1969). Book value of equity was later instituted in the middle of 1990s where several authors used valuation frame work so as to express share price in relation to book value of equity and earning inclusive (Kargin, 2013; Kousenidis, Ladas, &

Negakis, 2010; Oscar, 2014 & Pathirawasam, 2013) to mention but a few. In a nut shell, value relevance is all about explaining the relationship existing between accounting information and share price. Furthermore, with the issue of 2008 global financial scandal, many investors have lost confidence towards investment as viewed by Titilayo (2011). More also, with the issue of the global financial crises that led big companies like the Enron, WorldCom, Tyco etc to become a history as a result of loopholes contained in the financial reports, window dressing, creative accounting, earning smoothing and the likes. Therefore, this paper examines a comprehensive review of value relevance studies in accounting and also the model(s) adopted by previous studies.

The Concept of Value Relevance

The concept of value relevance has been defined in several ways by different scholars. For example Mohammed and Lode (2015) define value relevance as the ability of accounting numbers to capture the information underlying the share price where Vijitha and Nimalathan (2014) went further by positing value relevance as having statistical relationship between financial information with share return. Value relevance was also viewed as an extent of association between accounting information and market value (Titilayo, 2011). In another vein, Barth and Beaver (2000) value relevance refers to association existing between accounting information and securities market value. Therefore, this study viewed value relevance as the statistical relationship existing between accounting information and share price.

Accounting Information

Accounting information as viewed by Scott (2012) to be a commodity, which is expected to provide ultimate satisfaction to the users (both the internal and the external). There are a number of factors to be considered before accounting information is recognized as a qualitative one among which are relevance, reliable, timeliness, accuracy, comparability, verifiability (Kargin, 2013; Palea, 2013). Several authors consider relevance and reliability as the most valuable ingredient to be found in accounting information (Kargin, 2013; Palea, 2013; Khanagha, 2011; Nayeri & Bidari, 2012; Scott, 2012). Additionally, Nayeri and Bidari (2012) further assert that these two qualities (relevance and reliability) one must not be used at the expenses of the other as doing this will make the accounting information to less useful to users. Relevance and reliable are items that cannot be quantifiable as no any criteria that will statistically explain them which give room for value relevance as to incorporate the two (Uwuigbe, Uwuigbe, Jafaru, Igbinoba, & Oladipo, 2016).

Market Price

Market price as defined by Nurijiah (2015) as the price of a single share of a company's stock where the price keeps fluctuating up and down causing an investor to make gain or lost. Market price sometimes refers to as Stock prices changes due to the economics of market forces, and the supply and demand for the stock.

Classification of Value Relevance Research

Researches on value relevance are of different categories classified by Holthausen and Watts (2001). Mohammed and Lode (2015); Palea (2013) asserted that value relevance studies are categorized into three:

Relative association studies: this refers to the studies of value relevance that describe the decrease or increase on the association of accounting numbers on share price. It involves making comparison between two standard sets (GAAP and IFRS). Among the studies are; Kargin (2013) examined listed firms in Turkey, Peng and Chen (2014) investigated on listed companies in Taiwan, in Sri Lanka (Ijam and Jahfer, 2018), in United Arab Emirate

(Khanangha, 2011) in Kuwait (Alfaraih, 2009) in Saudi (Alnodel, 2018) in Nigeria (Okafor, Ogbuehi & Anene, 2017).

Incremental association studies: this is a type of value relevance studies that investigate whether accounting information assists in determining the market return. An accounting number is typically deemed to be value-relevant if its estimated regression coefficient is significantly different from zero. Examples of such studies are; Andriantomo and Yudianti (2013) in Indonesia, Pakistan (Shehzad & Ismail, 2014); Hellstrom (2005) compared value relevance of Czech Republic and that of Sweden listed firm to mention but a few.

Marginal association studies: this is the third category of studies in value relevance that examined the association of accounting number on information accessory to investors and explores the relationship arising from any value change there from. This category deals with event studies aimed at analyzing stock price behavior on announcement dates for which the time window may be as short as a day or two. The studies are not concerned with how fast the market reacts to new information, as their horizon ranges from three or four months to several years (Mohammed and Lode, 2015; Beisland, 2009).

Prior Empirical Studies on Value Relevance of Accounting Information

Several streams of studies have explored on the value relevance of accounting information among which are; Bilal and Abdenacer (2016) used a sample of 193 non-financial UK firms to investigate the value relevance of intangible on market price. They used price model and they found intangible items to be value relevant in explaining market value as this is not the case with Goodwill, amortization and impairment charges. Andriantomo and Yudianti (2013) went further to examine the value relevance of accounting information at Indonesia, for a period of 2000-2009. They found that both earnings and book value are significant in explaining the share price but that of book value of equity are more relevant in explaining the share price than the earnings.

The value relevance in the banking sector has not been ignored. Shehzad and Ismail (2014) investigated the value relevance of accounting information and its impact on stock prices within the banking sector of Pakistan (case study of Karachi stock exchange). The authors used a sample of 19 commercial banks over a period of 2008 to 2012. They make use of pooled regression analysis to arrive at their findings. They found that accounting information is value relevant as it assist users in making decision as it help them to evaluate the past, present and future. This means that, they found earning per share to be more relevant than book value. In the same banking sector of Dubai (UAE), Trabelsi and Trabelsi (2014) examine the value relevance of IFRS in the UAE Banking Industry evidence from Dubai Financial Market found that earnings and book value of equity to have decline in the post-IFRS period.

Moreover, studies on comparison between two countries about the value relevance of accounting information have not been neglected. As Hellstrom (2005) compared value relevance of Czech Republic and that of Sweden. The author found that there is low value relevance of accounting information in Czech than in Sweden. He also found that there is an increase in value relevance of accounting information in Czech Republic. In line with this is, Camodeca et al (2014) where the author compared value relevance of accounting information between Italian and UK stock market. They employed a sample of 100 companies in each of the two countries for a period of 3 years (2011-2013). The authors found Italy to be more value relevant than UK where they pointed out that Italy's most relevant accounting data is that of earnings where as in UK it is that of cash flows.

Uwuigbe, Uwuigbe, Jafaru, Igbinoba, and Oladipo (2016) explored on the value relevance of financial statements and share price using listed banks in Nigeria as case study coming up with a sample of 15 banks after using purposive sampling method spanning a period of 2010-2014. They found significant positive relationship between EPS and LDSP after using

price model. This, however, indicates that earnings per share have a stronger ability to explain the variation in share prices relative to book value per share while return on net worth has no relationship with share price. More also, Siyanbola, Ogbole, and Masoyi (2015) investigated the banking sector in Nigeria on the effect of price model on value relevance of accounting information among 8 listed banks over a period of eight years (2005 -2012). They found book value of equity and dividends to be value relevant whereas earnings were found to be irrelevant over the period of study.

However, this is in contrast with Kousenidis, Ladas and Negakis (2010), where they investigated the value relevance of accounting information in the pre- and post- IFRS accounting periods of 154 firms listed in Athens stock exchange over a period of four years (2003-2006). They found that with IFRS adoption the information of book value of equity has reduced where they conclude that the reduction in the book value might be due to the application of fair value accounting which has been brought about by IFRS. So also,

Chebaane and Othman (2014) explored on the impact of mandatory adoption of IFRS on value relevance of earnings and equity within the emerging market of Africa and Asia regions. The study used all listed firm over a period of 1998-2012 from seven countries: UAE, Bahrain, Jordan, Kuwait, Qatar, Turkey, and South Africa reaching a total sample of 10,838 firms that adopt mandatory adoption of IFRS. They found earnings and book value of equity as value relevance and earnings are more value relevant in the post-adoption period higher than the pre-adoption period.

In Turkey, Aksu, Cetin and Mugan (2016) examined the effect of accounting earnings and book value of equity on share price, data were generated from Bursar Istanbul over a period of 1992- 2006. They further investigated the effect accounting reforms (mandatory uniform chart of account, the mandatory use of general price level in accounting in high inflation period, voluntary and mandatory IFRS adoption periods and corporate governance compliance reporting). They found that net income and book value of equity are highly value relevant during the full period. While the Uniform Accounting System of 1994 has not increased the value relevance of accounting numbers, they also discovered that the value relevance of accounting numbers has increased slightly during the reform period.

Accounting Valuation Models in Value Relevance Studies

Accounting valuation as viewed by Callen (2013) refers to the valuation of market price (firm's equity) in relation to accounting numbers for example, earnings, book value of equity, cash flow, dividends and net worth.

The Feltham and Ohlson Model

The Feltham and Ohlson model which is also referred to as price model. This model is built based on theory of valuation on the Residual Income Valuation Model (RIVM) as asserted by Ota (2003). The price model is based on three assumptions.

The first assumption states that the expected value of expected earnings determine the market value of equity.

The second assumption states that accounting information and dividends conform fully to the clean surplus relation, which implies that dividends reduce the book value of equity without affecting current earnings. Ohlson's clean surplus theory shows that the market value of the firm can be expressed in terms of income statement and balance sheet items (Khanangha 2011; Kargin 2013; Alnodel 2018; Chebaane & Othman, 2014).

The third assumption states that a linear model depicts the stochastic time-series behaviour of abnormal returns. (Siyanbola, Ogbole, & Masoyi 2015; Ota, 2003; Okafor, Ogbuehi & Anene, 2017).

Going by the aforementioned assumptions, it can be deduced that the Price model regresses stock prices on book value of equity and earnings as

$$SP_{it} = \beta_{0it} + \beta_1 BVPS_{it} + \beta_2 EPS_{it} + \mu_{it}$$

Where:

SP is the stock price of company i at time t

BVPS refers to book value of equity per share of company i at time t EPS refers to earnings per share of company i at time t

Under the price model, there also exist the problems of variable omission that is untapped in the future earnings which understate R^2 . This is referred to as scale effect where there is failure in controlling the scale of variables (Ota, 2003).

The Eastern and Harris Model

The Eastern and Harris model sometimes called return model, measures the mean annual information content of returns of the explanatory variables for the return of the dependent variable. It describes the relationship between stock returns and accounting earnings. Stock returns are dependent on earning levels and change in earnings, where both variables are deflated by the stock price at the beginning of last year's annual report announcement month (Kousenidis, Ladas & Negakis, 2010; Ota, 2003; Alnodel, 2018). The return model regresses stock returns on earnings and changes in earnings as below;

$$SR_{it} = \beta_{0it} + \beta_1 E_{it} + \beta_2 \Delta E_{it} + \mu_{it}$$

Where:

SR is the stock return E is the earnings

ΔE is the change in earnings

However, this model is prone to have error in variable as a result of omission of variables which in turn underestimate R^2 . The under estimation of return on earning relationship leads to accounting recognition lag.

Conclusion

This study provides a comprehensive critical review on value relevance studies in accounting which focused primarily on evaluating the explored relationship between earnings, book value of equity, dividends, cash flow and net worth on market price. The study also evaluates the impact of accounting reforms (IFRS) on the value relevance of accounting information evidenced from both developing and developed countries like UAE, Saudi Arabia, Turkey, Sri-lanka, Nigeria, Sweden, UK, Czech Republic and others. Most authors that explore on value relevance studies adopt either the price model and/or return model without knowing the limitation of each model. One of the models deals with valuation while the other deals with the issue of discounting and a few of the authors know the difference between these models even though both models are based on RIM.

The two widely used models; price models regress earnings on share price and return model regresses return on earnings. Price and return model have problem of scale effect and accounting recognition lag with transitory earnings respectively. These problems can be minimized through control of variable, expansion of return and earnings relationship over a longer period. This study further recommends the use of both models in value relevance studies or the use of price model over return model as the untapped component is less as compared with that of return model.

References

Aksu, M. Cetin, T. A. & Mugan, S. C. (2016). Value Relevance of Accounting Data in an Emerging Market: Did Accounting Reforms Make a Difference? *Accounting and corporate reporting- today and tomorrow*

- Alfaraih, M. (2009). compliance with international financial reporting standards (IFRS) and value relevance of accounting information from emerging market: evidence from Kuwait Quesland University Doctorate thesis
- Andriantoma, A. & Yudianti, F. (2013). The Value Relevance of Accounting Information at Indonesia Stock Exchange *International Conference on Business, Economics, and Accounting*, Bangkok - Thailand
- Barth, M. E., Beaver, W. H. & Landsman, R. (2000). The Relevance of Value Relevance Research. *Journal of Accounting & Economics Conference*, (650), 41.
- Beisland, L. A. (2009). A Review of the Value Relevance Literature, *The Open Business Journal*, 2(1), 7–27.
- Brown, P., & Ball, R. (1968). An Empirical Evaluation of Accounting Income Numbers, *Journal of Accounting Res*, 6(2), 159–178.
- Callen, J. L. (2013). A Selection Critical Review of Financial Accounting Research, *Critical Perspective on Accounting*
- Chebaane, H. & Othman, S. (2014). The impact of IFRS adoption on value relevance of earnings and book value of equity: the case of emerging markets in African and Asian regions, *Procedia - Social and Behavioral Sciences* 145 70 – 80
- Dandago, K., I. & Hassan, N. B. (2013). Decision Usefulness Approach To Financial Reporting: A Case For Malaysian Inland Revenue Board *Asian Economic and Financial Review*, 3(6), 772-784
- Ernest, O. & Oscar, M. C. (2014). The Comparative Study Of Value Relevance Of Financial Information In The Nigeria Banking And Petroleum Sectors *Journal of Business Studies Quarterly*, 6,(1) ISSN 2152-1034
- Fama, E. F. (1969). Efficient Capital Markets: A Review of Theory and Empirical Work *The Journal of Finance*, 25 (2), Papers and Proceedings retrieved from <http://www.jstor.org/stable/2325486>
- Hellström, K. (2005). The Value Relevance of Financial Accounting Information in a Transitional Economy: The Case of the Czech Republic Katerina Hellström Centre for Financial Analysis in Accounting Stockholm School of Economics Box 6501 SSE / EFI Working Paper Series in Busi.
- Jabar, D. S. (2012). The influence of institutional factors on the value relevance of accounting information: evidence from Jordan. A Ph.d thesis university utara Malaysia
- Kargin, S. (2013). The Impact of IFRS on the Value Relevance of Accounting Information: Evidence from Turkish Firms. *International Journal of Economics and Finance*, 5, 71–80. retrieved from <http://doi.org/10.5539/ijef.v5n4p71>
- Khanagha, J. B. (2011). Value Relevance of Accounting Information in the United Arab Emirates *International Journal of Economics and Financial Issues* 1 (2), 33-45 ISSN: 2146-4138
- Kothari, S. P. (2001). Capital markets research in accounting *Journal of Accounting and Economics* 31
- Konstantinos, P. P. & Anthanasios, B. P. (2011). The Value Relevance of Accounting Information under Greek and International Financial Reporting Standards: The Influence of Firm – Specific Characteristics. *Finance and Economics*, 76(76).
- Kousenidis, D. V., Ladas, A. C., & Negakis, C. I. (2010). Value relevance of accounting information in the Pre- and Post-IFRS accounting periods. *European Research Studies Journal*, 13(1), 145–154.
- Mohammed, Y. A. & Lode, A. N. (2015). The Value Relevance of Accounting Disclosures among Nigerian Financial Institutions after the IFRS Adoption. *Mediterranean Journal*

- of *Social Sciences*, 6(1), 409–418. retrieved from <http://doi.org/10.5901/mjss.2015.v6n1p409>
- Mohammed, Y. A. & Lode, N. A. (2012). Efforts and challenges in adopting International Financial Reporting Standards (IFRS) in Nigeria. *Journal of Business Management and Accounting*, 2(2), 81–100.
- Nayeri, M. D. & Bidari, M. A. (2012). Factors Affecting the Value Relevance of Accounting Information, 2(2), 76–84.
- Nijam, M. H. & Jahfer, A. (2018). IFRS Adoption and Value Relevance of Accounting Information: Evidence From A Developing Country, *Global business review* DOI: 10.1177/0972150918794571 retrieved from <http://journals.sagepub.com/home/gbr>
- Ota, K., (2003). The Impact Of Price And Return Models On Value Relevance Studies: A Review Of Thoery And Evidences *Accounting Journal Research* 16 (1)
- Pathirawasam, C. (2013). The Value Relevance of Earnings and Book Value: The Importance of Ownership Concentration and Firm Size. *Journal of Competitiveness*, 5(2), 98–107. retrieved from <http://doi.org/10.7441/joc.2013.02.07>
- Palea V. (2013). IAS/IFRS and financial reporting quality: Lessons from the European experience China, *Journal of accounting research*
- Peng, H. & Chen, M. (2014). A Comparison of the Value Relevance of IFRS with Taiwanese GAAP Accounting Information Ragab, A. & Omran, M. (2012). Accounting Information, Value Relevance, and Investors' Behavior in the Egyptian Equity Market Aiman A. Ragab, 1–29.
- Sekaran, U. & Bougie, R. (2013). *Research methods for business*. A skill building approach sixth edition
- Scott, W.R. (2009). *Financial accounting theory*. 5th Edition, Toronto: Toronto (SWR): Pearson Prentice Hall International Inc
- Shehzad, A. & Ismail, A. (2014). Value relevance of accounting information and its impact on stock prices: a case study of Karachi stock exchange *Journal of economic information*, 3(1) Pg. 40-48
- Svensson, E. & Larsson, A. (2009). Value Relevance of Accounting Information – A Swedish Perspective *Analysis*.
- Titilayo, D. (2011). Value- Relevance of Accounting Information in the Nigerian Stock Market, 1(2), 220, A PhD thesis
- Trabelsi, N. S. & Trabelsi, M. (2014). The Value Relevance of IFRS in the UAE Banking Industry: Empirical Evidence from Dubai Financial Market , 2008-2013, 4(4), 60–71. retrieved from <http://doi.org/10.6007/IJARAFMS/v4-i4/1241>
- Uwuigbe, R. O., Uwuigbe, U., Jafaru, J., Igbinoba, E. E. & Oladipo, O. A. (2016). Value relevance of financial statements and share price: a study of listed banks in Nigeria, *Banks and Bank Systems*, 11 (4) United Nation (2018). World Economic Situation and Prospects
- Vijitha, P. & Nimalathan, B. (2014). Value Relevance of Accounting Information and Share Price: A Study of Listed Manufacturing Companies in Sri Lanka. *Merit Research Journal of Business and Management*, 2(1), 1–6.

The Effect of Debt Maturity on the Relationship between Corporate Governance, Corporate Risk-Taking and Investment Efficiency: Evidence from Thailand

Panern Intara & Abdul Hadi bin Zulkafli

School of Management, Universiti Sains Malaysia, Malaysia

Corresponding email: panern.i@student.usm.my

Abstract

The purpose of this study is to clarify a conceptual insight into the corporate governance practice, corporate risk-taking, and investment efficiency, and to propose how the overall CG practice of Thai firms is measured. More importantly, it proposes a conceptual framework, which demonstrates how CG practice and corporate risk-taking might influence the company's ability to utilize resources efficiently. A review of the specialized journal and the SETSMART database was used to address the research gap and identify the current situation regarding problem statements. The CG principles of the OECD and SET CG code are integrated to create a method to measure CG practice that is appropriate to the current situation for Thai firms. The scores from all five dimensions of CG practice assessment, which are calculated with many different criteria, are used to measure the level of overall CG practice of Thai firms by the weighted average approach of five multidimensional measurements. The degree of corporate risk-taking is assessed using the three-year rolling window standard deviation of ROA. Finally, a conceptual framework is provided to test the impact of CG practice and corporate risk-taking on investment efficiency. This study is fruitful for listed companies and policymakers. Listed companies may use the findings as a guideline for adjusting financial behavior, particularly investing behavior and the findings are beneficial to design corporate governance policies. Policymakers may adjust criteria to measure CG practice or encourage listed companies to apply the concept of corporate governance more widely. This paper avoids narrowly measuring CG practice, a single dimension of corporate governance mechanism. Many criteria under the five dimensions of CG practice were carefully designed to effectively measure the comprehensive and reflecting overall level of CG practice. This study creates a novelty in measuring the CG mechanism in Thailand.

Keywords: corporate governance; corporate risk-taking; debt maturity; investment efficiency.

Introduction

One of the essential functions of financial managers in achieving the goals of maximizing shareholders' wealth is an investment decision. Although investment decision frequently results in a large amount of cash outflow and entails cash flow uncertainty, which impacts the company's risks and returns in the long run, investment activity is the key driver of cash flow growth and firm expansion and is one of the most crucial determinants of firm value (Ohlson, 1995; Ehie & Olibe, 2010). Under the neoclassical theory, firms will invest until their marginal cost equals the marginal benefit (Gomariz & Ballesta, 2014). However, under the imperfect market, firms may make an investment that differs from its optimal level of investment, either as an overinvestment or underinvestment. Inappropriate levels of investment, whether overinvestment or underinvestment, all negatively impact the firm in numerous dimensions. For example, due to overinvestment, the firm loses capital resources for executing all of a non-value added project, and the firm may lose profit opportunities due to neglect of investment in value-enhancing projects. Corporate governance has gotten attention and evolved into a

significant mechanism. CG is a supervisory mechanism that protects investors' interests (La Porta et al., 2000; Utama et al., 2017), as well as control the behavior and decisions of management so that the interest of the management is consistent with the benefits of investors (Jacoby et al., 2019). A firm with good CG can build confidence, increase demand for securities, and increase liquidity and price levels which is beneficial to the company's fundraising (The Stock Exchange of Thailand, 2017). As well as OECD (2014) indicated that excellent CG improves a company's image, lowers risks, and raises investor confidence. In addition, good CG mechanisms can incentivize and direct managers to make appropriate investment decisions and avoid overinvestment just to increase investor confidence, as well as CG practices can reduce or eliminate agency problems (Core et al., 2006). CG is related to investment efficiency in various aspects, such as the reduction of interests' conflicts or agency conflicts, which can contribute to less financing costs and may contribute to mitigating underinvestment problem (Chung & Zhang, 2011), making the control system more stringent, resulting in more effective decision-making by executives, and reduce the opportunistic behaviors of the management and potential agency conflicts (Ullah et al., 2020; Chen & Xie, 2015). Moreover, firms with transparent environmental information may easily and effectively monitor management operations, resulting in high investment efficiency (Chen et al., 2011; Cheng et al., 2013).

The investment's risk factor is one of the most important aspects that influence the investment decision. This risk exists because it is uncertain that the cost of the investment will be recovered, and a profit will be made. The level of a firm's business risk is influenced by factors such as the level of demand for the products or services, the level of competition, the cost or margin of goods. Therefore, firms with a high level of business risk will have relatively high volatility in EBIT. Economic uncertainties have given rise to the attention of corporate risk-taking, so corporate risk-taking often plays an important role in a company's survival. The higher corporate risk-taking indicates that managers prefer risky but value-enhancing investments, which will promote the progress of production technology (Kose John, 2008), as well as Andries et al., (2020), found a positive and significant between the corporate risk-taking and both firm total assets and sales growth, indicating that higher in corporate risk-taking increased firm-level growth. In addition, a higher level of risk-taking creates economic consequences for the firm on issues such as higher capital allocation efficiency, high growth rate, and higher value of the firm (Kreiser et al., 2002).

The main economic consequence that the firm receives if there is a high level of risk-taking is higher efficiency in capital allocation (Kreiser et al., 2002), therefore, as most firms have limited capital to make investment decisions, more effective capital allocation may contribute to the development of investment efficiency. However, personal great reward on investment may be a key incentive for managers to increase risk-taking by undertaking risky projects. In contrast, managers may aim to protect job position and reputation, thus leading to avoidance of investing in a risky investment project, even if it is a firm value-enhancing project unless they are forced by well-diversified and risk-loving large shareholders, leading to a reduction in the level of risk-taking of the firms. The above situations all lead to overinvestment and underinvestment problems, also known as investment inefficiency. The question is whether the level of corporate risk-taking affects the investment decisions, a higher level of corporate risk-taking may lead to the identification and execution of superior investment projects and thereby to optimal investment decisions. Managers may be more conservative and more risk-averse. This kind of internal factor may curb the overinvestment and lead to optimal investment decisions. Managers may be less likely to exhibit overconfidence and engage in aggressive decision-making, lower managerial opportunism leading to fewer agency problems also improves the quality of decisions and decreases underinvestment problems. On the other hand,

a higher level of corporate risk-taking may contribute to managers having higher opportunism, higher agency problems and decreasing investment efficiency.

Firms with risky debt may face a debt overhang problem in the presence of shareholders –creditors conflicts. High-leveraged firms may be unable to invest in new investment projects, even if the projects have a positive NPV, resulting in an underinvestment problem. Debt maturity is an important approach for monitoring managerial behavior. Lowering the maturity of debt could also improve investment efficiency by reducing both overinvestment and underinvestment problems (Gomariz & Ballesta, 2014). As well as Park and Bae (2011) revealed that debt maturity plays a role in the correction for capital market imperfections. While, Childs et al. (2005) noted that even though short-term debt can alleviate debt overhang problems, this benefit must be balanced against the cost of liquidity risk, incorporate with short-term debt allows firms to make frequent repricing of contracts, thereby, reducing both under-over investment problems. Gomariz and Ballesta (2014) concluded that overinvestment is the primary concern of creditors since it is through overinvestment that managers expropriate creditors and minority shareholders, and this inefficiency can be reduced with shorter maturities, like Johnson (2003), which suggests that short-term debt can alleviate underinvestment. Moreover, Gomariz and Ballesta (2014) and Jeon and Oh (2017) concluded that both debt maturity and investment efficiency were significantly positive. This means that the shorter the debt maturity, the higher the investment efficiency. The preceding discussion raises an empirical question what is the effectiveness of CG on investment efficiency when the level of debt is high. The level of debt may have a positive impact because it pushes the management to be more creative, innovative, and efficient. Moreover, with a high proportion of debt, management has a strong motivation to survive, thereby unlikely to behave opportunistically. Furthermore, debt repayment obligations and default risk will all increase as debt financing increases. Managers experience both higher benefits and risks when expanding the CG boundary in this situation. Managers will be motivated to enhance their investment efficiency because of the greater risks (Lei & Chen, 2019). Further, the proceeding discussion on the impact of debt maturity raises another empirical question as to whether debt maturity will affect the association between corporate risk-taking and investment efficiency. The financial structure with a high proportion of short-term debt may contribute to a stronger association between corporate risk-taking and investment efficiency. As high levels of short-term debt represent firms' short-term financial obligations, as well as the higher level of corporate risk-taking, may contribute to changes in investment managers' behavior.

Listed companies in the stock exchange of Thailand (SET) continue to attract the attention of investors, finding that in the first half of 2021, listed companies in the SET had an initial public offering (IPO) as No. 1 in ASEAN and also the most liquid stock exchange among ASEAN stock exchanges (Pititawatchai, 2021) and that foreign investors account for approximately 37% of total investors in the SET (The Stock Exchange of Thailand, 2021). This data demonstrates the attractiveness of investment opportunities for both Thai and foreign investors. Thailand's proportion of total investment to GDP which has remained low for several years (Monetary Policy Department, Bank of Thailand, 2020), an increase in the savings-investment gap (Bank of Thailand, 2020), a change in corporate investment decision-making behavior, and rising in the net saving to GDP ratio can very well reflect the problem of inefficient investment of the Thai private sector. In addition, although Thai firms have improved the level of CG practice through the higher scores reported in the CG report, the problematic issue, and the room for improvement in CG practice of Thai firms still exist, namely the board responsibilities dimension, which has a lower score than the other dimensions of CG practice and below the overall average (Thai Institute of Director Association, 2021).

A review of previous studies found that several studies have examined the direct relationship between CG and investment efficiency, as well as the moderating effect of industry competition, which is an external factor that may affect this relationship, and an internal factor such as debt boundary, as a moderating variable. Along with the previous research's recommendations, there are other important interacting variables to be considered, such as environmental uncertainty, investor protection, and political connection. One of them should be an interacting variable that is consistent with the context of Thai firms is debt maturity, which can be calculated using a different proxy. It is obvious that short-term debt is an obligation that firms must meet in a short period of time, and it comes with a variety of benefits and drawbacks. Short-term debt has benefits such as maintaining cash flow and handling emergencies, but it also has drawbacks such as perceptions of weak financial health from investors, negative credit risk assessments, and a burden on day-to-day operations. A high portion of the short-term debt may lead to a disruption in the degree to which CG principles are implemented in firms, as well as a movement in the association between CG and investment efficiency. Furthermore, a high level of short-term debt may cause changes in the magnitude of the association between corporate risk-taking and investment efficiency.

The issue of inefficient investment in the Thai private sector can be clearly seen in the low proportion of total investment to GDP, an increase in savings-investment gap, and a shift in corporate investment decision-making behavior. Therefore, to address this issue, this paper attempts to relate relevant factors, such as CG and corporate risk-taking, that may impact the company's capacity to use resources efficiently. Additionally, this study provides additional tests to determine whether the influence of CG practice and corporate risk-taking on investment efficiency would alter as a result of corporate debt financing, particularly short-term debt. If this conceptual framework is applied in further research, the expected outcomes may be helpful to listed businesses and policymakers, which will contribute to the sustainable growth of the Thai capital market.

Literature Review

Agency Theory

Agency theory is one essential issue in organizational theory since it evolved because of the ownership separation to the corporate executives. This theory describes the relationship between owners and their agents. This is most commonly the case between shareholders as principals and corporate executives as agents (Jensen & Meckling, 1976). The principal-agent problem refers to a relationship formed by mutual agreement between the two parties that results in a difference in priorities and interests between agents and principals. Managers (agents) have more expertise than stockholders (principals), allowing them more opportunities to engage in self-serving behavior (Yang & Morgan, 2011). The agency theory suggests that some dimensions of CG, such as disclosure and transparency, and board responsibilities, can reduce agency costs (Homayoun, 2015) and lead to the efficiency of capital allocation. The agency theory implies that the board plays a role in decreasing the conflict of interest between the management and the shareholders; therefore, the primary purpose of CG may play an essential role in minimizing the agency problem, whereas, in the absence of effective CG, managers tend to overinvest in projects with negative NPV (Naeem & Li, 2019), consuming an excessive amount of privileges, disregarding responsibilities, pursue their own interests at the expense of their shareholders, and promote overinvestment and underinvestment in the firm, resulting in investment inefficiency.

The level of corporate risk-taking is critical in firm decision-making and capital allocation (Cheng, 2021). However, the level of risk-taking is not as high as possible. Maintaining a reasonable balance of risks is more advantageous to the firm's development (Dong, 2014). Principal-agent conflicts are one of the problems that arise in agency theory and

reflect the existence of agency cost. The management's behaviors may be self-serving or opportunistic. The strategic choices could have an impact on both shareholder benefit and firm income instability, which is represented in greater volatility in profit or return. Cheng (2021) indicates that the level of corporate risk-taking is also influenced by the firm's strategic choices, which are related to the capabilities of the management and their incentives to adopt effective strategies.

In the case of the conflict of interest between debtholders and shareholders, shareholders in leveraged firms have incentives to increase asset risk through investing in high-risk projects but positive NPV, as they gain benefit from successful investment while the losses from unsuccessful projects are borne by debtholders (Seta et al., 2020). Moreover, managers may make suboptimal investment if firms financed low debt (Biddle et al., 2009), particularly if the firm has high excess cash flow coupled with a low proportion of debt because firms are more likely to attract external funding at the low cost of capital, as a result, firms are more likely to invest than optimal level as well as consume an excessive amount of privilege. In such cases, good corporate governance practices and a larger proportion of debt in the capital structure may restrict or limit a manager's opportunistic.

Corporate Governance, Corporate Risk-taking and Investment Efficiency

Corporate Governance is a system of governance and control by separating the rights and responsibilities of stakeholders (OECD, 2015), while Srijunpetch, (2012) defined CG as a system of quality management with transparent disclosures to promote efficiency, create competitiveness, and add value to the firm. In summary, CG is a mechanism that defines the structure and processes of relationships between the board of directors, management, and shareholders to create competitiveness, long-term growth, and shareholder value. At the same time, other stakeholders are considered. The fundamental principles of CG are accountability, transparency, fairness, and responsibility. Good CG is important to investors as it helps companies build trust, and also shows a company's direction and firm integrity. As a result, good CG helps promote financial viability by creating a long-term investment opportunity for market participants.

Understanding corporate risk-taking decisions is critical for analyzing organizational dynamism. Corporate risk-taking and risk preferences are vital decision-making factors, with significant consequences for firm performance, firm growth, and survival (Bromiley, 1991). The level of corporate risk-taking can be measured in a variety of ways such as the standard deviation of EBIT (John et al., 2008; Zhang, 2009; Li et al., 2013; Habib & Hasan, 2017), R&D expenditure scaled by assets (Bhuiyan et al., 2021), the annual standard deviation of monthly stock returns (Bargeron et al., 2010), the variation in corporate earnings (EBITDA) divided by total assets or the market-adjusted volatility of firm-level earning approach (Kose John, 2008), and the rolling window standard deviation of ROA (Balutel et al., 2020).

Investment efficiency is the key criterion for determining whether investment activities can generate value for the firms (Jin & Yu, 2017). Overall, it can be inferred that an entity's investment efficiency is only achieved when the firm decides to invest at an appropriate level or without over or underinvestment. In most cases, investment efficiency is measured by the level of over and under investment (Verdi, 2006; Biddle et al. 2009; Li & Wang, 2010; Gomariz & Ballesta, 2014). Overinvestment arises when a project with a negative NPV is undertaken (Biddle et al 2009), while underinvestment occurs when a project with a positive NPV is neglected, it is considered a missed investment in good investment opportunities (Li & Wang, 2010). As a result of missing investment in projects that will enhance competitive advantage, firms are unable to fulfil market demand, resulting in market share losses (Majeed et al., 2018). Finally, firms suffer from investments at a lower level than optimal (Grenadier & Wang, 2005), therefore, underinvestment can be considered as a value-distorting

activity. One of the factors for inefficient investments is information asymmetry (Myers & Majluf, 1984; Verdi, 2006). In the context of information asymmetry, moral hazard and adverse selection may cause a corporate investment to deviate from what it should be (Jensen & Meckling, 1976; Myers & Majluf, 1984).

Methodologies

Initially, the authors conducted a series of online searches on major databases, including Scopus, ISI Web of Science, ScienceDirect, and Emerald. Based on the literature review, all articles were studied and analyzed on important issues such as the statement of problem, motivation of study, theoretical themes, variables measurement, research framework, empirical model, key findings, and suggestions for future study. The analysis of the relevant issues allows us to know the research gap, which has not been studied or is still an opportunity for future studies, which consists of a test of the relationship between CG and investment efficiency in Thailand, with limited studies including a measure of CG practice in Thailand, which covers all dimensions of CG practice. In addition, the current situation regarding CG practice in Thailand, corporate risk-taking, and investment efficiency were investigated and analyzed from the annual reports of listed companies and related agencies such as the Bank of Thailand and the Thai Institute of Director Association (IOD) to identify the statement of problem that needs to be resolved. The conceptual framework was developed in accordance with the research hypothesis based on the review of related theories and empirical studies.

The challenge is variable measurement. Each variable needs to be measured appropriately. Without the effective measurement of variables and unable to reflect the current situation in Thai firms, the hypothesis in this conceptual framework cannot be developed into a good research hypothesis. Thus, the variable measurement for creating a CG index, which is a relatively new study in Thailand, is challenging.

To develop the CG index for this proposed, the approach for constructing the CG index from related studies was reviewed, such as Jordan CG Index by Nsour and Al-Rjoub (2021), Turkey CG Index by Ararat and Yurtoglu (2015), and Korea CG Index by Black et al. (2006a). More importantly, the OECD CG principles and the CG code for Thai listed companies 2017 are the main framework that is employed in determining criteria for the construction of the index. These criteria are based on five categories of OECD CG Principles, which are widely accepted worldwide. The five categories include rights of shareholders, the equitable treatment of shareholders, the role of stakeholders, disclosure and transparency, and the board responsibilities. Furthermore, the criteria in each category based on OECD were adjusted to compliance with the CG Code 2017 by adding and removing some criteria to make them consistent with current issues in Thailand and more relevant for Thai firms. Finally, there are a total of 71 separate criteria organized into five categories.

The Proposed Model

The conceptual framework was developed in accordance with the research hypothesis based on the review of related theories and empirical studies, as shown in Figure 1.

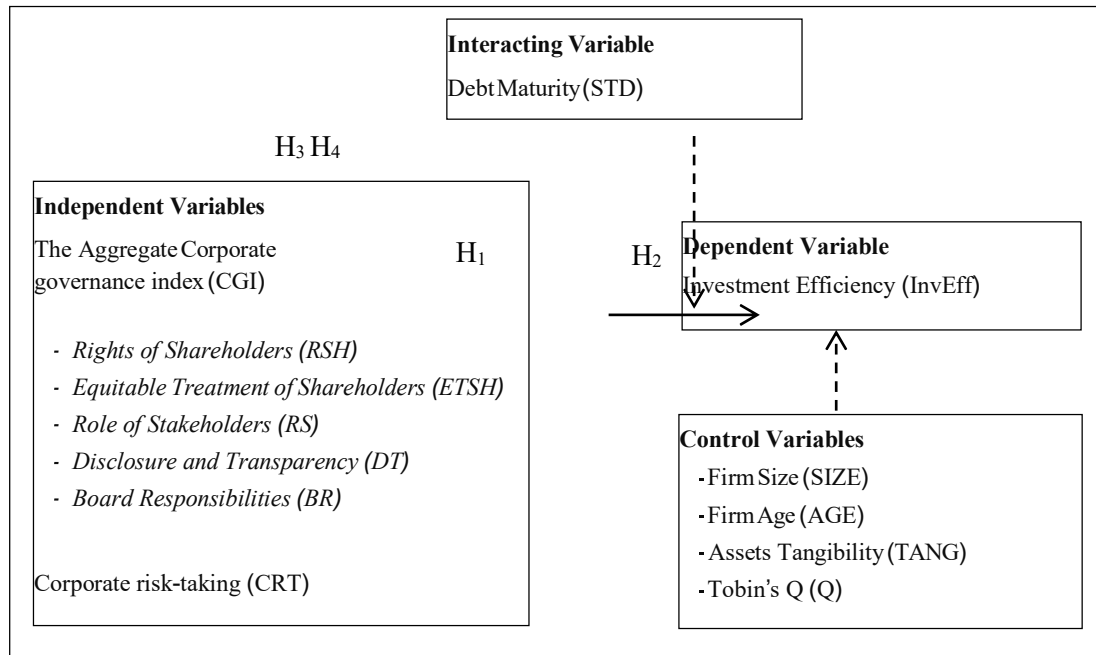


Figure 1. Conceptual Framework

Figure 1 the conceptual framework is drawn from the understanding of the critical factors that may affect the company's ability to utilize resources. Two significant explanatory variables; namely the aggregate CG index (CGI) and corporate risk-taking (CRT) are therefore specified in the framework. Particularly the CG index, which consists of five dimensions, including rights of shareholders, equitable treatment of shareholders, roles of stakeholders, disclosure and transparency, and board responsibilities. These five dimensions need to be considered to create a CG index that can reflect all dimensions of CG practice. This conceptual framework casts new light on CG by developing CG index rather than using a single dimension of CG practice. More importantly, the CG index will be created by combining the Thai CG Code for Listed Companies (CG Code 2017) and the OECD CG Principles, which are widely accepted worldwide. Hence, this conceptual paper presents the theoretical concept and conceptual model through a literature review for exploration of the relationship between CG, corporate risk-taking and investment efficiency, as well as to provides additional tests to determine whether the influence of CG practice and corporate risk-taking on investment efficiency would alter because of debt maturity. The conceptual framework above consists of four research hypothesis, which can explain the rationale for expected outcomes through a review of relevant studies as follows:

Corporate Governance and Investment Efficiency (H1)

Bimo et al., (2021) examined the impact of CG on investment efficiency and the moderating effect of industry competition. The study found that improved CG mechanism results in better investment efficiency. CG can protect the interests of investors by narrowing the probability of opportunistic behaviors from the management, and reducing agency problems and information asymmetry. The same is true for the study conducted by Lei and Chen (2019) which found that the expansion of CG had a significant impact on the improvement in investment efficiency and debt constraint can enhance the positive association of the CG practice on investment efficiency. The CG scores based on the report of World Bank were used as a dependent variable for the study of the influence of executive network and government governance on the investment efficiency of Chinese listed firms (Jin & Yu, 2017). The results indicated that the level of executive network and more CG practices, resulted in

increased corporate investment efficiency, as well as the study by Alam and Firmansyah (2019), which concluded that CG is positively associated with investment efficiency. Effective CG improves the efficiency of capital allocation for investment. According to Ezzi et al., (2022) revealed that CG practice has played a role in accelerating this relationship between blockchain technology and corporate investment efficiency. Blockchain technology has a greater impact on investment efficiency in firms that practice good CG. Lastly, besides having a positive effect on investment efficiency, CG decreases the negative association between information asymmetry and investment efficiency (Poursoleyman et al., 2021). In summary, the dimensions of CG, such as right of shareholders, equitable treatment of shareholders, roles of stakeholders, disclosure and transparency, and board responsibilities, often serve as guidelines for executives to manage the firms to create consistency of the interests for all stakeholders, in particular, the dimensions of disclosure and transparency, and board responsibilities involve controlling top management behavior, reducing the potential for conflict of interest and agency cost, as well as creating transparency to reduce the level of information asymmetry, which leads to a reduction in moral hazard and adverse selection. Investment decisions are therefore often analyzed and decided to make in a way that maximized firm benefits. Investment opportunities will be thoroughly evaluated, positive NPV projects will be accepted while value-destroying projects will be rejected. Capital allocation will be efficient and ultimately increase investment efficiency. Considering the findings above regarding the influence of corporate governance practices on investment efficiency including the above conclusions, the following research hypothesis was proposed:

H1: The corporate governance index has a positive impact on investment efficiency.

Corporate Risk-Taking and Investment Efficiency (H2)

The level of corporate risk-taking is determined by the level of operational risk resulting from business and financial risk as part of financing decisions (Ren et al., 2019). A high level of risk-taking indicates that the firm has greater uncertainty in terms of value creation and future cash flows (Daspit et al., 2019). Thus, the firm's preference for risk and the degree of risk control can be considered based on the level of corporate risk-taking that the firm is facing. (Yan et al., 2021). If the level of risk-taking is high, the firm has a high degree of risk control and a preference for risk. In addition, a higher level of corporate risk-taking can be associated with the firm's potential to the creation of long-term competitive advantage, which corresponds to Roper and Tapinos (2016) and García-Granero et al., (2015) which state that the willingness and capacity to take risks are essential for firms to improve innovation and achieve innovation performance.

One of the key factors affecting the level of risks a firm is facing is the corporate strategy (Habib & Hasan, 2017; Shahzad et al., 2019). The corporate strategy has a significant impact on the level of corporate risk-taking. Managers, in general, are key stakeholders who play a vital role in shaping business strategy. Managers with aggressive business behaviors and managers with conservative business behaviors reflect two types of investing behaviors. Managers with aggressive behaviors often invest in high-risk projects, develop new products or services that challenge the market, or may enter the competition in new markets. Aggressive behaviors may contribute to the firm's investment risk and cause fluctuations in the firm's revenue, eventually increasing the corporate's risk-taking level. A higher level of corporate risk-taking may encourage corporate management to continue focusing on strategic investment for long-term development and competitive advantage. However, excessive risk exposure would decrease firm value due to resource constraints (Poletti- Hughes & Williams, 2019). In situations where firms are facing high corporate risk-taking, the managers' aggressive level may be reduced. Therefore, the manager may make appropriate

decisions and focus on enhancing capital allocation efficiency, possibly contributing to reductions overinvestment problem to increase investment efficiency. Additionally, based on the aspect of information asymmetry, corporate risk-taking may be perceived by the market as a positive signal, which can significantly boost a firm's value (Imnof & Seavey, 2014). Consequently, firms with a high level of risk-taking consent willingly disclose critical information that helps all external stakeholders understand the internal operation that reflects manager behavior, which contributes to alleviating agency problems, moral hazard, and protecting information asymmetry. In this case, managers tend to improve the investment decision process, including reducing opportunistic management behavior, reducing agency conflicts, and redirecting management toward optimal behavior, which is of great importance for an increase in optimal investment efficiency, as well as García-Granero et al., (2015), which states that the level of corporate risk-taking reflects the degree of trust between shareholders and managers, contributing to reducing agency problems and possibly contribute to the reduction overinvestment or underinvestment problems.

In contrast, managers with conservative behaviors are more likely to be interested in traditional goods or services that provide low risk, generating stable income. Consequently, they are faced with controllable risk, which limits the amount of corporate risk-taking which is consistent with Bin-Feng, et al., (2021) stated that a conservative working capital strategy diminishes overall corporate risk-taking by reducing the level of operational exposure and financial risk. The low volatility in an entity's EBIT indicates that the entity faces low business risk. However, focusing within the same market, which may not have competitiveness, as well as not exploring new products, may have an impact on the firm's growth potential. If managerial performance assessments are tied to firm performance, poor management outcomes can affect the stability of managers' positions. Therefore, poor management outcomes may be a key important factor driving managers to explore investment opportunities, especially value-enhancing projects, and decide to invest in such projects. The level of conservation investment behavior may be reduced, the underinvestment problem could be alleviated, increasing the level of investment efficiency. Moreover, under circumstances where managerial performance assessments are tied to firm performance, due to the willingness to take risks has a significant impact on the amount of corporate risk-taking (Yan et al., 2021), therefore the low willingness to take risks of conservative managers thus leads to the low level of corporate risk-taking. The level of conservation investment behavior may not decrease. Managers may persist in rejecting investments in high risk but firm value-enhancing projects or innovation activities because high risk project accompanies a higher degree of uncertainty, increasing the variation of the firm's operation (Kosmidou & Ahuja, 2019; Anderson et al., 2012), the results of these high project may deviate from expectations and affect firm performance and inevitably affect job stability. This case shows that the underinvestment problem persists, reflecting that the investment efficiency is low.

Conclusively, high levels of corporate risk-taking may drive managers to make appropriate investment decisions and focus on enhancing capital allocation efficiency as excessive risk exposure would decrease firm value due to resource constraints. Additionally, firms with a high risk-taking must disclose more essential information. The level of information asymmetry, the potential for agency problem, moral hazard and opportunistic management behavior could be reduced, leading to an increase in investment efficiency. Based on the above findings and the conclusion relating to the association of the level of corporate risk-taking on investment efficiency, this study presents the second hypothesis as under

H2: The level of corporate risk-taking has a positive impact on investment efficiency.

The Interacting Role of Debt Maturity on the Relationship between Corporate Governance and Investment Efficiency (H3)

The excess free cash flow is like a cash buffer that managers can use to invest and face a high level of uncertainty. Unfortunately, excessive free cash flows may not discipline managers to operate efficiently since managers tend to create an overinvestment problem (Richardson, 2006). The obligations arising from debt financing create some consequence impacts, which can lower the surplus of cash flow, and further limit a manager's ability to overinvest (Aivazian et al., 2005). Thus, high-leverage firms may be unable to invest in new investment projects, even if the projects have a positive NPV, resulting in an underinvestment. Therefore, debt financing can discipline and encourage managers to increase efficiency in every decision-making process (Jensen, 1993), as well as play a role in reducing opportunistic behavior, restraining management discretion in using agency resources, and limiting their tendency to use agency cash flow inefficiently. The expansion of CG had a significant impact on the improvement in investment efficiency and found that debt constraint can enhance the positive association of the CG on investment efficiency (Lei & Chen 2019). In other words, when debt increases, investment efficiency improves as the CG expands.

In general, the underinvestment problem arises when shareholders reject value-enhancing investment opportunities since the advantages of adopting these projects mostly serve debtholders rather than shareholders' wealth (Myers & Majluf, 1984), leading to higher agency cost. As a result, firms with larger potential growth face a greater underinvestment problem, causing them to employ less long-term debt but more short-term debt to address the underinvestment problem (Custodio et al., 2013; Aivazian et al., 2005). Jeon & Oh, (2017) concluded that both debt maturity and investment efficiency were significantly positive. This means that the shorter debt maturity, the higher the investment efficiency, in line with Gomariz & Ballesta (2014) who state that overinvestment is the primary concern of creditors since it is through overinvestment that managers expropriate creditors and minority shareholders, and this inefficiency can be reduced with shorter maturities (Gomariz & Ballesta, 2014). Furthermore, Childs et al., (2005) noted that even though short-term debt can alleviate debt overhang problems, this benefit must be balanced against the cost of liquidity risk, incorporate with short-term debt allows firms to make frequent repricing of debt contracts, thereby, reducing both underinvestment and overinvestment problems, along with Johnson (2003) suggest that short-term debt can alleviate underinvestment problems, firms might shorten the debt maturity to minimize the problem of underinvestment since short-term debt is regarded as a disciplining tool (Johnson, 2003; Ozkan, 2000). Finally, firms are also found to shorten the maturity of the debt to preserve future debt capacity for future growth opportunities (Aivazian et al., 2005; Diamond & He, 2014), as well as Park and Bae (2011) revealed that debt maturity structure plays a role in the correction of capital market imperfections which can contribute to increase in the corporate investment efficiency.

To conclude, debt financing can discipline and encourage managers to increase efficiency. The obligations arising from debt financing can lower the surplus of free cash flow, and further limit a manager's ability to invest. Additionally, it also plays a role in reducing opportunistic behavior, limiting their tendency to use agency cash flow inefficiently. Specifically, short-term debt might discipline management since the fragility caused by short-term debt minimizes managerial moral hazard. Although short loan maturities raise liquidity risk and weaken the optimal financial structure, they can lower the cost of underinvestment problems and lead to the optimal investment decision. Based on the above finding and the preceding discussion relating to the interaction effect of debt maturity on the association between CG practice and investment efficiency, this study proposed the following research hypothesis:

H3: Debt Maturity plays an interacting role in the association between the corporate governance index and investment efficiency.

The Interacting Role of Debt Maturity on the Relationship between Corporate Risk-Taking and Investment Efficiency (H4)

Corporate debt financing is one of the mechanisms used to control potential agency conflicts between managers and shareholders (Anginer et al., 2022), resulting in a decrease in the manager's opportunistic behaviour (Jensen, 1993). In particular, the lenders will analyse firms and managers before the new short-term debt contract is rolled over, thus, shortening the debt maturity suggests that firms may be more appropriately managed (Ortiz-Molina & Penas, 2008), and potentially conflicting interests are reduced.

Short-term debt's characteristics of the flexibility and the ability to fund the required amount faster than long-term debt make it frequently the preferred source of funding in cases where firms have limited and insufficient funds for investment, which often results in underinvestment. Although short debt maturity can decrease incentives to underinvestment, this advantage must be balanced with the higher liquidity risk (Childs et al., 2005), in accordance with Johnson, (2003), who stated that the firm compares the cost of underinvestment problems against the cost of liquidity risk when deciding on short-term financing.

More importantly, in the case firms are facing business risk, as reflected in high corporate risk-taking, which is expected to have a positive influence on investment efficiency due to a decline in aggression, overconfidence, and managerial opportunism behavior of manager, if firms still face severe financial constraint, such as the high proportion of short-term debt, then pressure or constraints arising from short-term debt financing could exert pressure on management to accelerate efficiency in resource allocation, focusing on value-enhancing investment projects, reducing the possibility of investing in value-destroying projects. Corporate investment behaviors of managers that are expected to change are all likely to result in a decline in the over-underinvestment problem, leading to the higher investment efficiency.

To summarize, the proportion of short-term debt may accelerate investment decision made by firms with high corporate risk-taking aiming to optimize resource allocation. Executives will be pressured by both business risk and financial risk. Managers with conservative behaviors are aware of the unavoidable pressures that result in a change in investment decision behaviors, while managers with aggressive behaviors are likely to change their investment behaviors in long-term projects that require high investment and are full of uncertainty. The chances of an ineffective investment are likely to be reduced. Beneficial projects will be more considered and more efficient in decision-making. In light of the above findings and the analysis relating to the interaction effect of debt maturity on the association between corporate risk-taking and investment efficiency, this study proposed the following research hypothesis:

H4: Debt Maturity plays an interacting role in the association between corporate risk-taking and investment efficiency.

Conclusion

Several previous studies on corporate governance and investment efficiency were explored to identify research gaps, while annual reports by Thailand's regulators and raw data from the SETSMART database were then analyzed to determine the current problems Thai firms are facing. Once the research gaps and problem statements were clearly identified, the principles of corporate governance and corporate risk-taking were extensively studied in relation to investment efficiency. Thus, corporate governance and corporate risk-taking were

defined as the two main explanatory variables, which were expected that affect investment efficiency. In addition, debt maturity is proposed as an interacting variable, which might affect the relationship between corporate governance, corporate risk-taking and investment efficiency. The outstanding novelty of this study is the procedures for constructing a CG index, which is developed by integrating more than 70 different criteria to reflect the CG practice of Thai firms in all dimensions. Four of the research hypothesis are outlined in a conceptual framework, which can be developed into a research proposal for further testing.

References

- Aivazian, V., Ge, Y., & Qiu, J. (2005). The impact of leverage on firm investment: Canadian evidence. *Journal of Corporate Finance*, 11(1-2), 277-291.
- Alam, M. P., & Firmansyah, A. (2019). The Effect of Financial Reporting Quality, Debt Maturity, Political Connection, and Corporate Governance on Investment Efficiency: Evidence from Indonesia. *International Journal of Innovation, Creativity and Change*, 7(9), 39-56.
- Anderson, R. C., Duru, A., & Reeb, D. M. (2012). Investment policy in family controlled firms. *Journal of Banking & Finance*, 36(6), 1744-1758. <https://doi.org/10.1016/j.jbankfin.2012.01.018>
- Andries, A. M., Balutel, D., Ihnatov, I., & Ursu, S. G. (2020). The nexus between corporate governance, risk taking, and growth. *PLoS one*, 15(2).
- Anginer, D., Demirgüç-Kunt, A., Simsir, S. A., & Tepe, M. (2022). Is short-term debt a substitute for or complementary to good governance? *Borsa Istanbul Review*, 22(2), 197-208.
- Ararat, M., & Yurtoglu, B. B. (2015). The Effect of Corporate Governance on Firm Market Value and Profitability: Time-Series Evidence from Turkey. *SSRN Electronic Journal*.
- Bargeron, L. L., Lehn, K. M., & Zutter, C. J. (2010). Sarbanes-Oxley and corporate risk-taking. *Journal of Accounting and Economics*, 49, 34-52.
- Bhuiyan, B. U., Cheema, M. A., & Man, Y. (2021). Risk committee, corporate risk-taking and firm value. *Managerial Finance*, 4(3), 285-309. <https://doi.org/10.1108/MF-07-2019-0322>
- Biddle, G. C., Hilary, G., & Verdi, R. S. (2009). How Does Financial Reporting Quality Improve Investment Efficiency? *Journal of Accounting and Economics*, 48(2-3), 112-131. doi:10.2139/ssrn.1146536
- Bimo, I. D., Silalahi, E. E., & Kusumadewi, N. G. (2021). Corporate governance and investment efficiency in Indonesia: the moderating role of industry competition. *Journal of Financial Reporting and Accounting*, 20(2), 371-384. <https://doi.org/10.1108/JFRA-12-2020-0351>
- Bin-Feng, C., Mirza, S. S., Ahsan, T., Safdar, R., Iqbal, A., & Hayat, M. (2021). Family control and corporate risk-taking in China: Does working capital strategy matter? *Economic Research-Ekonomska Istraživanja*. <https://doi.org/10.1080/1331677X.2021.2013270>
- Black, B., Jang, H., & Kim, W. (2006a). Does corporate governance predict firms' market values? Evidence from the Korean market. *The Journal of Law, Economics, and Organization*, 22, 366-413. <https://doi.org/10.1093/jleo/ewj018>
- Bromiley, P. (1991). Testing a causal model of corporate risk taking and performance. *Academy of Management Journal*, 34, 37-59.
- C. Jensen, M., & H. Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Chen, F., Hope, O. -K., Li, Q. L., & Wang, X. (2011). Financial Reporting Quality and Investment Efficiency of Private Firms in Emerging Markets. *The Accounting Review*, 1255-1288.

- Chen, S., & Xie, Z. (2015). Is China's e-Governance Sustainable? Testing Solow IT Productivity Paradox in China's Context. *Technological Forecasting and Social Change*, 96, 51-61.
<https://doi.org/10.1016/j.techfore.2014.10.014>
- Cheng, M., Dhaliwal, D., & Zhang, Y. (2013). Does investment efficiency improve after the disclosure of material weaknesses in internal control over financial reporting? *Journal of Accounting and Economics*, 56(1), 1-18. <https://doi.org/10.1016/j.jacceco.2013.03.001>
- Cheng, Q. (2021). Corporate Strategy and Risk-Taking Level—Based on the regulatory Role of Audit Quality. *Open Journal of Business and Management*, 9, 1631-1646.
<https://doi.org/10.4236/ojbm.2021.94089>
- Childs, P. D., Maurer, D. C., & Ott, S. H. (2005). Interactions of corporate financing and investment decisions: The effects of agency conflicts. *Journal of Financial Economics, Elsevier*, 76(3), 667-690.
- Chung, K. H., & Zhang, H. (2011). Corporate governance and institutional ownership. *Journal of Financial and Quantitative Analysis*, 46(1), 247-273.
<https://doi.org/10.1017/S0022109010000682>
- Core, J. E., Guay, W. R., & Rusticus, T. O. (2006). Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations. *The Journal of Finance*, 61(2), 655-687.
- Custodio, C., Ferreira, M., & Laureano, L. (2013). Why are US firms using more short-term debt? *Journal of Financial Economics*, 108(1), 182-212.
<https://doi.org/10.1016/j.jfineco.2012.10.009>
- Daspit, J. J., Long, R. G., & Pearson, A. W. (2019). How familiness affects innovation outcomes via absorptive capacity: A dynamic capability perspective of the family firm. *Journal of Family Business Strategy*, 10(2), 133-143. <https://doi.org/10.1016/j.jfbs.2018.11.003>
- Diamond, D. W., & He, Z. (2014). Theory of Debt Maturity: The Long and Short of Debt Overhang. *The Journal of Finance*, 69(2), 719-762. <https://doi.org/10.1111/jofi.12118>
- Dong, B. B. (2014). Do Risks Need to Be Balanced: The Inverted U-Shaped Relationship between Risk-Taking and Performance of New Enterprises and the Mediating Role of Entrepreneurial Ability. *Management World*, 1, 120-131.
- Ehie, I. C., & Olibe, K. (2010). The effect of R&D investment on firm value: An examination of US manufacturing and service industries. *International Journal of Production Economics*, 28(1), 127-135.
- García-Granero, A., Llopis, O., Fernández-Mesa, A., & Vidal, J. A. (2015). Unraveling the link between managerial risk-taking and innovation: The mediating role of a risk-taking climate. *Journal of Business Research*, 68(5), 1094-1104.
<https://doi.org/10.1016/j.jbusres.2014.10.012>
- Gomariz, M. F., & Ballesta, J. P. (2014). Financial reporting quality, debt maturity and investment efficiency. *Journal of Banking & Finance*, 40(C), 494-506.
- Grenadier, S. R., & Wang, N. (2005). Investment timing, agency, and information. *Journal of Financial Economics*, 75, 493-533. <https://doi.org/10.1016/j.jfineco.2004.02.004>
- Habib, A., & Hasan, M. M. (2017). Business strategy, overvalued equities, and stock price crash risk. *Research in International Business and Finance*, 39, 389-405.
<https://doi.org/10.1016/j.ribaf.2016.09.011>

- Homayoun, S. (2015). Agency theory and corporate governance. *International Business Management*, 9(5), 805-815. <https://doi:10.3923/ibm.2015.805.815>
- Imnof, M. J., & Seavey, S. E. (2014). Corporate risk-taking, firm value and high levels of managerial earnings forecasts. *Advances in Accounting, incorporating Advances in International Accounting*, 30, 328-337. <https://doi:10.1016/j.adiac.2014.09.004>
- Jacoby, G., Liu, M., Wang, Y., Wu, Z., & Zhang, Y. (2019). Corporate governance, external control, and environmental information transparency: Evidence from emerging markets. *Journal of International Financial Markets, Institutions and Money*, 58, 269-283. <https://doi:10.1016/j.intfin.2018.11.015>
- Jensen, M. C. (1993). The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems. *The Journal of Finance*, 48(3), 831-880. <https://doi:10.1111/j.1540-6261.1993.tb04022.x>
- Jeon, H. J., & Oh, H. M. (2017). Debt Maturity and Investment Efficiency Evidence from Korea. *Journal of Applied Business Research (JABR)*, 33(6), 1081-1094. <https://doi:10.19030/jabr.v33i6.10047>
- Jin, X., & Yu, J. (2017). Government governance, executive networks and corporate investment efficiency. *China Finance Review International*, 8(2), 122-139. <https://doi:10.1108/CFRI-06-2016-0053>
- John, K., Litov, L., & Yeung, B. (2008). Corporate governance and risk-taking. *The Journal of Finance*, 63, 1679-1728. <https://doi:10.1111/j.1540-6261.2008.01372.x>
- Johnson, S. A. (2003). Debt Maturity and the Effects of Growth Opportunities and Liquidity Risk on Leverage. *Review of Financial Studies*, 16(1), 209-236. <https://doi:10.1093/rfs/16.1.0209>
- Kosmidou, V., & Ahuja, M. K. (2019). A configurational approach to family firm innovation. *Family Business Review*, 32(2), 154-173. <https://doi:10.1177/0894486519827738>
- Kreiser, P. M., Marino, L. D., & Weaver, M. (2002). Assessing the Psychometric Properties of the Entrepreneurial Orientation Scale: A Multi-Country Analysis. *Entrepreneurship Theory and Practice*, 26(4), 71-93.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor protection and corporate governance. *Journal of Financial Economics*, 58(1-2), 3-27.
- Lei, Q., & Chen, H. (2019). Corporate Governance Boundary, Debt Constraint, and Investment Efficiency. *Emerging Markets Finance and Trade*, 55(5), 1091-1108. doi:10.1080/1540496X.2018.1526078
- Li, K., Griffin, D., Yue, H., & Zhao, L. (2013). How does culture influence corporate risk-taking? *Journal of Corporate Finance*, 23, 1-22.
- Li, Q., & Wang, T. (2010). Financial Reporting Quality and Corporate Investment Efficiency: Chinese Experience. *Nankai Business Review International*, 1(2), 197-213.
- Monetary Policy Department, Bank of Thailand. (2020). Turning Crisis into Opportunity: How to Invest for Sustainable Growth in a Post-COVID-19 World. *Focused and Quick*, 176, 1-10.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187-221.

- Naeem, K., & Li, M. C. (2019). Corporate investment efficiency: The role of financial development in firms with financing constraints and agency issues in OECD non-financial firms. *International Review of Financial Analysis*, 42(C), 53-68. <https://doi:10.1016/j.irfa.2019.01.003>
- Nsour, M., & Al-Rjoub, S. M. (2021). Building a corporate governance index (JCGI) for an emerging market: case of Jordan. *International Journal of Disclosure and Governance*.
- OECD. (2015). G20/OECD Principles of Corporate Governance. Paris: *OECD Publishing*. <https://doi:10.1787/9789264236882-en>
- Ohlson, J. A. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research*, 11(2), 661-687.
- Ortiz-Molina, H., & Penas, M. (2008). Lending to small businesses: the role of loan maturity in addressing information problems. *Small Business Economics*, 30(4), 361-383. doi:10.1007/s11187-007-9053-2
- Ozkan, A. (2000). An empirical analysis of corporate debt maturity structure. *European Financial Management*, 6(2), 197-212. <https://doi:10.1111/1468-036X.00120>
- Park, S. Y., & Bae, H. S. (2011). The effects of financial reporting quality and corporate governance on investment efficiency. *Accounting Information Research*, 29(4), 363-392.
- Pititawatchai, P. (2021, August 25). Thailand Focus 2021: Thriving in the Next Normal. Retrieved from prachachat: <https://www.prachachat.net/finance/news-746350>
- Poletti-Hughes, J., & Williams, J. (2019). The effect of family control on value and risk-taking in Mexico: A socioemotional wealth approach. *International Review of Financial Analysis*, 63, 369-381.
- Ren, T., Liu, N., Yang, H., Xiao, Y., & Hu, Y. (2019). Working capital management and firm performance in China. *Asian Review of Accounting*, 27(4), 546-562. <https://doi:10.1108/ARA-04-2018-0099>
- Richardson, S. (2006). Over-Investment of Free Cash Flow. *Review of Accounting Studies*, 11, 159-189.
- Roper, S., & Tapinos, E. (2016). Taking risks in the face of uncertainty: An exploratory analysis of green innovation. *Technological Forecasting and Social Change*, 112, 357-363.
- Seta, M. D., Morellec, E., & Zucchi, F. (2020). Short-term debt and incentives for risk-taking. *Journal of Financial Economics*, 137(1), 179-203. <https://doi:10.1016/j.jfineco.2019.07.008>
- Shahzad, F., Lu, J., & Fareed, Z. (2019). Does firm life cycle impact corporate risk-taking and performance? *Journal of Multinational Financial Management*, 51(C), 23-44. doi:10.1016/j.mulfin.2019.05.001
- Srijunpetch, S. (2012). Principles of Corporate Governance. *Journal of Business Administration, Thammasat Business School*, 35(133).
- Thai Institute of Director Association. (2021). Corporate Governance Report of Thai Listed Companies 2021. Bangkok: *Thai Institute of Director Association*.
- The Stock Exchange of Thailand. (2017). corporate governance code for listed companies 2017. Bangkok: *The securities and exchange commission*.
- The Stock Exchange of Thailand. (2021). SET CEO Survey 2021. Bangkok: *The Stock Exchange of Thailand*.
- Ullah, I., Majeed, M. A., Fang, H. X., & Khan, M. A. (2020). Female CEOs and investment efficiency: evidence from an emerging economy. *Pacific Accounting Review*, 32(4), 443-474.

- Utama, C. A., Utama, S., & Amarullah, F. (2017). "Corporate governance and ownership structure: Indonesia evidence. *Corporate Governance*, 17(2), 165-191. <https://doi:10.1108/CG-12-2015-0171>
- Verdi, R. S. (2006). Financial Reporting Quality and Investment Efficiency. <https://doi:10.2139/ssrn.930922>.
- Yan, X., Zhang, Y., & Pei, L. -L. (2021). The impact of risk-taking level on green technology innovation: Evidence from energy-intensive listed companies in China. *Journal of Cleaner Production*, 286.
- Yang, H., & Morgan, S. L. (2011). Business Strategy and Corporate Governance in the Chinese Consumer Electronics Sector. *Business strategy and corporate governance: theoretical and empirical perspectives*, 23-46. <https://doi:10.1016/B978-1-84334-656-2.50002-8>
- Zhang, H. (2009). Effect of derivative accounting rules on corporate risk-management behavior. *Journal of Accounting and Economics*, 47, 244-264.

The Impact of the Sovereign Asset and Liability Management (SALM) Application on the Efficient Debt Management

Mohammed Mahmoud Feyyad Al – Jaloudi &Haslindar Ibrahim

School of Management, Universiti Sains Malaysia, Malaysia

Abstract

This study aims to identify the sovereign asset and liability management (SALM) application on the efficient debt management, through use of time series analysis, for Jordanian public debt financial data from 2010 to 2020. The data will be collected from the ministry of finance database in order to answer the testable hypotheses. The study will apply Time Series Analysis Model to analyze the data of Jordanian public debt which the data have been collected based on the quarterly basis for the period from 2010 until 2020. By adopting SALM framework, the study will analyze its effect on the Efficient Debt Management which mean that they know the way to manage the countries debt, directly affect the life level and style. Most of past studies show that there were positive relationship, some of the results were no significant and also mixed findings. The reasons of the mixed results between the previous studies may be referred to the used of different methods, different sub-variables, and different measures in their research models. In addition, the findings of the study will lead to on how to improve the probability of delivering high level of economy to the country successfully and how to reduce a financial risk, and manage countries debt, which is remains unresolved.

Keywords: cash reserve; efficient debt management; sovereign asset and liability management; time series analysis model.

Introduction

The financial and economic crises of the last thirty years have amply demonstrated that unattended public and private sector risks can be at crises' origins roots. Sovereigns are susceptible to various risks and uncertainties relating to their financial assets and liabilities, depending on the country's level of economic and financial development (Das, 2011). Typically, emerging market sovereigns face increased market exposure of their net foreign asset and debt portfolios, especially as they expand access to domestic and international capital markets. Many frontier market sovereigns are exposed to risks arising from terms-of-trade shocks and changes in debt refinancing terms, and tend to be more vulnerable to exogenous shocks than other countries.

Advanced markets face market risk exposure as well; particularly those that rely on capital market access and are systemically important issuers of public debt. Newberry (2015) thinks that accruals-based appropriations and outcomes-focused strategy statements weaken a legislature's power of control over the executive government and divert attention from the control of public finance, which increasingly appears to be delegated to the executive government. Importantly, Newberry (2015) draws attention to the reform of sovereign debt management. He discusses sovereign debt management reforms and the subsequent extension of the techniques involved to all assets and liabilities in the government's financial reports. Hence, the sovereign asset and liability management (SALM) approach is proposed to provide a strategic framework to manage both sides of the sovereign balance sheet. Cangoz et al. (2018) assert that the ALM approach has been used in financial institutions for many years to reduce currency, tenor, index and other mismatches between assets and liabilities so that the balance sheet is able to withstand shocks better.

To identify and manage effectively the key financial exposures, a sovereign asset and liability management (SALM) framework, based on the balance-sheet approach, can be employed. This framework can also be used to inform the macroeconomic and financial stability policy design. SALM focuses on managing and containing the financial risk exposure of the public sector as a whole, so as to preserve a sound balance sheet needed to support a sustainable policy path and economic growth. The SALM approach entails monitoring and quantifying the impact of movements in exchange rates, interest rates, inflation, and commodity prices on sovereign assets and liabilities and identifying other debt-related vulnerabilities (Rosenberg et al., 2005) in a coordinated if not an integrated way.

Against this backdrop, the SALM framework has been increasingly attracting the interest of policy makers and public debt managers in recent years. The main motivation behind this development is the changing structure of the sovereign balance sheet. Recent literature on the SALM underlines that, as sovereign balance sheets get larger in size and more complex in structure, the consideration of adopting SALM approach by sovereigns, specifically debt managers, for risk management purposes becomes more prominent (Blommestein and Koc, 2008; IMF, 2011; Das et al., 2012). Already, some debt management offices take other components of sovereign balance sheet into account when designing debt management strategies. Country experiences indicate that SALM applications vary based on the degree of the portfolio coordination.

Starting from 1990's, Sovereign Asset and Liability Management (SALM) has been adopted by public debt managers driven by various developments, in particular their increasing in their responsibilities in managing sovereign assets and contingent liabilities. SALM proved to be an efficient way or tool in capturing and managing long term budget and financial risks in a holistic way. Nevertheless, significant practical and governance challenges related to the SALM framework, such as consolidation of a sovereign balance sheet, centralization of risk management, as well as technical and institutional capacity problems, complicate widespread adoption of SALM in developing countries (Blommestein & Koc, 2008).

The economic and financial development level in countries is important but it is hard to be controlled or expected due to its complexity and dynamic in nature as a result of uncertainties surrounding rapidly changing, political conditions, changing requirements and impacts of environmental, political and economic changes. Therefore, achieving high level of economy is challenging and both academics and financial expert's practitioners have presented many suggestions to the interest of policy makers and public debt managers who have struggled with the best way to lead, control and manage effectively the key financial exposures by using the sovereign asset and liability management (SALM) framework. Therefore, the problem occurs on how to find the solution to improve the probability of delivering high level of economy to the country successfully and how to reduce a financial risk and manage countries debt, which is remains unresolved.

Furthermore, there are mixed results about the effect of sovereign asset and liability management (SALM) on managing the countries debt, which directly affect the life level and style in it. The reasons of the mixed results between the previous studies may be referred to the used of different methods, different sub-variables, and different measures in their research models. In addition, the way they performed are in different contexts such as different countries. From the researcher point of view the main difference is there are different situations depending on each country overall financial condition. In fact, the study also finds most of the past empirical findings were positive in direction and some of the results were no significant. Therefore, this study will find out the benefits of using SALM framework and it effect on the Efficient Debt Management by analyzing Jordanian Public Debt Data specifically for the time period from the year 2010 to 2020. Thus, the main objective of this study is to analyze the effect of SALM framework on Efficient Debt Management in Jordan.

Literature Review

Debt Management

The financial and economic crises of the late 1990s encouraged leaders to search for a tool that would reduce the possibility of future crises and reduce the effect of any that happened. Policy makers and public debt managers in international organizations got actively involved in that search. One product of these efforts was (The Guidelines for Public Debt Management) that the International Monetary Fund (IMF) and the World Bank (WB) developed in close collaboration with national debt managers throughout the world. The objectives of the guidelines were “to assist policymakers in considering reforms to strengthen the quality of their public debt management and reduce their country’s vulnerability to international financial shocks” as provided in IMF and World Bank (2003).

According to Bamidele and Joseph (2013), debt is defined as the resource or liquid asset that is used up in an organization, without being contributed by the owners and does not in any other way belong to the organizations. However, a public debt could be external or internal. External debt is the amount, at any given time, of disbursed and outstanding contractual liabilities of residents of a country to nonresidents to repay principal, with or without interest, or to pay interest, with or without principal (The World Bank et al., 1998).

Though the debt, if appropriately utilized and managed, is expected to help the debtor country’s economy and financial situation, however, the management of debt by way of service payment, that is, the sum of principal payments and interest actually paid in the foreign currency, especially in foreign currency that tends to affect exchange rate. Today, sovereign debt management has broadened into extensive governmental participation in financial market activities involving very large amounts of public money (Cangoz et al., 2018). Financial management reforms have been adopted internationally to enable direct access to public funding, especially in times of financial crisis.

Over the past decade, a broad consensus has developed that good public debt management (PDM) can help countries reduce borrowing cost, contain financial risk, and develop their domestic debt market. It also can facilitate and help maintaining financial stability and help to develop the country domestic financial system. While this holds for all countries, the needs and constraints of countries in designing good PDM systems vary depending on each country’s degree of development and financial situation. Thus, while the experience and practices of developed countries is undoubtedly helpful, emerging markets and low income countries need solutions tailored to their needs and constraints that why the “cookie cutter” approaches is not enough.

Moreover, debt management strategies need to be fitted in an overall macroeconomic policy framework that preserves stability and is conducive to growth. Also, a monetary policy that keeps inflation low will facilitate the issuance of debt denominated in domestic currency. Professional excellent public debt management helps reduce borrowing cost in many ways. Good public debt management can also help develop the domestic financial market. Domestic financial institutions benefit from having available public debt instruments in which to invest and which can provide benchmarks for the pricing of other instruments. Moreover, firms and individuals also benefit for similar reasons. In turn, a well-developed domestic financial market can facilitate economic development, and make the economy more resilient to external shocks, such as capital outflows. In light of these benefits, it is important to define more specifically the objectives, components, and the principles that constitute a sound public debt management strategy, and how such a strategy can be designed and implemented. To illustrate this, this study will discuss key issues in debt management, focusing on recent developments in country practices, and experiences, which may be applied in Jordan country.

A debt management strategy is a key element of sound practice as pointed by Wheeler (2004). He defines it as that strategy “enables debt managers to make portfolio decisions within

well-defined parameters for cost and risk”, while Public Debt Management is the process of establishing and executing a strategy for managing the government’s debt in order to raise the required amount of funding at the lowest possible cost over the medium to long run, consistent with a prudent degree of risk (IMF, 2014). It should also meet any other public debt management goals the government may have set, such as developing and maintaining an efficient market for government securities or debt to GDP ratio.

Furthermore, in terms of scope, debt management in Jordan should encompass the main financial obligations over which the central government exercises control. In a broader macroeconomic context for public policy, governments should seek to ensure that both the level and rate of growth in their public debt are on a sustainable path and that the debt can be serviced under a wide range of circumstances, including economic and financial market stress tests, while meeting cost and risk objectives (IMF, 2014).

While the responsibility for compliance with debt ceilings and for conducting debt sustainability analysis (DSA) lies with the fiscal authorities, public debt managers in the responsible central government agencies should monitor any emerging debt sustainability problems, based on portfolio risk analyses and market reactions observed when conducting debt management operations, and inform the government on a timely basis. Ultimately, there are several benefits associated with good public debt management. First, it can help countries reduce their borrowing cost in many ways. Second, a carefully balanced composition of securities can contain risks which are harder to manage in countries having few alternative sources of finance. Third, effective debt management practices can reduce the vulnerability of the economy to economic and financial shocks. On the other hand, poorly structured debt portfolios, in terms of maturity, currency, or interest rate composition and large contingent liabilities, have been important factors in inducing or propagating economic crises in many countries throughout history even though they may not have been the sole or even the main trigger of such crises.

The Sovereign Asset and Liability Management (SALM)

ALM is the ongoing process of formulating, implementing, monitoring and revising strategies related to assets and liabilities to achieve an organization's financial objectives, given the organization's risk tolerances and other constraints. The concept of SALM is not directly used on an operational day-to-day basis; ALM principles are applied when it comes to developing the long-term strategy of debt management. More precisely, when debt management offices set up borrowing strategies, they assess the financial characteristics of debt instruments from a broader perspective in a way to evaluate their impact on the government’s fiscal position against changes in government tax revenues and spending resulting from macroeconomic shocks (Wheeler, 2004).

According to Newberry (2015), the SALM approach aims to identify the various types of assets and liabilities a sovereign manages and explore whether the financial characteristics associated with those assets can provide insights for managing the cost and risk of the liabilities. Hence, SALM is more complicated than ALM and the development of SALM is still at an early stage. However, the policy implications of a comprehensive sovereign asset and liability management have long been discussed in the literature (Barro, 1979; Bohn, 1990; Missale, 1997; Velandia, 2002; Das et al., 2012). Based on the literature, it can be stated that the SALM approach is not controversial from an analytical point of view. The SALM provides key insights about assets and liabilities of governments, methods to detect sources of financial mismatches among them, as well as tools to reduce detected vulnerabilities to external shocks. Although a perfect match between both sides of the balance sheet cannot be reached, harmonization of the financial characteristics reduces the influences of macroeconomic and financial fluctuations on the sovereign balance sheet. The SALM framework also provides an

opportunity to conduct sovereign portfolio stress testing, allowing countries to optimally manage their sovereign debt and asset portfolios and attain a desired level of balance sheet risk exposure in a prudent and cost-effective manner (Newberry, 2015). However, practical difficulties and governance concerns persist on its implementation in a sovereign balance sheet. Major challenges are related to the consolidation of individual balance sheets of various public agencies, coordination between those agencies, in particular the central bank and other government institutions, lack of technical capacity for executing risk-based analyses, and limitations on risk mitigating instruments (Velandia, 2002; Currie & Velandia, 2002).

Wheeler (2004) suggests that borrowing policies should be set up by considering the risk characteristics of a government's main asset and liability portfolios with a view to helping to reduce the government's overall risk. In practice, nature of the cash flows generated by the government's assets can be examined without actually measuring their values.

By defining SALM objectives, the elements of an SALM framework depends upon the stated economic policy objectives. In particular, elements such as the balance sheet definition, analytical framework, targets, and instruments are usually chosen keeping in view the authorities' economic policy objectives to be achieved through an SALM. Hansen (2003) presents a useful overview in the case for New Zealand, though it is applicable across other countries. It categorizes the objectives in 7 groups: (1) to neutralize the impact of the size and composition of the government balance sheet on economic welfare; (2) to minimize the expected deadweight losses of taxation; (3) to minimize the risk of unstable fiscal and monetary policies; (4) to minimize the agency cost of government; (5) to maximize opportunities for efficient risk sharing in a setting with incomplete capital markets; (6) to provide optimal risk management in the presence of asymmetric information; and (7) to minimize efficiency risks. This study will focus on the elements of SALM as they pertain to Jordanian country policy objectives and constraints.

SALM Methodologies Intuitive frameworks as many governments use some form of SALM in which they try to identify risks and vulnerabilities of the sovereign assets and liabilities, without necessarily identifying an economic form of the sovereign balance sheet or establishing SALM objectives. In these cases, governments often determine specific debt management or reserve management strategies that reduce certain exposures and reduce balance sheet vulnerabilities, without always quantifying the risks. Further, they may use a balance sheet in conceptual terms to visualize the interrelationships between different assets and liabilities to determine the direction in which these assets and liabilities need to be changed. One issue that most may readily recognize is the need to maintain a low level of foreign currency and short-term debt. As government revenues are typically denominated in domestic currency, foreign currency debt would expose them to a consequent currency risk. Short-term debt is to be avoided in order to reduce the rollover and reaffixing risks that government funding could face. In developing countries, international reserves could be directly linked to external debt service. To the extent that domestic companies have limited access to financing in international markets, public and total external short-term debt by residual maturity may coincide. In this case, it may be reasonable to match the currency and maturity structure of reserves with that of the public debt, as a simple natural hedging strategy. However, as local currency government debt markets develop and financial integration deepens, public debt takes a decreasing share in external debt. In this process the objectives of reserve and debt management become increasingly more complicated and difficult to coordinate.

Newberry (2015) emphasizes on adopting a comprehensive and integrated sovereign asset and liability management framework, which requires performing a joint analysis of the characteristics of financial assets and liabilities on the public sector balance sheet and possibly combining it with the balance sheet of the central bank. Cangoz et al. (2018) conduct a survey and the results confirm that there is a fragmented structure across different institutions and no

international consensus on the role of the debt management offices in sovereign ALM. In the same vein, the respondents of the study cited that the main challenges in the implementation of a SALM framework and production of a sovereign balance sheet are institutional arrangements, uncertain or lacking mandate, and coordination between the institutions, data availability, and measurement of the assets (Cangoz et al., 2018)

Though many countries face institutional challenges in the design and implementation of an effective SALM framework, numerous studies have highlighted certain conditions for the successful implementation of SALM. The roles, objectives, and resources of institutions involved in SALM have to be clearly defined and consistent to ensure an appropriate coordination in the management of assets and liabilities across institutions. Based on this, the proposed study aims to examine the Impact of the Sovereign Asset and Liability Management (SALM) Application on the Efficient Debt Management in Jordan. The literature reviewed indicates that there are still hurdles and misconceptions about the application of SALM in many countries. This proposed study will provide evidenced-based data on whether SALM has been successfully implemented in Jordan.

Hypothesis development & Proposed Research Framework

Hypothesis development

The testable null hypotheses have been developed as follows:

Ho1-1: There is no statistically significant effect of sovereign asset and liability management (SALM) Cash Reserves on the Efficient Debt Management.

Ho1-2: There is no statistically significant effect of sovereign asset and liability management (SALM) Foreign Reserves on the Efficient Debt Management.

Ho1-3: There is no statistically significant effect of sovereign asset and liability management (SALM) Equity in SOEs on the Efficient Debt Management.

Ho1-4: There is no statistically significant effect of sovereign asset and liability management (SALM) Future Revenues on the Efficient Debt Management.

Ho1-5: There is no statistically significant effect of sovereign asset and liability management (SALM) Government Debt on the Efficient Debt Management.

Ho1-6: There is no statistically significant effect of sovereign asset and liability management (SALM) Future Expenditure on the Efficient Debt Management.

Ho1-7: There is no statistically significant effect of sovereign asset and liability management (SALM) Contingent Liabilities on the Efficient Debt Management.

Proposed Research Framework

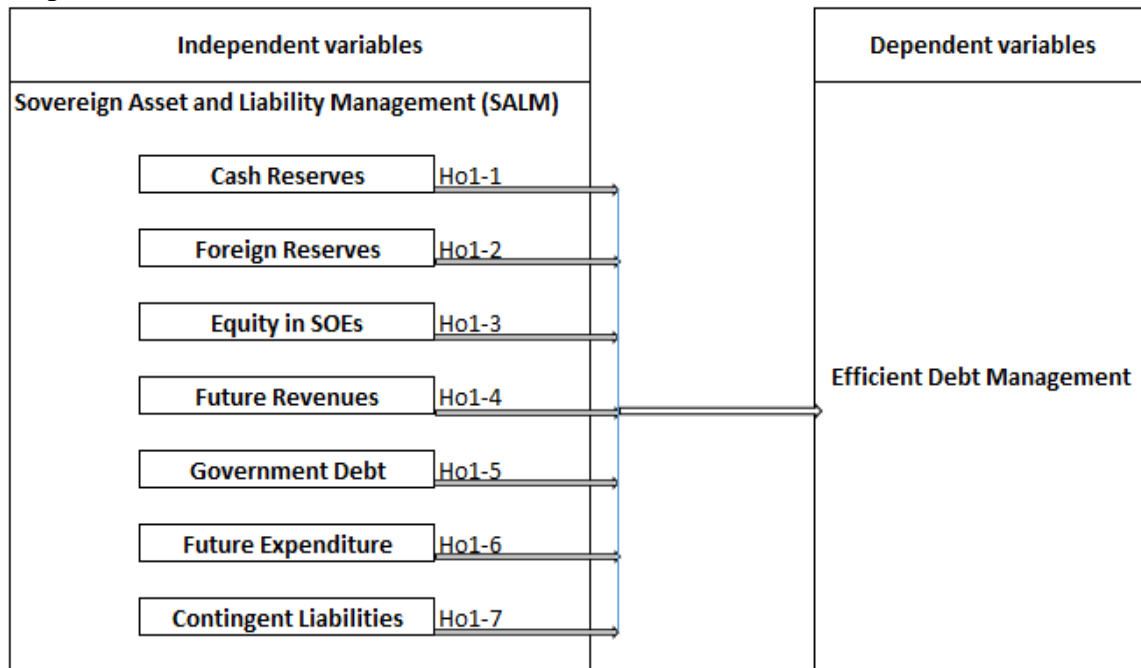


Figure 1: Proposed Research Framework

Research Methodology

This section describes the methodology of the study, stating the study population and samples, as well as the tools that will be used to collect the data, and the statistical treatment that will be used to answer the questions of the study and achieving desired objectives. Two types of variables were used for this research: Independent variables measuring the Sovereign Asset and Liability Management (SALM) framework such as Cash Reserves, Foreign Reserves, Equity in SOEs, Future Revenues, Government Debt, Future Expenditure and Contingent Liabilities, and the dependent variable is Efficient Debt Management.

The independent variables for this research have long been discussed in the previous literatures (Barro, 1979; Currie et al., 2002; Bohn, 1990; Missale, 1997; Das et al., 2012) which are used to measure the Sovereign Asset and Liability Management (SALM) which can be defined as follows:

Sovereign asset and liability management is the process of managing the use of assets and cash flows to meet the government's financial obligations at the lowest possible cost with a prudent level of risk (Yuliya, 2010).

Table 1: Measuring Variables

Table 1: Measuring Variables		
Construct Measured (Variables)	Acronym	Measuring Variables
Assets		
Financial Assets		
	FA	
Cash Reserves	CR	The reserves are specifically for short-term needs, the benefit of maintaining such a reserve is that the government can avoid credit debt or the need to take on additional loan debt. Debt service divided by Cash Reserves
Foreign Reserves	FR	Debt service divided by Foreign Reserves
Non-Financial Assets		
Equity in State-Owned Enterprise	SOEs	Net worth of the state owned enterprises (SOEs) these assets do not create cash flows. Debt service divided by Cash Reserves
Future Assets		
Future Revenues		revenues are particularly sensitive to Economic shocks. Debt service divided by future revenues
	FR	
Liabilities		
Financial Liabilities		
Government Debt	FL	Government debt which consists of securities and loans debt instruments differ in terms of currency denomination, maturity and interest rate structure.
	GD	interest payments of government debt which is a part of the budget expenditures
Future Liabilities		
Fiscal Expenditures	FE	fiscal risk, both explicit and implicit contingent liabilities should be considered in an SALM framework, explicit Contract Value ,for implicit Estimate the expected cost or market value
Contingent Liabilities	CL	

Since this study is empirically in nature, the study will follow descriptive and analytical methods by collecting data from the ministry of finance database in order to test the testable hypotheses or to answer questions concerning the current status of the subject of a study. The study will use the time Series Analysis Model to analyze the data of Jordanian Public Debt for the time period from 2010-2020.

The collected data from the targeted population of “Pubic Debt Data” in Jordan will be retrieved from 2010-2020 about Jordanian Public Debt based on quarterly basis and all data will be analyzed by applying time Series model including: Secular Trend, Scatter Diagram Method, Semi-Averages Method, Moving Averages Method, Least Squares Method, Seasonal Variations, Cyclical Variations and other methods. The data will be analyzed by using SPSS as a statistical tool in addition to compare results with other scales in the literature for other countries.

References

- Blommestein, H. J., & Kalkan, F. K. (2008). Sovereign Asset and Liability Management: Practical Steps towards Integrated Risk Management. *Financieel Forum. Bank- en Financiewezen*(6-7), 8-9.
- Wheeler, G. (2004). *Sound Practices in Government Debt Management*. Washington, D.C: The International Bank for Reconstruction and Development /The World Bank.
- Bamidele, T. B., & Joseph, A. I. (2013). Financial Crisis and External Debt Management in Nigeria. *International Journal of Business and Behavioural Sciences*(3), 4.

- Barro, R. J. (1979). On the Determination of the Public Debt. *Journal of Political Economy*(87), 940-971.
- Bohn, H. (1990). Tax Smoothing with Financial Instruments. *The American Economic Review*, 80(5), 1217-1230.
- Bunescu, L. (2014). The Impact of External Debt on Exchange Rate Variation in Romania. *Economics and Sociology*, 7(3), 104-115.
- Cangoz, M. C., Boitreaud, S., & Dychala, C. (2018). How Do Countries Use an Asset and Liability Management Approach? A Survey on Sovereign Balance Sheet Management. *Policy Research Working Papers*, 48-56. Retrieved from <https://doi.org/10.1596/1813-9450-8624>
- Das, U., Yinqiu Lu, Y., Papaioannou, M. G., & Petrova, L. K. (2012, NOV 1). Sovereign Risk and Asset and Liability Management—Conceptual Issues. *IMF Working Paper*, 12, 45. Retrieved from <https://ssrn.com/abstract=2169782>
- Das, U. (2011). Managing Sovereign Risk An Integrated Approach for Sovereign Assets and Liabilities, in Growth and Finance: Essays in Honour of C. Rangarajan, Sameer Kochhar (ed), (New Delhi, India: Academic Foundation).
- International Monetary Fund. (2005). *Debt-Related Vulnerabilities and Financial Crises—An Application of the Balance Sheet*. Washington D.C.: International Monetary Fund.
- International Monetary Fund. (2009). *Balance of Payments and International Investment Position Manual (BPM6)*. Washington, D.C.: International Monetary Fund.
- International Monetary Fund. (2014). *Government finance statistics manual 2014*. Washington, DC 20090: International Monetary Fund.
- Missale, A. (2002). Managing Public Debt: the Optimal Taxation Approach. *Journal of Economic Surveys*, 235-265.
- Romanyuk, Y. (2010). *Asset-Liability Management: An overview*. Canada: Bank of Canada Discussion paper.
- Sekaran, U., & Bougie, R. (2016). *Research Method for Business: A Skill Building Approach*. New York: John Wiley and Sons.
- Susan, N. (2015). Public sector reforms and sovereign debt management: Capital market development as strategy? *Critical Perspectives on Accounting*, 27, 101-117.

The Quality of Accounting Information and Its Impact on The Financial Stumbling in Industrial Companies in The Northern Region and Accounting Information Systems A Moderating Variable

Laith Jabr Ali Daradkeh¹, Hasliza Binti Abdulhalim¹, & Haider Muhammad Bani Atta²

School of Management, Universiti Sains Malaysia, Malaysia¹

School of Management, Jadara University, Jordan²

Corresponding email: laythdradkah@rocketmail.com; haslizaahalim@usm.my

Abstract

The study aimed to clarify the quality of accounting information and its impact on the financial stumbling in industrial companies in the northern region, and the impact of accounting information systems in modifying the relationship between them. To achieve the objectives of the study, the researchers used the descriptive analytical method. The study population consisted of financial managers working and accountants in the accounting departments of industrial companies in the northern region, which number 157 industrial companies, according to the website of the Industrial Cities Corporation (2021), in addition to the external auditors. And the study sample consisted of (152) individuals from the study community, and after conducting the statistical analysis, the results showed that the level of the basic characteristics of accounting information in industrial companies in the northern region came to an average, and that there is a statistically significant impact at the significance level ($\alpha \leq 0.05$) for the impact of information systems Accounting on the relationship between quality of accounting information and the financial stumbling in industrial companies in the northern region.

Keywords: accounting information quality; accounting information systems; companies in the northern region; industrial financial stumbling.

Introduction

Technology continues to cast a shadow over contemporary life in all its fields. The great acceleration in the transfer of knowledge and its frequency and addition to it led to an overwhelming flow of knowledge that did not leave any aspect of life unchanged, and one of the most important sectors that received its share of this change was the economic sector with all its classifications, derivations and sciences. Technological development has transferred economic practices from the simple applied dimension at the level of the facility and its offices to the expansionist dimension towards the world and its broad economic practices. One of the most prominent changes that affected the science of accounting was the emergence of the concept (accounting information systems), which transferred the science of accounting a qualitative leap that took it out of the simple manual application phase as represented in general bookkeeping and recording of the financial movements of the facility to the stage of specialized quantitative and qualitative treatment of accounting information and delivery to a wide segment of its internal and external users for the benefit of each of them according to their purpose. Of course, the concept of accounting information systems had a tangible contribution to the quality of the information provided to the concerned parties” (Metwally, 2015).

Accordingly, the financial statements and reports have an important role in anticipating the future of companies in terms of their sustainability and continuity - which is considered a goal for every established facility, It became possible for the financial stumbling, which if its pace continues, will turn into an obstacle to the implementation of the objectives of the facility

and threaten its continuity and efforts to survival. Therefore, this study focused on the issue of the financial stumbling and linked it to the accounting systems and its outputs of quality accounting information in various sectors, especially the industrial sector, for its great impact on national economies.

The Problem of the Study and Questions

Accounting information plays a pivotal role in establishments because of its impact on operations and transactions inside and outside the facility, and the user relies on the information derived from the accounting system in the tasks of planning, implementation, supervision, control and running the business of the facility. Informing them of the financial position of the facility, whether strength or weakness. Once they obtain this information, they are able to assess the company's position and the strength of its financial position or its failure. The importance and role of the accounting information system comes from the production of high-quality accounting information that enables the user to make the appropriate decision. The financial reporting standards have set standards for the adoption of high-quality information characterized by appropriateness and honest representation. One of the most important concepts that was associated with accounting information was the concept of accounting information systems, which led to a significant change in the data associated with the quality of accounting information and the applications and functions related to it such as the financial stumbling in economic establishments, so the problem of the study lies in probing the modified impact of accounting information systems on the relationship between quality of accounting information and the financial stumbling of industrial companies, and from here we have the following questions related to the problem of the study. (1) What is the impact of quality of accounting information on the financial stumbling in industrial companies in the northern region? (2) Do the basic characteristics of accounting information (relevance and honest representation) affect the financial stumbling in industrial companies in the northern region? (3) What is the impact of the enhancing characteristics of financial information (comparability, verifiability, understandability, and timeliness) on the financial stumbling in industrial companies in the northern region? (4) Does the relationship between quality of accounting information and the financial stumbling differ according to different accounting information systems?

Objectives of the Study

This study aims to clarify the quality of accounting information and its impact on the financial stumbling in industrial companies in the northern region, and the impact of accounting information systems in modifying the relationship between them in industrial companies in the northern region. (1) To identify the impact of quality of accounting information on the financial stumbling in industrial companies in the northern region. (2) Identifying the impact of the basic characteristics (appropriateness of accounting information and honest representation of information) in the financial stumbling in industrial companies in the northern region. (3) To identify the impact of the enhancing characteristics of financial information (comparability, verifiability, comprehension, and appropriate timing) on the financial stumbling in industrial companies in the northern region? (4) Identifying the impact of the rate of accounting information system on the relationship between the quality of accounting information and the financial stumbling in industrial companies in the northern region.

The Importance of Study

The researchers hope that this study will constitute a new scientific addition to the content of the concepts contained in the title of the study and its vocabulary. The study is concerned with the definition of accounting information systems and the statement of its modified impact

on the relationship between the quality of information and its reflection on the financial stumbling of industrial companies in the northern region. Stumbling in industrial companies in the northern region and the impact of accounting information systems on modifying the relationship between them in the facilities of the Jordanian industrial sector in the northern region depending on the available quality information extracted from accounting information systems and applicable in industrial companies in the northern region in light of the continuous fluctuation of economic conditions.

Hypotheses of the Study

In order to reach results through which it is possible to answer the questions of the study, the hypotheses of the study that were formulated according to the nihilistic image will be tested depending on and based on the theoretical framework and previous studies as follows:

The first main hypothesis: There is no statistically significant impact at the impact of statistical significance ($\alpha \leq 0.05$) on the relationship between quality of accounting information and the financial stumbling in industrial companies in the northern region.

The second main hypothesis: There is no statistically significant impact at the impact of statistical significance ($\alpha \leq 0.05$) on the relationship between the basic characteristics (appropriateness of accounting information and honest representation of information) in industrial companies in the northern region.

The third main hypothesis: There is no statistically significant impact at the level of statistical significance ($\alpha \leq 0.05$) on the relationship between the enhancing properties of accounting information (comparability, verifiability, understandability, and appropriate timing) and the financial stumbling in industrial companies in the northern region.

The fourth main hypothesis: There is no statistically significant impact on the impact of statistical significance ($\alpha \leq 0.05$) of the impact of modified accounting information systems on the relationship between quality of accounting information and the financial stumbling of industrial companies.

Study Model

A special model has been developed for the study to determine the quality of accounting information and its impact on the financial stumbling in industrial companies in the northern region and the impact of accounting information systems in modifying the relationship between them in industrial companies in the northern region by referring to previous studies to determine the objective of the study. Figure (1) shows the study model and its dimensions.

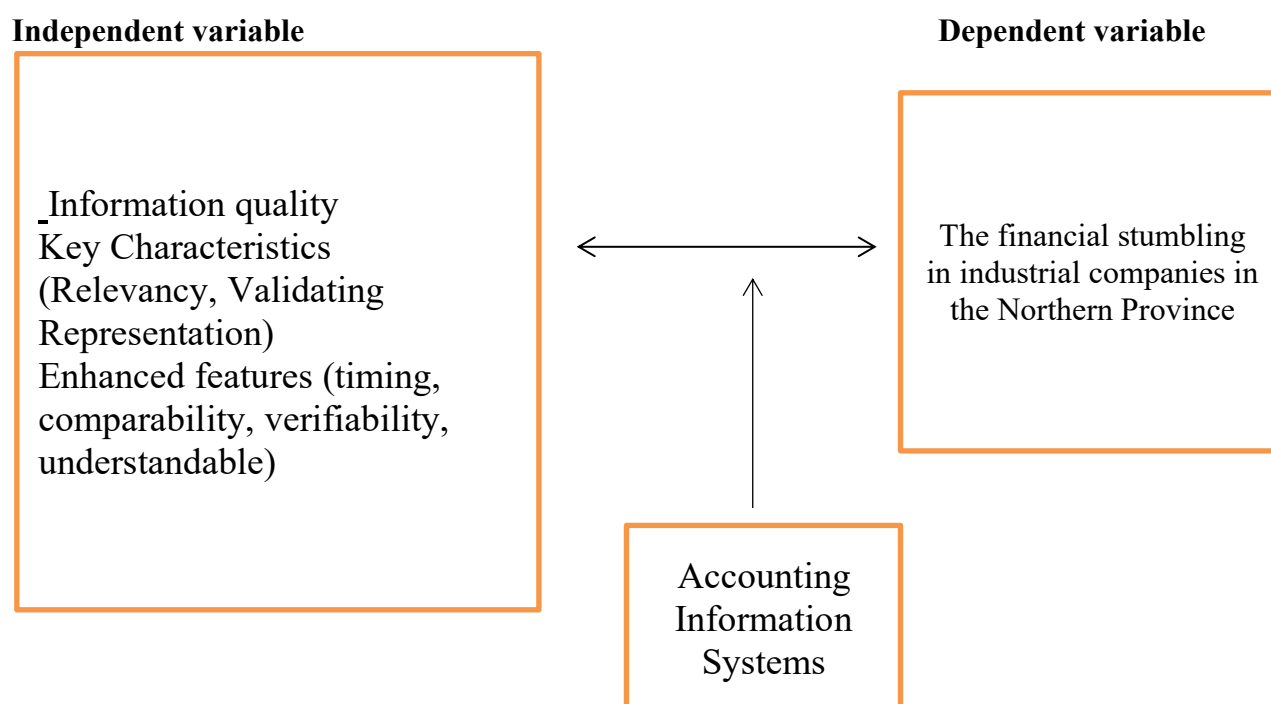


Figure 1. The Study Model and Its Dimensions

Modified Variable

Theoretical Framework of the Study

Accounting information is the mainstay in the decision-making currency because of its importance, as it affects the value of the economic unit, but it must have qualities, characteristics and quality standards in order to increase the value of those units. The availability of accounting information that includes qualitative characteristics in terms of relevance and the degree of reliance on it will serve its users in the decision-making process. The financial statements also represent the most important source of accounting information that companies are working on preparing and disclosing transparently for everyone who has a relationship with the company to be used by each in his field accurately, clearly and objectively (Boukendoura Houria, 2017). Metwally (2015) defined accounting information systems: "as a system that collects, records, stores and processes data to produce information that benefits decision-makers in the facility." The accounting information system aims to produce the reports necessary to achieve the objectives of the accounting unit, and reports of all kinds represent the final results of the accounting information system. The efficiency of accounting information systems is linked to the quality of the reports it produces, and the quality criterion in these reports is the accuracy of the data contained in them, so that the financial reports represent the results of the accounting unit's work, and the financial position at the end of the financial period. The timely arrival of data is important for the management of accounting unit; It plays an important role in making the right decisions. Inventory (2021) believes that "accounting information systems provide the means of control that contribute to protecting the company's assets from manipulation, embezzlement, and misuse by all parties."

Nawal Sabahi (2017) defined quality of accounting information as "those characteristics that must be characterized by accounting information, and expressed in the desired benefit of preparing financial reports in evaluating the quality of information those results from the application of alternative accounting methods and methods." Nouredine and Hilali (2019) consider that quality of accounting information means "the extent of compliance with the rules and procedures that are regularly and faithfully applied in a way that reflects the reality of the institution's accounts, the relative importance of the recorded events." What is meant by quality

in this context is that it is the criterion on the basis of which the accounting information can be judged on the achievement of its objectives, and it can also be used as a basis for differentiating between accounting methods for the purpose of measurement and accounting disclosure in financial reports, which allows choosing the most good information that is most useful in rationalizing decisions.

Asaws (2018) defined the financial stumbling as “a financial imbalance facing the institution as a result of the lack of its resources and capabilities to meet its obligations in the short term.” The importance of financial forecasting is highlighted by revealing the financial stumbling in large organizations. Its importance increases according to the increase in the activity of the institution and the volume of sales and production operations in it, and it is considered an important tool that enables economic decision-makers to take their investment or financing decisions in an appropriate and sound manner, in addition to that financial forecasting helps reduce the degree of uncertainty and works to assess potential risks related to the future (Berkan, 2020).

Karrusha (2016) indicates that the unit will be unable to pay its obligations, and in this case, the facility or the bank can be described as in a state of financial insolvency, and the management of the facility or the bank often resorts to many strict reform measures, for example, selling the bonds of the troubled investor at a relatively higher rate of return than the rate of return, The interest that the bond holder can accept to invest his money in other similar banks. The financial insolvency may be total when the enterprise is unable to meet its due obligations and the value of its liabilities is greater than the value of its assets, that is, it is in a state of complete inability to pay even if given a period of time or opportunities to re-correct its conditions and may fall into the stage of legal failure, a stage in which the enterprise cannot In which there is control of stumbling, which requires the intervention of the legal path and taking legal measures to declare bankruptcy or liquidation (Bin Nouna, Hamoudi, 2020). Kamush (2021) revealed the role of corporate governance indicators in predicting the financial stumbling of companies and recommended working on developing practical mechanisms to activate private corporate governance practices in order to reduce the conflict of interests between owners and managers and unify the objectives of these parties and direct them according to what serves the goals of the company. Hammad's study (2021) aimed to "study the relationship between the use of big data technology and the level of companies' financial performance in light of the modified impact of the quality of the accounting information system on the final accounts of the financial position and its fair value, which increases investor confidence," and Kamush (2020) showed weak governance practices Companies related to administrative ownership, and the separation between the positions of the chairman of the board of directors and the general manager, meaning that most of the companies surveyed are under the control and control of a central leadership (the president and general manager), the boards of directors of the surveyed companies enjoy great independence. He recommended activating the independence of the board of directors and revealing the factors that hinder its activity. This study aimed to know the impact of corporate governance practices on the financial stumbling of Algerian companies,

Aberkan (2020) clarified the importance of analyzing cash flows and their role in predicting the financial stumbling of institutions and said that stumbling cannot be limited to quantitative variables. Not only, but there are qualitative variables such as the size of the institution. Fasih (2019) showed in his study the use of prediction models of the financial stumbling in economic institutions, “the necessity of paying attention to the analysis of liquidity ratios because it measures the institution’s ability to meet its short-term obligations from its current assets”, and its ability to continue. Abdel-Malik and Darawsy (2019) pointed out the impact of the risks of the accounting information system on the quality of accounting

information: that most of the risks were the result of internal reasons, not external causes, and arise due to negligence or unintended errors.

The researchers believe that the quality of accounting information is basically the product of accounting information systems, it must be available to ensure that the facility performs its duty, starting from the higher departments with strategic functions and ending with the operational levels in the facility. Accounting information systems are the backbone of life in it because of its great impact in the management of the operations of the facility and linking the various departments functionally with each other, and constitute a link for all parts of the facility, accounting information systems help to provide the decision maker with quality parameters that enable him, for example, in limiting costs and directing the use of Resources and reduce waste and contribute to anticipating potential sales and has a major role in determining the strengths and weaknesses in the activity of the facility and making management aware of them, which contributes to making ideal decisions, such as production decisions and decisions to open new lines and the feasibility of using a manufacturing alternative in another alternative place, so it must be given The establishment in general, and in particular the industrial establishment, the accounting systems give the greatest attention because of the benefits that accrue to the establishment. And the financial stumbling in the facility is a mixture between the ability of management and the optimum use of the available resources, and it has a close relationship with the quality of accounting information. The subject of the financial stumbling remains a very controversial topic because of its complex dimensions and nature between different disciplines. It is an economic, administrative, legal, and because of its great impact on the facility and its environment, whether near such as those dealing with it or far, such as the countries in which it is located. Therefore, establishments must re-evaluate their financial position almost permanently to monitor any Premonitions of financial stumbling and trying to resist and prevent it.

The Study Method

The researchers followed the descriptive analytical method in order to identify the quality of accounting information and its impact on the financial stumbling in industrial companies in the northern region, and the impact of accounting information systems on modifying the relationship. The non-quantitative descriptive variables were studied and analyzed through a questionnaire and converted into measurable quantitative variables, with the aim of reaching an accurate selection of hypotheses, and thus stating the results and recommendations of the study.

The Study Community and Sample

The study population consisted of financial managers working and accountants in the accounting departments of industrial companies in the northern region, which number 157 industrial companies, according to the website of the Industrial Cities Corporation (2021), in addition to the external auditors. The study sample was chosen randomly, as it numbered (152) financial managers and accountants working in industrial companies operating in the northern region, in addition to independent auditors working in auditing offices. Table 1 shows the distribution of sample members according to personal variables.

Table 1. Distribution of the sample members according to personal variables

Variable	Level	Frequencies	%
Job	Financial Manager	12	7.9
	Accountant	81	53.3
	independent auditor	59	38.8
	Total	152	100.0
Qualification	Higher Diploma	12	7.9
	BA	113	74.3
	Master's	24	15.8
	PhD	3	2.0
	Total	152	100.0
Experience	less than 5 years	69	45.4
	From 5 years - less than 10 years	56	36.8
	From 10 years - under 15 years	21	13.8
	15 years and over	6	3.9
	Total	152	100.0
Specialization	accounting	84	55.3
	Business	23	15.1
	Administration		
	Banking and Finance	26	17.1
	Economy	19	12.5
	Total	152	100.0

The researchers believe that the reason for the high percentage of bachelor's degrees is that most financial and accounting jobs need employees with professional accounting qualifications who are able to deal with the accounting system according to the nature of their work. This could explain the high percentage of experience (less than 5 years) due to the high rates of job turnover in industrial companies; In addition to the nature of the polarization policies in industrial companies, which are trying to attract new graduates to work in accounting departments, because they accept lower salaries, which leads to a reduction in costs.

Data Collection Sources

The study relied on collecting the necessary information and data for the study on books and periodicals related to the subject of the study, in addition to the information available on the subject and available on the approved websites on the Internet. The researchers developed a questionnaire related to the subject of the study, based on the theoretical framework of this study.

Reliability of the Study Instrument

The questionnaire was presented to a number of professors of official Jordanian universities among those with experience and expertise in the subject of the study for arbitration, and the amendment was made according to their opinions. And extracting the coefficient (Cronbach's alpha) for the internal consistency for all areas of the study tool, as the values of the stability coefficients (Cronbach's alpha) for the dimensions and fields of study ranged between (0.706-0.865), all of which are acceptable values for application purposes as well; Al-Najjar and Al-Zoubi indicated, (2013, p. 151). The stability coefficient of acceptance is (0.70).

Normal Distribution Test

According to the values of the Shapiro-Wilk test and the value of the level of significance accompanying it, which was conducted on the study data, it was found that the test value for

all study variables ranged between (0.81-1.23) and this indicates that the study follows a normal distribution.

Linear Duplication Test

It was found from the results of the linear duplication test between the study variables that the study model is free from the problem of linear duplication between the variables, as the values of the coefficient of variation inflation were appropriate as it ranged between (1.33 and 2.26) which is less than (5). (0.44-0.79) has met the acceptance criterion that its value is greater than (0.1).

Hypothesis Testing and Discussion

Discussing the results related to the first main hypothesis: There is no statistically significant impact at the level of statistical significance ($\alpha \leq 0.05$) on the relationship between quality of accounting information and the financial stumbling in industrial companies in the northern region. To verify the validity of this hypothesis, the multiple regression equation was applied as shown in Table 2.

Table 2. Multiple regression equation to study the impact of quality of accounting information on the financial stumbling in industrial companies in the Northern Territory

On the financial statements in industrial companies in the Northern Territory										
Sig	F	Adjusted R Square	R ²	R	Standardized transactions		Non-standard transactions		Variable	
					Sig	T	Beta	Std. Error		B
					0.000	12.498		0.210	2.620	Constant
0.000	33.429	0.300	0.310	0.557	0.000	5.038	0.758	0.119	0.600	Basic characteristics
					0.000	7.408	1.114	0.122	0.905	Enhanced characteristics

Table 2 shows that there is a statistically significant impact at the significance level ($\alpha \leq 0.05$) of the quality of accounting information on the financial stumbling in industrial companies in the northern region, as the value of the correlation coefficient (R) reached (0.557), which is a statistically significant value and indicates the degree of Statistically significant correlation between quality of accounting information and financial stumbling, and the value of (R-square) was (0.310), which is a statistically significant value, meaning that quality of accounting information explains what its value (31.0%) of the change in the financial stumbling in industrial companies, and the value of the test (F) (33.429) with statistical significance (0.00), which indicates that there is a discrepancy in the influence of the independent variables on the dependent variable, and based on the above, the first main hypothesis is accepted by the alternative formula, which states: "There is a statistically significant impact at the level of significance ($\alpha \leq 0.05$) for the quality of accounting information on the financial stumbling in industrial firms in the northern region".

Results related to the second main hypothesis Basic characteristics (information fitness and honest representation): There is no statistically significant impact at the level of statistical significance ($\alpha \leq 0.05$). To verify the validity of this hypothesis, the simple regression equation was applied as shown in Table 3.

Table 3. Simple regression to study the impact of basic characteristics (appropriateness of information and honest representation) in industrial companies in the northern region

Information and honest representation) in industrial companies in the northern region										
Sig	F	Adjusted R Square	R ²	R	Standardized transactions		Non-standard transactions		Variable	
					Sig	T	Beta	Std. Error	B	
					0.000	16.328		0.210	3.423	Constant
0.009	7.017	0.038	0.045	0.211	0.009	2.649	0.211	0.061	0.163	Appropriateness of accounting information
					0.000	15.337		0.215	3.297	Constant
0.002	10.229	0.058	0.064	0.253	0.002	3.198	0.253	0.061	0.195	Validating representation of accounting information

Table 3 shows that there is a statistically significant impact at the significance level ($\alpha \leq 0.05$) of the appropriateness of accounting information on the financial stumbling in industrial companies in northern region. The value of the correlation coefficient (R) is (0.211), which is a statistically significant value that indicates the degree of Statistically significant correlation between the appropriateness of accounting information and financial stumbling, and the value of (R-square) was (0.045), which is a statistically significant value, meaning that the basic characteristics explain its value (4.5%) of the change in the financial stumbling in industrial companies, and the test value was (F) (7.017) with statistical significance (0.007), and based on the above, the second main hypothesis (honest representation) is accepted in the alternative formula, which states "There is a statistically significant impact at the level of statistical significance ($\alpha \leq 0.05$) on the relationship between the appropriateness of accounting information and the financial stumbling in industrial firms".

Table 3 shows that there is a statistically significant impact at the significance level ($\alpha \leq 0.05$) for the honest representation of accounting information on the financial stumbling in industrial companies in the northern region, as the value of the correlation coefficient (R) reached (0.253), which is a statistically significant value that indicates The degree of statistically significant correlation between the honest representation of accounting information and financial stumbling, and the value of (R-square) is (0.064), which is a statistically significant value, meaning that the basic characteristics explain its value (6.4%) of the change in the financial stumbling in industrial companies, and the value of Test (F) (10.229) with statistical significance (0.007), and based on the above, the second main hypothesis accepted the honest representation by the alternative formula, which states "There is a statistically significant impact at the level of statistical significance ($\alpha \leq 0.05$) on the relationship between the honest representation of accounting information and the financial stumbling in industrial companies".

The interpretation of this result is that the accounting profession depends mainly on the basic qualitative characteristics of accounting information in achieving quality of accounting information, gaining public confidence and achieving the objectives of the accounting department in the company by providing financial services to all parties related to accounting information, which positively affects the financial stumble.

Results of the third hypothesis: There is no statistically significant impact at the level of statistical significance ($\alpha \leq 0.05$) on the relationship between the enhancing properties of accounting information (comparability, verifiability, understandability, and appropriate timing) and the financial stumbling in industrial companies. To verify the validity of this hypothesis, the multiple regression equation was applied, as shown in Table 4.

Table 4. Multiple regressions to study the impact of enhanced characteristics on the financial stumbling of industrial firms in the northern region

Sig	F	Adjusted R Square	R ²	R	Standardized transactions			Non-standard transactions		Variable
					Sig	T	Beta	Std. Error	B	
0.000	51.205	0.571	0.582	0.763	0.000	7.470		0.194	1.453	constant
					0.838	0.205	0.037	0.130	0.027	comparison
					0.321	0.995	0.152	0.108	0.108	understandable
					0.934	0.084	0.014	0.120	0.010	the right time
					0.000	12.827	0.865	0.061	0.778	verifiability

Table (3) shows that there is a statistically significant impact at the significance level ($\alpha \leq 0.05$) of the enhancing properties of accounting information on the financial stumbling in industrial companies in the northern region. The value of the correlation coefficient (R) is (0.763), which is a statistically significant value that indicates that The degree of statistically significant correlation between the enhancing characteristics and financial distress. The value of (R-square) was (0.582), which is a statistically significant value, meaning that the enhanced characteristics explain its value (58.2%) of the change in the financial stumbling in industrial companies, and the test value was (F) (51.205) with a statistical significance of (0.007). , which indicates that there is a discrepancy in the impact of the independent variables on the dependent variable, and based on the above, the second sub-hypothesis is accepted in the alternative formula, which states “There is a statistically significant impact at the significance level ($\alpha \leq 0.05$) for the enhanced characteristics on the financial stumbling in industrial companies in northern region”.

The researchers believe that this result is due to the importance of the enhanced characteristics and their usefulness in decision-making, given the existence of a close relationship between accounting information and the goal of its production, that is, the ability of information to help the main external beneficiaries, who own part of the property rights in the company, to make decisions related to maintaining the current relationship company or change it.

Results of the fourth main hypothesis: There is no statistically significant impact at the level of statistical significance ($\alpha \leq 0.05$) for the impact of modified accounting information systems on the relationship between quality of accounting information and the financial stumbling of industrial companies. To verify the validity of the second main hypothesis, a hierarchical regression test was applied, and the results is available in Table 5.

Table (4): Results of the hierarchical regression analysis for the second main hypothesis

Second Model			First Model			Variable	Dependent variable
Sig T	Calculate d T	B	Sig T	Calculate d T	B		
0.000	4.259	0.472	0.000	5.038	0.758	Basic characteristics	financial stumbling
0.017	2.408	0.308	0.000	7.408	1.114	Enhanced characteristics	
0.000	11.852	0.810				Accounting Information Systems	
0.804			0.557			R	
0.646			0.310			R ²	
0.336			0.310			ΔR^2	
140.466			33.429			ΔF	
0.000			0.000			Sig ΔF	

* Statistically significant at the level of significance ($\alpha \leq 0.05$)

It is clear from the results of Table No. (4) that the hierarchical regression is based on two models, where the results of the first model represented the impact of quality of accounting information on the financial stumbling in industrial companies in the northern region, as it was found that there is a statistically significant impact of the quality of accounting information combined in financial stumbling, as the value of ΔF was (33.429) at a significant level (Sig $\Delta F=0.000$), which is less than 0.05. The value of the coefficient of determination R^2 , which amounted to (0.310) indicated that the percentage of (31.0%) of the change in the financial stumbling can be justified through the dimensions of quality of accounting information combined.

In the second model, the modified variable (accounting information systems) was added to the regression model, where the value of the coefficient of determination R^2 increased by (33.6%), which is statistically significant, as the value of ΔF reached (140.466) at a significant level (Sig $\Delta F = 0.000$). which is less than 0.05. While the value of the B coefficient at the dimension (accounting information systems) was (0.810), and at a significant level (SigT = 0.000), which indicates the presence of the moral impact of accounting information systems in improving the relationship between quality of accounting information and the financial stumbling in industrial companies in the northern region.

Based on the foregoing results in Table (20), the second main null hypothesis is rejected, and the alternative hypothesis is accepted, which states: "There is a statistically significant impact at the significance level ($\alpha \leq 0.05$) of accounting information systems in improving the relationship between quality of accounting information and the financial stumbling in industrial companies in the Northern Territory.

The researchers believe that this result is due to the fact that accounting information systems contribute to reaching honest predictions about the expected results in the future, or enhancing or correcting his current expectations, and that this information gives strong indicators about the future in natural conditions. Whenever these indicators are strong and close to reality, they allow their users monitoring future performance, knowing deviations, their locations and causes, and resolving them, which will positively reflect on financial stumbling.

Findings and Recommendations

Based on the field study carried out by the two researchers, the modified impact of accounting information systems on the relationship between quality of accounting information and the financial stumbling in industrial companies in the northern region. After analyzing its data, answering its questions, and testing its hypotheses, this study concluded a set of results. It recommended a set of recommendations, which were as follows:

Results

After conducting a statistical analysis of the study sample's estimates of the tool, the following was found: (1) There is a statistically significant impact at the significance level ($\alpha \leq 0.05$) of the quality of accounting information on the financial stumbling in industrial companies in the northern region. (2) There is a statistically significant impact at the significance level ($\alpha \leq 0.05$) of the basic characteristics on the financial stumbling in industrial companies in the northern region. (3) There is a statistically significant impact at the significance level ($\alpha \leq 0.05$) of the enhancing characteristics on the financial stumbling in industrial companies in the northern region. (4) There is a statistically significant impact at the significance level ($\alpha \leq 0.05$) of accounting information systems in improving the relationship between quality of accounting information and the financial stumbling in industrial companies in the northern region. (5) There are no statistically significant differences at the level of statistical significance ($\alpha < 0.05$) in the opinions of the study sample members about the quality of accounting information according to the demographic characteristics of the sample

(experience, field of work, size of the industrial establishment, educational level of individuals). (6) There are no statistically significant differences at the level of statistical significance ($\alpha < 0.05$) in the opinions of the study sample members about accounting information systems according to the demographic characteristics of the sample (experience, field of work, size of the industrial establishment, educational level of individuals).

Recommendations

Based on the foregoing results, the study recommends the following: (1) The necessity for the management of industrial companies in the northern region to be keen to provide financial information of high quality and predictive value on a regular basis through the use of systems in an efficient manner. (2) The necessity for the industrial companies in the northern region to be interested in using advanced accounting information systems, with keenness to rehabilitate the human elements working on them well and taking into account the principle of benefit versus cost. (3) It is necessary to analyze the accounting information periodically to monitor any signs of stumbling and to immunize the facility from them early to ensure the development of stumbling and reaching the stage of financial failure and threatening the continuity of the facility. (4) The need for the accounting departments of industrial companies in the northern region to be concerned with classifying and presenting accounting information in financial reports in a clear, accurate and consistent manner that is understandable by the largest group of potential beneficiaries. (5) Conducting more future studies that deal with the modified impact of accounting information systems on the relationship between quality of accounting information and the financial stumbling in other business sectors, or the introduction of other variables that would add interest to this research field. (6) Encouraging users of accounting information systems to join specialized training courses in the field of information technology and its uses at work. (7) Encouraging accountants, financial managers and other users of accounting information systems to join specialized training courses in financial analysis and its uses at work.

References

- Abdullah, Ahmed Hassan (2015). The effect of using innovative accounting in accounting systems on the quality of accounting information for Jordanian commercial banks, Master's thesis, Jadara University, Jordan.
- Abrikan. (2020). The importance of analyzing cash flows and their role in predicting the financial stumbling of institutions during the period (2014-2017) - a study of a sample of institutions active in the construction and public works sector-
- Abu Nassar, Muhammad and Humaidat, Juma. (2019). International Accounting and Financial Reporting Standards - Theoretical and Scientific Aspects, Amman: Wael Publishing House.
- Abu Qiba, Ibrahim Ali and Al Futimi, Muhammad Miftah. (2017). The risks of using electronic accounting information systems: a field study on commercial banks in the Misurata municipality. Journal of Economics and Business Studies, Volume (5), Special Issue, (2017)
- Abu Howeidi, Nihad Ishaq Abdel Salam. (2011). The Role of Accounting Information in Rationalizing Capital Expenditure Decisions - An Applied Study on Companies Listed in the Palestine Stock Exchange, Master's Thesis in Accounting and Finance, Department of Accounting and Finance, College of Commerce, Islamic University of Gaza, Palestine.
- Ahmed Qaid Nouredine-Hilali Islam. (2019). The role of the accounting information system in improving the quality of accounting information in the economic institution, Journal of Economics and Business, First Edition, Mohamed Khider University of Biskra, Algeria.

- Al-Hisban, Atallah Ahmed (2020). Accounting Information Systems, 2nd floor, Amman, Jordan: Dar Al Yazouri Scientific, pg. 87 + 88 + 89.
- Al-Ramahi, Muhammad and Qasim, Ziyad (2011). Accounting Information Systems, Amman, Jordan: Dar Al Masirah for Publishing and Distribution.
- Al-Zubaidi, Hamza. (2011). Financial analysis for the purposes of performance evaluation to predict financial failure, Iraq. 307 p
- Asaws Moussa, Ait Mohamed Mourad. (2018). Forecasting the financial stumbling in public economic institutions, Journal of the University of Algiers.
- Ashour, Ehab and Bassiouni, Haitham. (2021). Study and analysis of the relationship between the internal control system in light of the COVID-19 pandemic and the financial performance of companies (an applied study on companies listed on the Egyptian Stock Exchange) - Journal of Financial Research, p (2).
- Bani Omar, Sharaf Mahmoud (2014). The impact of integrated accounting information systems on the quality of accounting information in Jordanian commercial banks, Master's thesis, Sudan University of Science and Technology, Sudan.
- Boukendoura, Houria. (2017). Accounting information and its impact on the decisions of users of financial statements An applied study of the Sidi Arghis Mill Corporation - Oum El Bouaghi - Master's thesis, University of Algiers.
- Boumsbah, Safia and Balajouz, Hussein. (2018). The relationship between the qualitative characteristics of accounting information and the financial performance of institutions, a study of a sample of institutions in the state of Bordj Bou Arreridj, Journal of Research in Accounting and Finance, p (5), State of Algeria.
- El-Sakka, Ziad. (2011). Accounting Information Systems, 2nd floor, Amman, Jordan: Dar Tariq.
- Fasih, Rania (2019). The use of prediction models for the financial stumbling in economic institutions Case study of Sonarik and its subsidiary Cérille Constantine for the period (2014-2017), Master's thesis, University Center Abdelhafid Boulasouf Mila, Algeria.
- Posta Hazem, Rmaisa (2017). Forecasting the financial stumbling using indicators of financial analysis A case study of a group of Algerian small and medium enterprises during the period (2009-2014), PhD thesis, University of Ghardaia, Algeria.
- Tjaniya Muhammad, Al-Absi, Fatima. (2021). The role of operational cash flow metrics in evaluating financial performance: A case study of the Biopharm Pharmaceutical Company in Algeria for the period (2015-2018), Journal of Strategy and Development, p. (11), State of Algeria.
- Triki, Layla (2015). Measuring financial performance and predicting failure, a case study of the Ben Hammadi Mill Corporation in Bordj Bou Arreridj, 2011-2013, Master's thesis, Mohamed Boudiaf University, Algeria.
- Inventory, Abdul Rahman Al-Taher. (2021). Evaluating the role of accounting information systems in reducing banking risks in light of the decisions of the Basel Committee. Al-Qirtas Journal for Humanities and Applied Sciences, 8:385-408.
- Hammad, Magda Ezzat Hussein. (2021). The relationship between the use of big data technology and the financial performance of companies in the context of the modified effect of the quality of the accounting information system An applied study on companies listed on the Egyptian Stock Exchange, Journal of Accounting and Auditing of the Association of Arab Universities, p(1), 377-426.
- Hejab, Ahmed. (2020). The impact of the application of fair value accounting on the quality of accounting information, a field study, Hamad University, Boudiaf M'sila, Algeria.
- Hussein, Laith. (2021). Analysis and design of information systems, approaches and methodologies. Tools and techniques, 1st floor, Amman: Dar Al-Akadyoun for Publishing and Distribution.

- He praised. (2017). The role of the qualitative characteristics of accounting information in banking risk management, a field study on a sample of commercial banks operating in Sudan.
- Khawald, Dahmani. (2015). The contribution of the analysis of the financial statements to predict the financial stumbling of the institution, a field study - Marmoura Mills Corporation "Qalma" for the period (2014-2015-
- Khayyat, Marwan and Kaikh Ali, Hussein. (2013). The impact of accounting information on the effectiveness of liquidity risk management: a field study in the industrial bank in Syria. Rafidain Development Journal, Volume (35) (2013)
- Rihan, Sharif, Publication of the Efficiency and Efficiency of Quantitative Models for Predicting Bankruptcy, Journal of Human Sciences, Jordan.
- Shalali Naima, and Khelifi Sumaya. (2017). quality of accounting information and its role in making investment decisions. Research presented to the first national scientific forum on accounting and auditing as a pillar to improve investment in Algerian institutions, Medea Algeria.
- Soleimani, Intisar (2016). Forecasting the financial stumbling in economic institutions. Adapting models to the peculiarities of the Algerian environment. Thesis submitted for obtaining a PhD in Economic Sciences, Division of Financial Economics, PhD thesis, Faculty of Economics, Commercial and Management Sciences, University of Batna, Algeria.
- Twirat, Rabeh. (2014). The relationship of accounting information to the level of disclosure in the financial statements, Master's thesis in commercial sciences, Faculty of Economics, Commercial and Management Sciences, University of Mohamed Boudiaf, M'Sila, Algeria.
- Omirat. (2018). The impact of the accounting information system on the quality of external audit "A field study of a sample of account keepers and accountants in the Wilayat of Ouargla 20.
- Qassem Al-Hebt. (2009). Using financial analysis models to test the imposition of corporate continuity, Al-Rafidain Development Journal, p. 64. 1
- Qureshi, Khair Eddin (2012). The role of accounting information disclosed according to the financial accounting system (SCF) in predicting the risk of bankruptcy, Master's thesis, Kasdi Merbah University, Algeria.
- Qusoum Hanan. (2016). The impact of accounting disclosure on the quality of financial statements in light of the application of international financial reporting standards, unpublished Ph.D. thesis, Setif University, Algeria.

Corporate Social Responsibility and ARAMCO, As a tool of Sustainability for Vision 2030

Syeda Taj Unnisa^{1,2}

School of Management, Universiti Sains Malaysia, Malaysia¹

College of Business Administration, King Saud University, Riyadh, Saudi Arabia²

Corresponding author: staj@ksu.edu.sa

Abstract

Saudi Arabia is one among the rapid growing economic powers, It has arose as a leading country in adopting and integrating CSR activities. This study examines Saudi Aramco's on the CSR front, the industry's largest oil exporter. Efforts have been made through the use of secondary data to capture the drivers and modus operandum used by the organization for its commitment towards sustainability. The aim of the organisation is to be globally foremost unified energy and chemicals company, functioning in a safe, sustainable and consistent way. Corporate entity openness and moral behaviour is the focus of Aramco's CSR guidelines. Aramco's CSR principles include achieving long-term progress and adhering to local and international laws. The CSR strategy is imbibed into the company's business strategy, which is founded on three theoretical pillars of sustainable development: climate change, environmental impact reduction, and corporate citizenship. Later in the paper Armco initiatives in line with Saudi Vision 2030 based on vibrant society, thriving economy and ambitious nation have been reviewed.

Keywords: Aramco; corporate social responsibility; climate change; minimizing environment impact; responsible business.

Introduction

CSR entails addressing issues such as human rights, workplace and worker issues, as well as occupational fitness and safety, to name a few. CSR has always been first-rate and has had a long-term impact on commercial organisations, and it is gaining importance all over the world, particularly during these epidemic times. Enterprises shape attitudes about CSR by involving society and putting a special emphasis on outdoor events.

These may include illustrating the dangers posed by various difficulties faced by this fast-changing environment, as well as giving potential solutions in which businesses become partners (Wickert et al., 2021). Professional practitioners have a fair idea and a futuristic perspective of how sustainable commercial organisations operate and act, and they bring in new ideas and technologies to produce a win-win situation. Finding a middle solution and sustaining the commercial model of enterprise makes it a challenging task whether it be decision on philanthropy or environmental control or donations in any form. Being outside the organizations and involvement of corporations in finding out solutions to problems of 21st century has taken a real toll on many established and new enterprises.

There is wide and deep interest of organizations in KSA regarding CSR, many of the enterprises have taken the cognizance of same and made it central to their commercial business model. Many organizations within the area of CSR have made it an associated activity to serve community as a whole in building trust, network development, worker recruitment and retention and progressed in monetary terms, overall performance even without considering it under the cornucopia of CSR. The majority of CSR-related initiatives in Saudi Arabia are centred on providing job opportunities for youngsters, encouraging entrepreneurship, anti-

smoking campaigns, scientific aid packages, literacy and training programmes, and education for the physically impaired. Several studies reveal that, as a result of stakeholder demand, CSR (Corporate Social Responsibility) is now becoming a key topic in all disciplines and company management. Internal and external causes and restrictions must be identified as a first stage in a company's socially responsible implementation. The purpose of the research is to determine and explore the drivers and restraints of CSR in Saudi Arabia's non-governmental organisations. Professional Civic Responsibility (CSR) is a term that has various definitions and no defined bounds, and it has long been a part of educational and corporate vernacular (Dahlsrud, 2008). Its inherent benefits are very well, not just for their impact on financial overall performance, but also for reducing environmental consequences, increasing employee health, and strengthening a company's image and competitive posture (Crane et al., 2019; Carroll & Shabana, 2010; Orlitzky et al., 2003). Many strategic interventions have a range of interpretations for CSR, such as the firm's participation in social initiatives that can bring long-term advantages for the system of an organization, as well as having an influence on their actual and projected stakeholders (Weber, 2008; Yin, 2017). Another proponent of this viewpoint claims that, in order to maintain long-term viability, organisations should incorporate environmental risks into their SR (Social Responsibility) sports and planning work, which has been identified as a non-smooth strategy for businesses (Campbell, 2007). According to Razak (2015), the concept of corporate social responsibility (CSR) is still relatively new in Saudi Arabia (KSA) relative to its wide impact, and there isn't always such a clear understanding of the concept, practises, and execution. In Saudi Arabia, corporate social responsibility (CSR) has traditionally been regarded as a benevolent endeavour (Maqbool, 2015). Organizations are not incorporating CSR into business strategy due to the lack of awareness and attempts to achieve the overall goal.

Organizations must understand what motivates them and what challenges they face while implementing CSR initiatives. According to numerous research, the first step for CSR adoption is to identify internal and external reasons and boundaries (Aloitaibi et al., 2019; Al-Abdin et al., 2018). Business and society are linked and interconnected spheres. Social responsibility is a source of social progress, and it's a method for groups to become more liable as international residents and neighbours in today's global and evolving world (Shyam, 2016). CSR appears to have been a component of academic and business jargon for decades, and the literature study revealed a variety of CSR definitions, each seeking to highlight distinct features of the idea and its evolution over time. The origins of corporate social responsibility can be traced all the way back to the beginning of human evolution.

According to Blowfield and Frynas (2008), different definitions of CSR can be found in the literature, but they all share comparable ideas. The European Commission's definition, for example, states that organisations should interact with their stakeholder groups in a volunteer framework that incorporates sustainability practices in their interactions with infomercial venture operations and reinforces environmental concerns; however, each definition fraction the view that institutions have a duty to the parties involved. According to a survey of Spanish firms conducted by Agudo Valiente et al. (2017), CSR obstacles and drivers may be divided into those that are impacted by management's moral views and those that are not. Subjectively and objectively, they are split accordingly. Stakeholder engagement, institutional arrangements, and reputation management are the most frequently reported objective motivations by management, whereas sustainable development and ethical incorporation in a firm's day-to-day activities are the most frequently cited subjective drivers. The theory is put into practise. Managers are subjectively conscious of philanthropy, charitable work, and public relations when it comes to hurdles. Objective CSR hurdles, but at the other hand, include a lack of cash, human capital, and the time required to execute CSR. We also discovered that CSR varies depending on the company's size and sector. Because the notion of CSR is restricted and firms tend to face more hurdles, small company owners are less inclined to partake in CSR than large corporations (Barnett et al., 2020). The fact that major

business owners are more aware of CSR might explain their stronger commitment to CSR. Wallis and colleagues (2017) We discovered that developed-country corporations are more conscious of popular pressure on CSR policies than developing-country enterprises. This shows that individuals in underdeveloped nations lack knowledge and require information and awareness-raising initiatives centred on environmental protection. Due to the availability of numerous providers for CSR management, the most commonly reported difficulties in Europe CSR surveys were a shortage of suppliers, talent, and power to suppliers. Excellent staff, expertise, experience, and/or authority appear to be barriers that cause low priority (Arlbjørn et al., 2008). In a 2009 report titled "What Do Arab Global Leaders Think About CSR," the Environmental Advisory Group listed the following obstacles to CSR implementation. Other goals that are currently being pursued were also mentioned as potential barriers. The biggest hurdles to CSR implementation, according to the conclusions of a study done in 2009 to examine the state of CSR in the UAE, are a lack of CSR understanding and information, as well as the inability to modify the CSR function. The next two significant hurdles are a lack of finances and the idea that CSR projects come at a high cost. Lack of government support, top management commitment, ambiguous CSR outcomes, time restrictions, and employee resistance to CSR implementation are all obstacles to CSR adoption (Dubai Chamber, 2009). Additional costs, a lack of research and understanding, a lack of controls and clear policy, a lack of stakeholder exchange of information, a lack of law enforcement, inadequate training, and unclear project requirements were identified as seven barriers to CSR in Saudi Arabia by Aloitabi et al. (2019). Several main obstacles faced by Indian organisations, according to Arevalo and Aravind (2011), include a lack of resources for CSR education, problems implementing CSR, and an insufficient support and experience from top management. It was very difficult to procure. Information about the practise and implementation of corporate social responsibility (CSR). Shen et al. identified 12 barriers to CSR, including a lack of stakeholder understanding, inadequate training, inadequate data, a lack of funding, a lack of consumer awareness, a lack of brand value, a lack of competence, regulation, and norms (2015). Diversity, organisational culture, control measure, and managerial support are all lacking. Financial restrictions, followed by customer knowledge, a lack of regulatory requirements, and a lack of top management support, are the key challenges to CSR implementation in India's textile business, according to the findings of their empirical studies. Is displayed. The most frequent author in underdeveloped countries, according to CSR. Vimala and Suresh (2017) discovered that different countries understand CSR execution differently in a study of CSR drivers and impediments in industrialized and developing economies.

Research Method

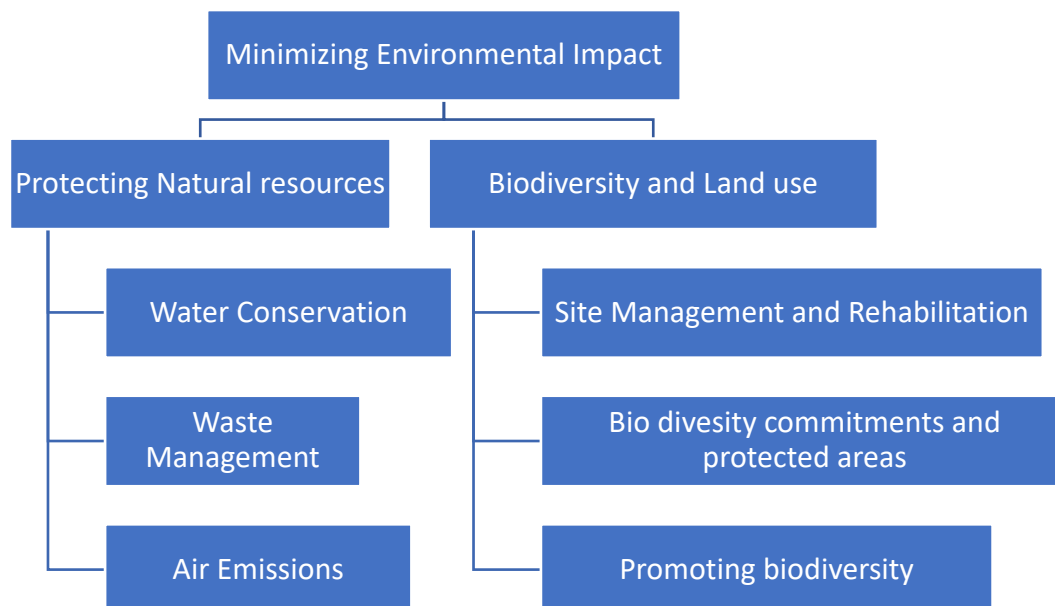
This study examined secondary research to understand the critical areas on which ARAMCO is focusing to achieve its goal of sustainability. This paper's summary and analysis were gathered from different sources from websites, periodicals, newspapers, and released documents, among other sources. The goal of this research is to determine the strategy used for CSR deployment at the corporate level, particularly in Aramco. This research explains the topics and themes on which the organization's CSR initiatives are built. The 3 primary focal areas were individually studied and analysed in order to draw acceptable findings.

Analysis

The focus of Aramco as has been on promoting sustainability whether it comes to their business or commercial business model. It has been deeply ingrained in their business processes at all levels, Sustainability initiatives are critical to Aramco's results of this case and to its position as one of the world's major unified energy and materials corporations even during global energy crisis. The term of "sustainability" gives context to Aramco's interaction with its stakeholders. It enables Aramco to assess how social and environment challenges affect its operations and is a strategic driver.

As Aramco strives to strike a balance between income, environmental conservation, and the wealth and jobs of the communities where it operates, sustainability concerns have become increasingly important. They understand the magnitude and severity of the climate crisis. Organization is using our one-of-a-kind platform to help with the decarbonisation, with the goal of achieving gross Building the brand image and Scope 2 carbon emissions across all our fully owned and operated facilities by 2050. This is in line with Saudi Arabia's goal of achieving carbon intensity by 2060. The focus of organizations CSR or sustainability theme has been around three cores: climate change, minimizing environmental impact, and responsible business (aramco.com).

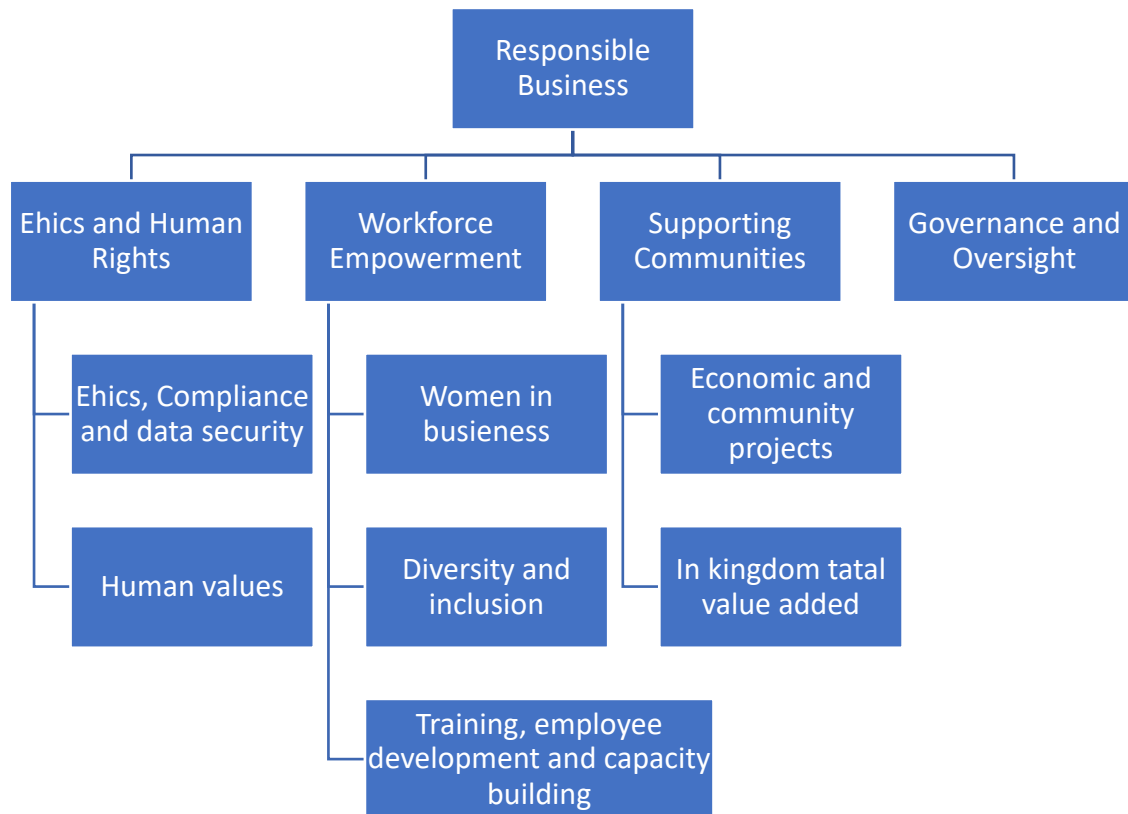
As some, the concept of an energy company helping to solve the climate problem appears to be a contradiction. No, they don't believe so. Humans are uniquely positioned to contribute to the overall approach as a global leader in the energy industry. We agree with the Paris Agreement's goal of keeping global average temperature rise under 2°C above which was before levels. Cutting pollution to combat climate change while fulfilling global energy demands is the century's most pressing challenge. By 2050, they want all of our fully owned and operated assets to have net-zero Building the brand image and Scope 2 greenhouse gases. Safeguarding and protecting biodiversity while keeping our promise to produce energy and chemical goods that are safe and effective.



Source: <https://www.aramco.com/en/investors/environmental-social-and-governance>

Environmental protection has been a key component of their approach from our beginning as an oil company operating in a desert country. They've been a pioneer in studying ways to reduce our activities' environmental impact for more than seven decades, from groundwater recharge and waste recycling to emission control technology and conserving the Kingdom's unique ecosystem's biodiversity. Sustainable design is a high priority at the Senior Leadership and Board levels. They have solid processes, procedures, processes, and oversight in place to maximize our commitment to the environment, allowing us to program will enhance to measure progress across the business while aligning sustainability projects to our corporate objectives. Ecological commitments are driven by our Environmental Quality Policy and supported by a sustainability policy that is compliant with the EPA's environmental standards. Erm framework gives all relevant Aramco organisations a platform to actively pursue approach to: I achieve and maintain ecologic compliance with all applicable compliance obligations, such as regional and global treaty obligations, government environmental legislation, and

company standards, (ii) systematically improve the environmental effectiveness, and (iii) continuous improvement.



Source: <https://www.aramco.com/en/investors/environmental-social-and-governance/social-responsibility>

They make every attempt at Aramco to become a responsible corporate citizen. As customer requirements change, they strive to meet fresh and innovative difficulties as they arise. From fully promoting female education, mentoring, and work-life stability through guidelines, on-site creche, and mentors to providing mental health and well-being measures to our employees, which include support for females in governance, to driving traffic safety changes across the Empire, we aim to be a favourable agent of change, treated with respect by our interested parties for the completion of the work so far and our plans for the future.

The basis of being a sensible company is having a healthful, safe, and engaged workforce with meaningful and rewarding roles and also discussing these problems with our suppliers, joint ventures, partners, and 3rd party providers. They are also working hard to guarantee that our ideals and working conditions are engrained across our distribution chain. Our socially responsible company commitments. The top concern is the wellness and safety of the employees, suppliers, and communities. They are committed to enhancing our workforce's diversification, equity, and inclusion. Collaborating with our vendors to ensure responsible practices and a long-term supply chain. Wherever they operate, company respects fundamental rights and safety of our communities. Through more participation and openness, organization is boosting the accessibility of company firm's performance.

Conclusion

The goal of this report was to evaluate and understand Aramco's effectiveness from a CSR standpoint. The analysis and findings suggest that enhanced company identity, ethical / moral engagement, and some level of customer demands and risk management are the primary reasons for Aramco to adopt CSR. One of Saudi Aramco's key philosophies since its inception has been to better the areas in which it operates through a variety of CSR - related projects and activities. Employees and work environment are critical to the organization's growth. The business spends in its employees and has a multitude of training programs in place. Saudi Aramco works hard to attract, develop, and maintain a diverse team, and uses a variety of tactics and programmes to do so. In the Kingdom and beyond, the Company values individuals of various backgrounds, genders, talents, races, and ethnicities. Across its lines of business and geographies, the Company has been working difficult to recruit and multiple and high-calibre personnel. Saudi Aramco participates in early outreach activities with select in-Kingdom institutions, colleges, and high schools in order to establish a pipeline of the finest and brightest talent. Company personnel assist students in preparing for their prospects and beginning to evaluate career prospects with the Company through these programmes. Despite the fact that CSR is new to many industries and sectors, its ability to transform is evident in sectors and organisations all over the world. CSR clearly has the ability to advance the strategic objectives of all industries. However, new obstacles and constraints arise as a result of the adoption and implementation CSR aims and agendas. Ever since beginning, 2030 agenda has prioritised sustainability. KSA is entering into a new age, with the goal of achieving Net Neutral by 2060. The declaration is in keeping with Plan 2030's broader goals of accelerating the energy revolution, achieving sustainability targets, and spurring new investment. Saudi Arabia has long been a major player in the international energy industry, contributing to global economic progress. Vision 2030 is a long-term vision for Riyadh Arabia's destiny, putting sustainability at the centre of everything the country does, from policy development through investment to building and infrastructure. Masterplan 2030 inspires by solving today's energy security concerns in an unique and responsible manner. There are many critical CSR concerns: which organisation leaders are aware of and very smartly they have been knitted with KSA vision 2030 to given them new direction. Organizations might benefit from area-focused research to generate confidence and momentum. To begin with, CSR-induced changes in organisational economics and cross - functional and cross processes can provide direction to organisations while also supporting customer interests. Second, well-researched policies, methods, and models resulting from the successful deployment of CSR can aid in the implementation of appropriate changes in businesses and the timely resolution of difficulties. Third, knowing and tracking the skills and personnel requirements needed to enable effective CSR adoption can help with human resource planning in the future. Change that is poorly planned or handled always has major consequences for organisations.

References

- Agudo-Valiente, J., Ayerbe, C., & Salvador, M. (2017). Corporate Social Responsibility Drivers and Barriers According to Managers' Perception; Evidence from Spanish Firms. *Sustainability*, 9(10), 1821. <https://doi.org/10.3390/su9101821>
- Al-Abdin, A., Roy, T., & Nicholson, D. (2018). Researching corporate social responsibility in the Middle East: the current state and future directions. *Corporate Social Responsibility and Environmental Management*, 25, 47-65. <https://doi.org/10.1002/csr.1439>
- Alotaibi, A., Edum-Fotwe, F., & Price Andrew, F. (2019). Critical Barriers to Social Responsibility Implementation within Mega-Construction Projects: The Case of the Kingdom of Saudi Arabia. *Sustainability*, 11, 1755. <https://doi.org/10.3390/su11061755>

- Arevalo, A., & Aravind, D. (2011). Corporate social responsibility practices in India: Approach, drivers, and barriers. *Corporate Governance International Journal of Business in Society*, 11(4), 399-414. <https://doi.org/10.1108/14720701111159244>
- Arlbjorn, J. S., Warming-Rasmussen, B., Liempd, D. V., & Mikkelsen, O. S. (2008). A European Survey on Corporate Social Responsibility. White paper, University of South Denmark, Kolding, Department of Entrepreneurship and Relationship Management.
- Barnett, M. L., Henriques, I. and Husted, B. W. (2020). 'Beyond good intentions: Designing CSR initiatives for greater social impact'. *Journal of Management*, 46, 937– 64.
- Blowfield, M., & Frynas, J. (2005). Editorial Setting new agendas: critical perspectives. *Corporate Social Responsibility in the developing world*. *International Affairs*, 81, 499-513. <https://doi.org/10.1111/j.1468-2346.2005.00465.x>
- Campbell, L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Journal*, 32, 946-967.
- Carroll, A., & Shabana, K. (2010). The Business Case for Corporate Social Responsibility: A Review of Concepts, Research and Practice. *International Journal of Management Reviews*, 12(1), 85-105.
- Crane, A., Matten, D., & Spence, L. (2019). *Corporate social responsibility: Readings and cases in a global context*. Oxford, UK: Routledge.
- Dahlsrud, A. (2008). How Corporate Social Responsibility is Defined: An Analysis of 37 Definitions. *Corporate Social Responsibility and Environmental Management*, 15, 1-13. <https://doi.org/10.1002/csr.132>
- Maqbool, S. (2015). An overview of programs in Saudi Arabia with reference to select organizations. *International Journal of Human Resources Studies*, 5, 282-289. <https://doi.org/10.5296/ijhrs.v5i2.7753>
- Orlitzky, M., Schmidt, F., & Rynes, S. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies*, 24, 403-441 <https://doi.org/10.1177/0170840603024003910>
- Razak, R. (2015). Corporate Social Responsibility Disclosure and its Determinants in Saudi Arabia., Middle-East. *Journal of Science Research*, 23(10), 2388-2398.
- Shen, L., Govindan, K., & Shankar, M. (2015). Evaluation of Barriers of Corporate Social Responsibility Using an Analytical Hierarchy Process under a Fuzzy Environment-A Textile Case. *Sustainability*, 7, 3493-3514. <https://doi.org/10.3390/su7033493>
- Shyam, R. (2016). An analysis of corporate social responsibility in India. *International Journal of Research - Granthaalayah*, 4(5), 56-64. <https://doi.org/10.29121/granthaalayah.v4.i5.2016.2674>
- Sustainability Advisory Group. (2009). What Do Middle Eastern Leaders Think about CSR. Retrieved from: www.sustainabilityadvisory.net.
- Vimala, G., & Suresh, K. (2017). Exploring approaches to drivers and barriers of corporate social responsibility implementation in academic literature. *EDP Sciences*, 33, 1-8.
- Weber, M. (2008). The business case for corporate social responsibility: a company-level measurement approach for CSR. *European Management Journal*, 26, 247-261. <https://doi.org/10.1016/j.emj.2008.01.006>
- Wickert, C., Post, C., Doh, J. P., Prescott, J. E. and Prencipe, A. (2021). 'Management research that makes a difference: Broadening the meaning of impact'. *Journal of Management Studies*, 58, 297– 320.
- Yin, J. (2017). Institutional drivers for corporate social responsibility in an emerging economy: A mixed-method study of Chinese business executives. *Business & Society*, 56, 672-704. <https://doi.org/10.1177/0007650315592856>

The Role of Corporate Governance in Enhancing Financial Performance of Non-Bank Financial Institutions in Jordan

Suhaib Mohammed Sulaiman Al-Khazaleh, Haslindar Ibrahim, & Md Aslam Mia

School of Management, University Sains Malaysia, Malaysia

Corresponding email: suhaibkh74@student.usm.my

Abstract

This study examines the financial performance of non-bank financial institutions (NBFIs) in Jordan. Firm performance in the current study will be measured by return on assets (ROA) and TOBINSQ. Based on the latest studies on corporate governance, this study measured corporate governance using board structure such as board size, board independence, and board meetings. Moreover, board diversity is also evaluated based on gender diversity, board experience and board ethnicity. In terms of ownership structure such as managerial ownership, foreign ownership, and ownership control are considered.

Keywords: corporate governance; board structure; board diversity; firm performance; ownership structure.

Introduction

Over the past two decades, there has been a growing interest in the topic of corporate governance among academic practitioners and policy makers. This is in large part due to the Sarbanes-Oxley Act of 2002 and several high-profile scandals that occurred in developed countries in the first decade of the twenty-first century, such as those involving WorldCom, Enron, Parmalat, and Lehman Brothers. The Institute of Chartered Accountants in England and Wales (ICAEW) says the following is part of corporate governance (Pargendler et al., 2016).

The broad term "corporate governance" refers to the rules, practices, laws, regulations, and institutions that control how organizations and corporations behave, manage, and oversee their operations (Inyang, 2009). It works to achieve the organization's goals while also managing relationships with stakeholders such as the board of directors and shareholders. Furthermore, it addresses individual accountability through a procedure that reduces the principal-agent problem in business. Good corporate governance is essential for generating the eye-catching investment environment that competitive enterprises require in order to secure a strong position in efficient financial markets. Good corporate governance is crucial in countries with a strong commercial history, and it also helps entrepreneurs flourish. In the last 20 years, the study of corporate governance has attracted the bulk of academic attention in the subject of finance. Jenson and Meckling (1976); Berle & Means (1932) says that the main agency problem that firms face is the split between ownership and control.

Corporate governance is described as having legitimacy, accountability, and competence in the realm of policy and delivery of services by simultaneously respecting the law and human rights. The concept can be easily understood by the Cadbury report, in which its important role in managing and controlling companies' activities was highlighted (Cadbury, 2002). However, it is said that governance can be good or bad, effective, or ineffective depending on what is incorporated during the governing practices and also based on the characteristic or quality values associated with it (Al-ahdal, Alsamhi, Tabash, & Farhan, 2020). This poses a number of issues in terms of managing corporate assets for the benefit of all stakeholders involved in the organization. While keeping the agency-related issue in mind, excellent research has been conducted in the field of corporate governance. According to Core, Holthausen and Larcker

(1999), businesses with less effective governance to guide and manage corporate activities are more prone to agency challenges. The agency problem allows managers to gain more personal incentives, which eventually leads to poor corporate performance. As a result, for long-term growth and survival, organizations must improve their corporate governance. An organization can establish good corporate governance by balancing ownership and control as well as the interests of the firm's stakeholders.

Recent issues with corporate governance stem from managers' unethical use of the company's resources, which ultimately hurts the shareholders (Eldenburg, Hermalin, Weisbach & Wosinska, 2004 ; Fan 2004). As a result, there has been a surge in interest in empirical studies on the efficacy of various corporate governance structures and methods, as well as a thorough reevaluation of some of the current practices in corporate governance (Eldenburg et al. 2004; Doidge et al. 2007; Fan 2004). Events in the economy, politics, and finance over the past two decades have impacted the economies and financial markets of the countries concerned, raising awareness of the need for effective corporate governance mechanisms to ensure the stability of the economy (Fan 2004). Consequently, governments, businesses, and academics have focused on how corporate governance affects firm performance (Doidge et al., 2007; Zulkafli & Samad, 2007).

The well-known agency concerns caused by the separation of ownership and management (Jensen and Meckling, 1976) persist in today's firms. According to a recent study, when organizations have more agency concerns, they perform worse (Wisbech 1993 and Wisbech 1995). Because of these difficulties, managers can reap personal benefits at the expense of investor interests. A good corporate governance framework is one of the most important approaches to address such agency concerns. The cross-holding structure and group activities complicate agency difficulties. These agency concerns and insufficient corporate governance contribute to macroeconomic crises such as the Asian Crisis of 1997, in addition to poor business performance and risky financing habits (Claessens, Djankov, Fan, & Lang, 2002). As a result, corporate governance issues and agency difficulties in Southwest Asia must be addressed immediately and specifically in Jordan.

The Jordanian Securities Commission (JSC) established the code of corporate governance of listed enterprises in the ASE in 2017, which was adopted in (2009/05) as another step toward expanding corporate governance in the country and improving the investment climate. The OECD's principles on good governance served as inspiration for the development of this code (OECD, 2018). According to the document, the "new code" entitled Governance Rules and Corporate Discipline Standards, covers new concerns relating to the board's organizational structure and the roles and obligations of its members. Furthermore, this code suggests that the chairman and CEO positions be split. Board committees must also appoint members to the Nominating and Compensation Committees (Shehata, 2015). Companies based in Jordan are required by law to follow the law by 2009. Several sections of the code detail the numerous aspects with which Jordanian businesses must comply.

Recent legislative, economic, and financial reforms in Jordan have established the foundations of corporate governance by fostering openness, accountability, and the rule of law in the country's commercial activities. Legislators, governments, and the management of NBFIs are made aware of the risk associated with the lack of rules governing corporate governance by instances of managerial inefficiency and accounting scandals. Shareholders and other interested parties believe the lack of restrictions will lead to losses that will disrupt the national economy and the investment climate. All of this has made it more important to strengthen Jordan's NBFIs corporate governance frameworks and bases. NBFIs like insurance, real estate, and diversified financial organizations were chosen for this research. The World Bank Report (2019) notes that the rise in investment throughout time has helped spur development in fields as diverse as IT, healthcare, and renewable energy. However, both

developing nations and emerging markets have obstacles when trying to define and reap the benefits of investment's powerful role, which includes increasing both market size and the number of high-risk industries. Companies in Jordan are controlled by a small number of people, making them vulnerable to interference from the government, political connections, and dominant families (Singam, 2003; Miles & Salim, 2013).

Furthermore, NBFIs in Jordan have recently grown to be key actors in the financial services business. NBFIs have an important dual role in the financial system. They augment commercial banks' work by filling service gaps, but they also compete with them and pressure them to improve their efficacy and responsiveness to consumer needs. Most NBFIs are also active in the markets for stocks and bonds and in the mobilization and allocation of long-term financial resources. For many reasons, this research includes the NBFIs. The influence of NBFIs cannot be overstated. However, the outlook is bleak for credit unions and other NBFIs. More loans are being given without proper oversight, leading to a rise in bad debt and decreased productivity. The first company in this space was liquidated due to poor management (Siobhan, 2021). Additionally, most prior research has concentrated on the manufacturing and financial sectors. To examine these factors, the operations of NBFIs were selected.

The low rate of return on investments makes Jordan a risky place to invest money. CeicData (2021) reports that the decline in Jordan's investment return is attributable to the underachievement of the country's NBFIs. However, the problem cannot be resolved until the government of Jordan launches investment programs to lure investors to the country (Jordan Government, 2018). The COVID-19 outbreak has had a devastating effect on Jordan's economy. Because of this, investors now have more doubts regarding the safety of their money in Jordan. However, beginning in 2020, Jordan will see a rebound, allowing it to boost its GDP. This opens up possibilities for financial investments in Jordan's NBFIs (CeicData, 2021). The fundamental question of the company's efficiency and return on investment is still unresolved.

Despite its short duration, Jordan's experience has demonstrated that increasing awareness is the first and most important step in convincing business organizations to adopt high corporate governance norms. Jordan's regulatory climate significantly improved during the 1990s. The Corporate Compliance Authority, for example, plays an important role in enforcing a number of the Company Law's key corporate governance principles. Jordan's Central Bank is another key player in the improvement of corporate governance. The Jordan Central Bank is continuing its efforts to improve corporate governance in the NBFIs system by drafting the Corporate Governance Code, which aims to promote international best practices in NBFIs corporate governance. Corporate governance is not only of interest to governmental entities; several private forums and groups have also been established to educate the public about the importance of corporate governance.

This study contributes to the corpus of knowledge on corporate governance in a range of contexts. First, this study is different from most others because it looks at how corporate governance affects business success in a developing country like Jordan (Bhagat & Bolton, 2019). Most other studies have focused on rich countries. The current study seeks to focus on Jordan, a country with few resources, therefore capital market performance becomes an important source of income for the country. While Bhatt and Bhatt (2019) conducted one of the few studies on the association between corporate governance and company's performance in emerging nations, the current study aims to focus on Jordan. As a result, a developing economy like Jordan places a high priority on measures to ensure that NBFIs constantly contribute to the economy. Furthermore, Jordan's corporate governance framework is still in its early stages because it is unclear who is responsible for overseeing the implementation of the corporate governance code's recommendations (Cigna et al., 2017). The findings of this study contribute to defining the corporate governance processes that support a strong corporate governance framework in Jordan and developing countries in general. Second, his study

contributes to the literature by using a composite measure for ownership structure (i.e., board size, independence, and meetings) and board diversity (i.e., gender diversity, board experience, and board ethnicity) and (managerial ownership, foreign ownership, and ownership control). The majority of previous research studied the board of directors' impact on firm performance using the board of directors' characteristics.

Literature Review

A system of practices that leads to organizational accountability to shareholders and other stakeholders is known as corporate governance. However, in order to fully comprehend corporate governance, one must first comprehend a theory that attempts to explain the foundation and justification for this management requirement. Corporate governance is based on agency theory in this regard (Jensen & Meckling, 1976). This theory discusses the nature of connections in organizations and how they can be handled within the confines of internally developed policies and externally imposed rules and regulations in order to accomplish the desired performance goals and objectives (Mallin, 2010). According to agency theory, a higher proportion of independent directors on boards, according to agency theory, aids in monitoring the conflict of interests between shareholders and managers. (Agrawal and Knoeber, 2012; Daily et al., 1999; Duchin et al. 2010; Fama & Jensen, 1983; Shleifer & Vishny, 1997). However, there is no solid evidence of the effects of board composition on business performance. Companies with more outside directors perform better, and there is evidence that the inclusion of outside directors reduces perquisite use (Agrawal & Knoeber, 2012). Outside director representation has a detrimental influence on firm performance, according to Agrawal and Knoeber (1996) and Coles et al., (2011) but outside director involvement has no influence on firm performance (Machuki & Rasowo, 2018).

Adegboye et al. (2019) show in their study that there is a significant effect of corporate governance on firm performance. Similarly, the presence of majority shareholders (which is part of CG) has a positive effect on the value of the company. In this case, they showed that the application of good corporate governance practices proved to increase the company's stock price. Ararat, et al. (2017) and Arora and Bodhanwala (2018) argue that a positive relationship between governance quality and firm performance is maintained and stronger at low ownership control. Sumarno et al. (2016) also conclude that good corporate governance has a significant influence on firm performance. In parallel, Gherghina et al. (2015) find that there was a statistically significant relationship between the global rankings of governance and firm performance. However, some research results show that the variable of good corporate governance has no effect on firm performance. This opinion is supported by Akbar et al. (2016) and Ratnadewi and Ulupui (2016). Considering the role of corporate governance on firm performance, the above studies showed mixed results. But majority of them have concluded that corporate governance has a significant influence on firm performance. Among the above studies, it was noted that none of them has investigated CG in the context of NBFIs. Most of them were from the perspective of manufacturing or banking sector.

Board Structure and Firm Performance

The agency theory describes the function of board size, which is to monitor and safeguard shareholders' interests. Conflicts of interest have been observed between shareholders and managers as a result of the separation of owners and management (Jensen and Meckling, 1976). Numerous studies have been conducted to investigate the impact of board size on company performance. Larger boards are more typical in complex organizations, according to Coles et al. (2008), and this is likely to boost business performance. However, Yermack (1996) and Guest (1998) discovered an inverse relationship between board size and business performance (2009). Hossain et al. (2001) and Reddy et al. (2008) find comparable results for New Zealand-

listed firms. The average board size in New Zealand is six members, which is less than what Jensen recommends for American corporations. However, the smaller board size in New Zealand firms corresponds to the country's specialty market. As a result, board independence reduces agency costs and the likelihood of expropriation, resulting in more effective monitoring and control and, ultimately, higher and better corporate performance (Fama and Jensen, 1983; Salehi et al., 2019). The conclusions of the empirical study on the effect of the board of directors (board independence) are contradictory. Some argue for and against having more board independence (Fama and Jensen 1983; Fama 1980; Potton and Baker, 1987). In general, there appears to be no empirical evidence that having board independence influences a company's performance (Zulkafli & Samad, 2007). A more engaged board will be more effective, and the board meeting is recognized as a beacon of the board activity and productivity levels (Bananuka et al., 2020). Furthermore, regular meetings will result in actual board control over all business-approved transactions and procedures, allowing them to make sound judgments that will improve the company's operations (Musleh Alsartawi, 2019).

Board Diversity and Firm Performance

Various arguments have been advanced on the relationship between gender diversity and a firm's competitive advantages. There are certain arguments in favor of the claim that increasing diversity would help the company for a variety of reasons. Women, according to Hurst et al. (1989), have a "feeling" cognitive style that emphasizes harmony and the ability to encourage knowledge transmission (Earley & Mosakowski, 2000). They are also regarded as "tough" because they had to overcome challenges prior to being selected to the board, earning them a strong reputation in the community (Krishnan and Park, 2005). Furthermore, it is claimed that gender diversity will stimulate higher innovation and creativity. Other ideas, on the other hand, suggest that more gender diversity may harm a firm. Gender differences may increase the likelihood of conflicts, sluggish decision-making, and variations in risk-taking behavior. (Joshi et al., 2006; Richard et al., 2004; Jianakoplos & Bernasek, 1998).

The findings of empirical studies on the value of diversity are contradictory. According to Watson, Kumar, and Michaelson, a homogeneous board performs better in the short term, and a heterogeneous board performs better in the long term in achieving business goals (1993). However, Eisenhardt and Xin (1999) discovered that board diversity resulted in emotional conflict, which harmed the firm performance. In Jordan, an ethnically diverse board could have a significant board capital. Board capital has been positively connected with the provision of guidance and counsel, the maintenance of the firm's reputation and legitimacy, the opening of channels of communication, the purchase of resources outside the organization, and efficient performance.

Board ethnicity has received less research than other types, owing in part to its rarity. Nationality diversity has an impact on group dynamics and decision-making, which may have an impact on firm-level outcomes, similar to how gender diversity alters cognitive perspectives (Johnson et al., 2013). However, the findings are not conclusive in this aspect (Carter et al., 2010). Delis et al. (2017) focus on board members' genetic diversity in an effort to go beyond national diversity and capture more universal attributes, concluding that the inclusion of directors from nations with varying levels of genetic diversity improves corporate success. In contrast to Guest (2019), who finds no evidence that board ethnic diversity improves overall company performance in a US environment, Khan et al. (2019) conclude that national diversities have the potential to improve the quality of corporate social responsibility disclosure.

Ownership structure and firm performance

The relationship between ownership structure and corporate performance has piqued the curiosity of the literature. More managerial ownership, according to the agency model, should minimize agency costs and hence promote firm performance because there is a convergence of interests between shareholders and managers as managers' ownership increases. Shleifer, and Vishny (1988) and McConnell et al. (2002) discovered a substantial correlation between managerial ownership and business performance (1990). However Park and Jang (2010) implies that increased insider ownership may have a negative impact on firm performance. This is known as the entrenchment theory, which Stolz (1988) defines as follows: when there is a limited amount of management ownership, company value rises because insiders' rights to transfer control are more officially vested. Furthermore, because insiders are more organized than dispersed investors, they are more likely to acquire hefty premiums in the case of a takeover.

Foreign investors are recognized to reduce agency expenses, particularly in developing countries (Abor et al., 2007). As a result of this, many countries have opened their stock exchanges to overseas investors, allowing them to invest in domestic equities (Bekaert et al., 2007). By the mid-1990s, investments in emerging markets had increased. As is characteristic of Middle Eastern countries, Jordan has made tremendous progress in building a favorable legal environment for foreign investors and executing necessary legislative reforms. Prior study has shown that the presence of international investors is more important than the presence of domestic investors since domestic investors lack expertise and knowledge of the country's financial and legal systems (Dvorak, 2005). Furthermore, previous studies have shown that having a foreign employee in the organization increases productivity (Kang et al., 1995; Yoshikawa and Phan, 2003; Yilmaz and Buyuklu, 2016; Madly et al., 2018). Furthermore, Aydin et al. (2007) asserted that foreign-owned enterprises are more productive than indigenous ones. Al-Gamrhet al., (2020); discovered a negative link between company performance in the UAE and international investors. As a result, more research is required to confirm the link.

Azofra and Santamaría (2011) investigated how ownership control influences the productivity of Spanish firms. They emphasized the importance of ownership control in Spanish company governance and how these structures affect the efficiency and profitability of financial institutions through this investigation. According to their results, this position has a dual dimension that is determined by the ultimate controlling owner's amount of control. Another aspect of the company's ownership structure is ownership control. Ownership control should be utilized to actively oversee enterprises, reduce information asymmetry and agency concerns, and improve corporate performance (Shleifer and Vishny, 1986; Alhadab, Abdullatif, & Mansour, 2020). Furthermore, it is said that investors should press enterprises to create solid corporate governance processes, apply professional experience, support the organization in making sound business judgments, and have highly developed talents (Hussain Tahir, 2015).

Method

These measures of corporate governance are not being tested in NBFIs, particularly in Jordan. The sample size of the current study will be the NBFIs, and the secondary data will be collected from the years 2017 to 2021. The panel data analysis regression model is used to test all hypotheses in the full sample period. It is used to test the proposed hypotheses regarding the effects of corporate governance mechanisms and the performance of NBFIs. The focus of the study is on the effectiveness of Jordan's NBFIs in the areas of insurance, diversified financial services, and real estate. There was a total of 80 NBFIs in Jordan, per data collected by CeicData (CeicData, 2018).

Table 1. Variables Used in This Study

Variables	Acronym	Measurements	References
Return on assets	ROA	Net income divided by shareholder equity	(Kucukkocaoglu and Bozkurt 2018; Grover, 2001)
TOBINSQ	TQ	The ratio of the sum of the market value of equity plus total debt divided by book value of total assets	(Koji et al. 2020; Weir et al. 2002)
Board Size	BSIZE	Number of directors	(Khatib & Nour, 2021)
Board independence	BINDP	Percentage of independent directors	(Khatib & Nour, 2021)
Gender diversity	GNDR	Percentage of female directors	(Khatib & Nour, 2021)
Board experience	BEX	The typical number of boards that company directors have participated in.	(Yaseen et al., 2019)
Board Ethnicity	BE	the proportion of foreign members on the board	(Dittmar, 2012)
Ownership Control	OC	Subtract the total parent share from the total subsidy share, then multiply by 100.	(Hooy et al., 2019)
Foreign ownership	FOWN	The proportion of foreign shareholders (foreign investors and foreign institutions) to overall shareholders in the company.	(Ting et al. 2016)
Managerial ownership	MO	the percentage of the company's total outstanding shares held by board members	(Ji et al., 2020)

Discussion

Theoretically, the findings of this study are expected to enhance the quality of corporate governance through a number of its components. The involvement of board composition, diversity, and ownership structure in the financial reporting process has the potential to boost the corporate governance framework. NBFIs in Jordan have worked extremely hard over the past ten years to achieve their objectives. There seems to be inadequate research in Jordan on the performance of financial institutions and the factors that affect their ability to achieve their goals. Jordan's contribution to MENA NBFIs has increased by 20% in the last ten years, from 16% to 34%. As a result, the theoretical focus of this work will be on how corporate governance affects NBFIs.

Second, in developed countries, the corporate governance model is founded on agency theory. The interaction between shareholders, who act as the corporation's principal agents, and the board of directors, which acts as its agent, is central to the theory. Despite their diverse institutional systems, rising countries such as Jordan usually embrace and adhere to the Anglo-American model of corporate governance. Jordanian enterprises are characterized by a high concentration of family control, political connections, and government influence (Aleigha, 2016). According to Ahrens et al. (2011), applying a foreign model of corporate governance to developing nations is impossible due to differences in institutional environments. According to the agency theory argument, the foreign model is less effective in resolving corporate governance difficulties in emerging countries. As a result, the study advises applying agency theory to the development of the current study's model.

Conclusion

The study examines the impact of a condensed corporate governance framework on company performance listed as NBFIs in Jordan which covers a total of 80 such publicly traded firms in Jordan. Following that, the corporate governance index is constructed using Principal Component Analysis and corporate governance methods. Fixed Effects and Random Effects models used to test the hypothesis.

References

- Adegboye, A., Ojeka, S., Adegboye, K., Ebuzor, E., & Samson, D. (2019). Firm performance and condensed corporate governance mechanism: Evidence of Nigerian financial institutions. *Business: Theory and Practice*, 20, 403–416. <https://doi.org/10.3846/btp.2019.38>
- Agrawal, A., & Knoeber, C. R. (2012). (2012). Corporate governance and firm performance. *Accounting*, 7(1), 13–22. <https://doi.org/10.5267/j.ac.2020.10.019>
- Ahrens, T., Filatotchev, I., & Thomsen, S. (2011). The research frontier in corporate governance. *Journal of Management and Governance*, 15(3), 311–325. <https://doi.org/10.1007/s10997-009-9115-8>
- Akbar, S., Poletti-Hughes, J., El-Faitouri, R., & Shah, S. Z. A. (2016). More on the relationship between corporate governance and firm performance in the UK: Evidence from the application of generalized method of moments estimation. *Research in International Business and Finance*, 38, 417–429. <https://doi.org/10.1016/j.ribaf.2016.03.009>
- Al-ahdal, W. M., Alsamhi, M. H., Tabash, M. I., & Farhan, N. H. S. (2020). The impact of corporate governance on financial performance of Indian and GCC listed firms: An empirical investigation. *Research in International Business and Finance*, 51(September 2018), 101083. <https://doi.org/10.1016/j.ribaf.2019.101083>
- Al-gamrh, B., Al-Dhamari, R., Jalan, A., & Afshar Jahanshahi, A. (2020). The impact of board independence and foreign ownership on financial and social performance of firms: evidence from the UAE. *Journal of Applied Accounting Research*, 21(2), 201–229. <https://doi.org/10.1108/JAAR-09-2018-0147>
- Alagha, H. S. (2016). Corporate Governance Practices and Firm Performance of Listed Companies Including Islamic Financial Institutions in the United Arab Emirates. *A Thesis Submitted in Fulfilment of the Requirement of the Degree of Doctor of Business Administration College of Law & Justice Victoria University Melbourne 03*, (February), 1–269.
- Alhadab, M., Abdullatif, M., & Mansour, I. (2020). Related party transactions and earnings management in Jordan: the role of ownership structure. *Journal of Financial Reporting and Accounting*, 18(3), 505–531. <https://doi.org/10.1108/JFRA-01-2019-0014>
- Ararat, M., Black, B. S., & Yurtoglu, B. B. (2017). The effect of corporate governance on firm value and profitability: Time-series evidence from Turkey. *Emerging Markets Review*, 30(November 2014), 113–132. <https://doi.org/10.1016/j.ememar.2016.10.001>
- Arora, A., & Bodhanwala, S. (2018). Relationship between Corporate Governance Index and Firm Performance: Indian Evidence. *Global Business Review*, 19(3), 675–689. <https://doi.org/10.1177/0972150917713812>
- Azofra, V., & Santamaría, M. (2011). Ownership, control, and pyramids in Spanish commercial banks. *Journal of Banking and Finance*, 35(6), 1464–1476. <https://doi.org/10.1016/j.jbankfin.2010.10.029>
- Bananuka, J., Mukyala, V., Tumwebaze, Z., Ssekakubo, J., Kasera, M., & Najjuma, M. S. (2020). The intention to adopt Islamic financing in emerging economies: evidence from Uganda. *Journal of Islamic Accounting and Business Research*, 11(3), 610–628. <https://doi.org/10.1108/JIABR-07-2017-0108>

- Bhagat, S., & Bolton, B. (2019). Corporate governance and firm performance: The sequel. *Journal of Corporate Finance*, 58(November 2018), 142–168. <https://doi.org/10.1016/j.jcorpfin.2019.04.006>
- Cadbury, C. A. (2002). *No Title Corporate governance and chairmanship: A personal view*. Oxford University Press on Demand.
- Coles, J. L., Lemmon, M. L., & Wang, Y. A. (2011). The Joint Determinants of Managerial Ownership, Board Independence, and Firm Performance. *SSRN Electronic Journal*, (852). <https://doi.org/10.2139/ssrn.1099324>
- Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics*, 51(3), 371–406. [https://doi.org/10.1016/s0304-405x\(98\)00058-0](https://doi.org/10.1016/s0304-405x(98)00058-0)
- Earley, C., & Mosakowski, E. (2000). Ar-gote & McCrath. *Management Journal*, 43(1), 26–49.
- Eldenburg, L., Hermalin, B. E., Weisbach, M. S., & Wosinska, M. (2004). Governance, performance objectives and organizational form: Evidence from hospitals. *Journal of Corporate Finance*, 10(4), 527–548. [https://doi.org/10.1016/S0929-1199\(03\)00031-2](https://doi.org/10.1016/S0929-1199(03)00031-2)
- Gherghina, Ș. C. (2015). Corporate governance ratings and firm value: Empirical evidence from the Bucharest stock exchange. *International Journal of Economics and Financial Issues*, 5(1), 97–100.
- Hooy, C. W., Brahmana, R. K., & Setiawan, D. (2019). Controlling shareholders and the effect of diversification on firm value: evidence from Indonesian listed firms. *Journal of Asia Business Studies*, 13(3), 362–383. <https://doi.org/10.1108/JABS-12-2016-0165>
- Inyang, B. J. (2009). Nurturing Corporate Governance System: The Emerging Trends in Nigeria. *Journal of Business Systems, Governance & Ethics* 4|2, 4(2).
- Jenson & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Ji, S., Mauer, D. C., & Zhang, Y. (2020). Managerial entrenchment and capital structure: The effect of diversification. *Journal of Corporate Finance*, 65(February 2018), 101505. <https://doi.org/10.1016/j.jcorpfin.2019.101505>
- Jianakoplos, N. A., & Bernasek, A. (1998). Are women more risk averse? *Economic Inquiry*, 36(4), 620–630. <https://doi.org/10.1111/j.1465-7295.1998.tb01740.x>
- Knoeber, & Agrawal. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis*, 31(3), 377–397. <https://doi.org/10.2307/2331397>
- Koji, K., Adhikary, B. K., & Tram, L. (2020). Corporate Governance and Firm Performance: A Comparative Analysis between Listed Family and Non-Family Firms in Japan. *Journal of Risk and Financial Management*, 13(9), 215. <https://doi.org/10.3390/jrfm13090215>
- Kucukkocaoglu, G., & Bozkurt, M. A. (2018). Identifying the Effects of Mergers and Acquisitions on Turkish Banks Performances. *Asian Journal of Economic Modelling*, 6(3), 235–244. <https://doi.org/10.18488/journal.8.2018.63.235.244>
- Machuki, & Rasowo. (2018). Corporate Governance and Performance: An Empirical Investigation of Sugar Producing Companies in Kenya. *European Scientific Journal*, ESJ, 14(31), 240. <https://doi.org/10.19044/esj.2018.v14n31p240>
- Mallin, C.Goergen, M Mitleton-Kelly, E., Al-Hawamdeh, A., & Chiu, I. H. Y. (2010). *Corporate governance and complexity theory*. Edward Elgar Publishing.
- Musleh Alsartawi, A. (2019). Performance of Islamic banks: Do the frequency of Shari‘ah supervisory board meetings and independence matter? *ISRA International Journal of Islamic Finance*, 11(2), 303–321. <https://doi.org/10.1108/IJIF-05-2018-0054>
- Pargendler, M., Gilson, R., Hansmann, H., Kronecke, J., Morley, J., Möslin, F., ... Solomon, S. D. (2016). The Corporate Governance Obsession Abstract problems – from economic

- development and systemic risk to rising inequality – corporate governance as a solution to a constellation of economic and social ills . It. *Journal of Corporation Law*, 42(2), 359–402.
- Park, K., & Jang, S. S. (2010). International Journal of Hospitality Management Insider ownership and firm performance : An examination of restaurant firms. *International Journal of Hospitality Management*, 29(3), 448–458. <https://doi.org/10.1016/j.ijhm.2009.10.023>
- Ratnadewi, P., & Ulupui, I. (2016). Mekanisme Corporate Governance Sebagai Variabel Pemoderasi Pengaruh Pengungkapan Corporate Social Responsibility Pada Nilai Perusahaan. *E-Jurnal Akuntansi*, 14(1), 548–574.
- Sumarno, J., Widjaja, S., & Subandriah, S. (2016). The Impact Of Good Corporate Governance To Manufacturing Firm’s Profitability And Firm’s Value. *Signifikan: Jurnal Ilmu Ekonomi*, 5(2), 181–196. <https://doi.org/10.15408/sjie.v5i2.3542>
- Weir, C., Laing, D., & Mcknight, P. J. (2002). Internal and external governance mechanisms: Their impact on the performance of large UK public companies. *Journal of Business Finance and Accounting*, 29(5–6), 579–611. <https://doi.org/10.1111/1468-5957.00444>
- Yaseen, H., Iskandrani, M., Ajina, A., & Hamad, A. (2019). Investigating the relationship between board diversity & corporate social responsibility (CSR) performance: Evidence from France. *Academy of Accounting and Financial Studies Journal*, 23(4).
- Yermack, D. (1996). Higher market valuation of companies with a small board of directors, 40, 185–211.
- Zulkafl, A. H., & Samad, F. A. (2007). Corporate Governance And Performance Of Banking Firms: Evidence From Asian Emerging Markets. *Issues in Corporate Governance and Finance*.

Managers' Confidence, Product Market Competition and Corporate Cash Holdings In China

BO Le & Haslindar Ibrahim

School of Mangement, Universiti Sains Malaysia, Malaysia

Abstract

The theory of traditional corporate finance holds that people are completely rational, but psychological research shows that people are not completely rational, that means when people make their decisions, their beliefs and preferences usually produce systematic biases, which are expressed by behavioral characteristics such as overconfidence, typically, anchoring and loss avoidance. The theory of behavioral corporate finance is gradually formed as research results on psychology are applied into the field of corporate finance, which relaxes the assumption of rational-economic-man. Managers acted as the power center of enterprise organizational leadership that need to take a certain responsibility for business operation and their behaviors can have a significant impact on enterprise decisions. Managers' behaviors can be affected to some degree by their psychological characteristics, which means managers are not completely rational. Psychological studies believe that overconfidence is pervasive among people and is more obvious among managers and entrepreneurs. In China, the degree of managers' overconfidence is more serious than in foreign enterprises because of some problems such as the prominent status of authority in interpersonal relationships, special transition economy environment, and imperfection of enterprise internal and external mechanism. So far, studies on the effect of managers' overconfidence on business decisions are mainly about investment and financing decisions and M&A decisions and rarely involve the decision of corporate cash holdings. Domestic and foreign scholars have been focusing on the decision of corporate cash holdings which is an important financial decision of business and have formed a mature theoretical framework such as pecking order theory, trade-off theory, and agency theory. However, existing researchers basically think managers are completely rational and conduct analysis and tests mainly from the views of business characteristics, corporate governance, and external environment, less involving the view of manager's confidence. Besides, the influence of managers' behaviors on corporate decisions is connected with the arrangement of corporate institutions and product competition market as an important system arrangement of business that can effectively supervise and constrain managers' behaviors. So, the main questions that this paper tries to explore are: (1) whether and how does managers' confidence affect the decision of corporate cash holdings in Chinese listed companies? (2) whether and how do product competition market influence the relationship between managers' confidence and corporate cash holdings decisions?

Keywords: corporate cash holdings; managers' confidence; product market competition.

Introduction

Cash is the most liquid and important asset of an enterprise. The cash holding of an enterprise can largely reflect the financial decisions and operating strategy. Cash holding decisions directly affect the development of enterprises: the lower cash holding will lead to financial difficulties because of capital shortage; too much cash holding will lead to the loss of investment income, and high cash holding will increase the risk of cash abuse by managers. Therefore, how to make cash holding decisions scientifically is an important issue in the field of the corporate finances. With the development of the imperfect capital market researching, more and more corporate financial researchers began to focus on capital issues such as cash

holding. Since Keynes first illustrates prevention and speculative motivation for companies to maintain cash liquidity, the researchers have begun to conduct extensive research and exploration on corporate cash holdings from different perspectives. However, the existing research is based on the assumption that managers are rational people. Psychologists have proved through a series of experiments and studies that people are generally overconfident, not completely rational, and usually result in a decision-making judgment. For business managers, overconfidence is more serious and may systematically deviate from traditional economic theories when making decisions. Therefore, under the assumption of irrational people, it is necessary to discuss the level of cash holding. At the same time, for the overconfident enterprises, it will be changed the level and value of the enterprise cash holding due to the impact of the industry competitive pressure? Are overconfident managers more positive or negative in corporate performance? These problems have plagued listed companies to make decisions.

Therefore, based on the system background of listed companies in China, this paper explores the relationship between the competition pressure in the industry and the cash holding value of enterprises, and disproves the role of overconfident managers in it. Then to help enterprises to establish a comprehensive and effective enterprise cash holding plan.

Literature Review

Corporate Cash Holding

Cash is an important asset of the enterprise, which not only reflects the financial situation and operating performance, but also affects the investment and financing decisions of the enterprise, and even affects the future survival and development of the enterprise.

In 2007, the financial crisis caused a great negative impact on the real economies of various countries, making it more difficult for many enterprises, especially for small and medium-sized enterprises. Moreover, some enterprises went bankrupt due to the tight and broken capital chain. In reality, there are many domestic and foreign enterprises suffering from cash problems, such as China Chang-jiang Shipping Group Nanjing Oil Transportation Co., Ltd. (2014), Jiangsu Huaguang Real Estate (2015), Shandong Tianxin Group (2017). In foreign, such as American General Motors (2009), French Ink-manufacturer Brancher (2011), Korea Hanjin Shipping (2016), Canada Walton Group (2017), Germany Air Berlin (2017), etc. In the context of the financial crisis and the impact of the above series of bankruptcy cases, more enterprises are deeply aware of the importance of cash, and the concept of "cash is king" is gradually rooted in the concept of enterprise management.

According to the trade-off theory, the lack of enterprise cash holding and the too-high enterprise cash holding will affect the enterprise performance. Too low cash holding can bring high external financing costs and opportunity costs that cannot meet the needs of investment projects. If the enterprise cash holding plan is too low, it may lead to the cash flow fracture in production and operation and even the enterprise bankruptcy. Excessive cash holdings can cause proxy problems. Agents seek personal benefits for themselves based on the information advantages of the separation of two rights, which lead to the enterprise's cash holding performance decline with the improvement of the cash holding. Therefore, how to reasonably determine the level of enterprise cash holding and develop a cash holding plan to obtain high cash performance is difficult for each enterprise.

Since the 1990s, scholars have been paying more attention to the phenomenon of high cash holding of enterprises. They have made in-depth excavation and investigation on the influencing factors and economic consequences of enterprises, the influencing factors and economic consequences of the cash holding value, and the dynamic adjustment of cash holding. Although the research conclusions are not completely consistent, some more mature theoretical

research frameworks have still been formed, such as Pecking Order Theory, agency theory and trade-off theory.

Managers' Confidence

However, the existing research are based on the rational economic assumption that enterprise managers making decisions are completely rational, obviously this is not consistent with the reality. This is because psychology research found that people are not completely rational, people make decisions beliefs and preferences often appear systematic bias, and show overconfidence, typical, anchoring (Kahneman et al., 1982), and overconfidence is the most stable (DeBondt and Thaler, 1995). Overconfidence has been observed in psychological research in the judgments of lawyers, negotiators, entrepreneurs, securities analysts, doctors, drivers, scientists, etc.

As the core of the power of the enterprise organization and leadership, the manager is not only the planner of the strategic layout, but also the maker of the organizational decision-making. Managers need to assume the corresponding responsibility for the operation of the enterprise, and their behavior will inevitably have a significant substantive impact on the enterprise decision-making (including financial decision-making). Obviously, the behavior of managers should be influenced by their psychological characteristics, which means managers are not completely rational. Since the end of the 20th century, the incomplete rationality of managers and their influence on enterprise decision-making have attracted more attention from scholars in the world, which lead to the rapid development of corporate behavior and financial research. Weinstein (1980) and Ben-David et al. (2007) found that people generally show overconfidence in making judgments, particularly in groups such as entrepreneurs and managers. Zheng Peipei and Chen Shaohua (2018) pointed that: in China, Managers may be more confident, and the main reason may be included as follows: First, As Confucian culture serves as the main body of traditional Chinese culture, Advocating the hierarchical idea, Highlight the importance of authority in Chinese interpersonal relations, which caused the superior leaders (enterprise managers) easy to have "control illusion". Then the Chinese interpersonal relations formed a confident cognitive bias; Secondly, during these years, China's special transforming economic environment has shaped a number of "godfather-level" state-owned enterprise leaders and founders of private enterprises, Their pivotal role in entrepreneurship and business growth and continued success may strengthen their confident psychology; Thirdly, the imperfection of the internal governance mechanism and the external supervision mechanism help Chinese enterprises creating a suitable "soil" for managers' confidence. Jiang Fuxiu et al (2009) believe that due to the influence of Confucian hierarchy and the imperfect external governance mechanism, the proportion of overconfidence of listed companies in China may be higher than the of overconfidence of foreign listed companies.

Roll who is the earliest scholar to study the impact of manager confidence on company decision-making (1986) proposed Hubris hypothesis. He tested the consequences of manager confidence from the perspective of merger and acquisition, and found that the merger and acquisition behavior carried out by overconfident managers would eventually damage the value of the enterprise. Subsequently, research on the impact of manager confidence on enterprise decision-making has increasingly emerged (Yu Mingguo et al., 2006; Malmendier and Tate, 2008; Hribar and Yang, 2016).

Product Market Competition

However, the current research on cash holding decisions is mainly analyzed from the perspectives of corporate characteristics, corporate governance and external environment, which rarely involves the perspective of manager confidence (Deshmukh et al., 2017) and industry competition pressure (Dong Yueying, 2018). For example, some studies showed that

the changes in the company's financial indicators, the improvement of corporate governance, and the changes in the external environment will all affect the level of enterprise cash holding and enterprise value. However, some related research pays more attention to the changes of financial indicators and the uncertainty of the macroeconomic political environment and has relatively little research on the external governance mechanism that effect of competitive pressure in the industry. The existing research also comes from the assumption of rational economic people that managers make rational decisions and ignore the understanding of their irrational decisions, but it doesn't explain lots of real-world economic problems. Therefore, in recent years, the academic circle has introduced the behavioral economics theory as the theoretical hot spot and began to discuss the influence of managers as irrational economic people on enterprise operation and management. As a result, it will have effects on the Industry competition pressure on the cash holding and value of enterprises in overconfident enterprises? Are overconfident managers more positive or negative in corporate performance? These problems have plagued public companies to make decisions.

Therefore, based on the background of Chinese listed companies, this paper will explore the relationship between industry competition pressure and the enterprise cash holding level and value, and demonstrates the role of overconfident managers in it, which help enterprises to establish a comprehensive and effective enterprise cash holding plan.

Methodology

This paper plans to use the data of the A-share listed companies in Shanghai and Shenzhen from 2010-2020 as the sample, and according to the data of the A-share listed companies in Shanghai and Shenzhen were selected according to the 2012 industry classification standards of China Securities Regulatory Commission. This paper handles the collected data: (1) excluding financial companies, Because such companies will hold a lot of cash because of their own operating characteristics, And its accounting system also has the particularity; (2) Excluding Class ST companies and companies with an asset-liability ratio greater than 1 and less than 0; (3) Excluding the listed companies that issue B-shares, H-shares and other overseas shares, Because the market prices of these stocks, accounting standards, regulatory environment are different from A shares; (4) Excluding samples changed to CEO or chairman in the inspection year Because changes in important executives have a significant impact on company decisions; (5) Excluding the samples of IPO, share increase, rights offering and convertible bonds in the current year Because these financing practices of companies can affect their cash holdings; (6) Excluding company samples with missing data. The data plan is from the GuoTai'an database and processed using Stata statistical software.

Variables

Referring to Opler(1999), Yang Xingquan (2014), and Zheng Peipei (2018), the Cash (dependent variable) was defined as:

Corporate cash holds = (monetary funds + trading financial assets) / total assets

Meanwhile for Independent variables are as follows:

Metrics of Product competition market pressure

The top 50 companies in the HHI= sector represent the sum of the square of the industry's total assets

Metric of manager overconfidence

Managers overconfident = Top 3 executive compensation / total executive compensation (including allowance)

In order to accurately measure the relationship between industry competitive pressure and manager overconfidence and the cash holding of enterprises, the following factors affecting the cash holding of enterprises were also selected to control. These control variables were

mainly set up by Opler et al.(1999), Yang Xingquan and Zeng Chunhua (2012), and Zheng Peipei (2018). In order to control the impact of the Enterprise nature、 year and industry on the enterprise cash holding level. In the regression model, the Enterprise nature、 year, and industry virtual variables are also added to the type.

Table 1. Variables

Variable name	Variable symbol	Variable meaning
Cash holding	Cash	(Monetary funds + trading financial assets / Total assets)
Managers are overconfident	OC	Top 3 executive compensation / executive compensation combined
Product competition market pressure	PCM	HHI
Enterprise Value	V	$V = (\text{tradable market value} + \text{non-tradable market value} + \text{total liabilities}) / \text{total assets}$
Firm size	Size	Natural logarithm of the total assets at the end of the year
Dividend payment	Div	Dividend payment is taking 1
Internal control	HIC	If the internal control index is higher than the median industry of the sample year, HIC takes 1, otherwise, HIC takes 0,
Customer concentration	CC	According to the "sales revenue of the top five customers in the proportion of the total sales revenue" disclosed in the annual reports of the listed companies
Managerial Ownership	MO	Managerial ownership is the ratio of ownership by executive directors to the number of shares outstanding at the end of fiscal year.
The two duties are integrated	Du	If the chairman and the general manager are held by the same person, the value is 1. Otherwise, 2
R & D	RD	R & D expenses / operating income
Enterprise nature	State	1. non-SOE value 0
The Year	Year	Annual is from 2010 to 2020
Industry	Ind	The industry classification of listed companies in 2012 issued by the CSRC serves as the standard

Hypothesis development

Summing up Hypothesis:

- H1: Compared with the less confident managers, the more confident managers have higher cash holdings.
- H2: Industry competition pressure is significantly negatively associated with the enterprise cash holding level.
- H3: Under the same industry competitive pressure, overconfident managers develop relatively lower levels of cash holding plans.
- H4: The product competition marketing will significantly and negatively adjust the relationship between enterprise cash holding and enterprise value.
- H5: Under the regulation of the product competition marketing, the enterprise cash holding of overconfident managers is significantly related to the enterprise value.

References

- Bi Xiaofang, Li Haiying, And Song Xueru. Impact Of Executive Overconfidence On Corporate Innovation: Intermediary And Regulation Of Financial Redundancy [J], Technological Progress And Countermeasures, 2016, (7): 108-114.
- Cai Satellite, Zeng Cheng, Hu Zhiying. Corporate Group, Monetary Policy, And Cash Holding [J]. Financial Research, 2015, (2): 114-130.
- Cheng Fei. Corporate Business Strategy, Financing Constraints, And Cash Holding Value [J]. System Engineering, 2015, (12): 8-15.
- Chen Hanwen, Zhou Zhongsheng. Internal Control Of Quality Measures And Corporate Debt Financing Costs [J]. Nankai Management Review, 2014, (3): 103-111.

- Chen Qi'an, Fang Caixia, Xiao Yinghong. Research On Dividend Distribution Decision Model Based On The Excessive Confidence Of Listed Company Executives [J]. China Management Science, 2010, (3): 174-184.
- Deng Road, Xu Ruiyang, Gu Yu, Liao Mingyi. Management Overconfidence, Overseas Acquisition And Economic Consequences —— M. Management Review Based On Yanzhou Coal, 2016, (LI): 252-263
- Dou Huan, Lu Zhengfei, Major Shareholder Control, Associated Deposits And Cash Holding Value [J]. Management World, 2016, (5): 141-150.
- Fan Gang, Wang Xiaolu, Zhu Hengpeng, China Market Marketing Index: The Relative Process Of Regional Marketization 2011 Report [M], Beijing: Economic Science Press, 2011.
- Fang Hongxing, Chen Zuohua. Can High-Quality Internal Control Effectively Address Trait And System Risks? [J]. Accounting Studies, 2015, (4): 70-77.
- Chen Y, Dou P Y, Rhee S G, Et Al. National Culture And Corporate Cash Holdings Around The World. Journal Of Banking & Finance, 2015,50:1-18.
- Lian Yujun, Su Zhi. Listed Companies Cash Hold : Static Trade-Off Or Dynamic Trade-Off. World Economy, 2008 (10): 84-96.
- Lian Yujun, Su Zhi. Cash Holding Of Chinese Listed Firms: Static Trade-Off Or Dynamic Trade -Off. The Journal Of World Economy, 2008(10):84-96. (In Chinese)
- Myers S C, Majluf N S. Corporate Financing And Investment Decisions When Firms Have Information That Investors Do Not Have. Journal Of Financial Economics, 1984,13 (2):187-221.
- Yang Xingquan, Zhang Liping, And Wu Haomin. Marketization Process Management Power And Company Cash Holding. Nankai Management Review 2014,17 (2): 34-45.
- Yang Xingquan, Zhang Liping, Wu Haomin. Marketization, Managerial Power, And Firm Cash Holdings. Nankai Busi-Ness Review, 2014,17(2):34-45. (In Chinese)
- Wang Fusheng And Song Haixu. Ultimate Controller, Diversification Strategy, And Cash Holdings. Management World 2012 (7): 124-136,169.
- Wang Fusheng, Song Haixu. The Ultimate Controller , The Diversification Strategy And The Cash Holdings. Management World, 2012(7):124-136,169. (In Chinese)
- Weidemann J F. Regional Differences In The Determinants Of Cash Holdings. Cologne, North Rhine -Westphalia: University Of Cologne, 2016.
- Harford J, Mansi S A, Maxwell W F. Corporate Governance And Firm Cash Holdings In The Us. Journal Of Financial Economics, 2008 ,87(3):535-555.
- Hoberg G ,Phillips G, Prabhala N. Product Market Threats, Payouts, And Financial Flexibility. The Journal Of Finance, 2014,69(1):293-324.
- Kalcheva I, Lins K V. International Evidence On Cash Holdings And Expected Managerial Agency Problems. The Re-View Of Financial Studies, 2007,20(4) :1087-1112.
- Cai Satellite Zeng Cheng Hu Zhiying. Corporate Groups, Monetary Policy, And Cash Holding. Financial Studies, 2015 (2): 114-130.
- Wang Hongjian, Li Qingyuan Xing Fei. Economic Policy Uncertainty, The Level Of Cash Holdings, And Their Market Value. Financial Research, 2014 (9): 53-68.
- Li Yunhe. Excessive Company Investment Comes From Management Agents Or Overconfidence. World Economy, 2014,37 (12): 95-117.
- Cai Weixing , Zeng Cheng , Hu Zhiying . Business Groups, Monetary Policy, And Corporate Cash Holdings . Journal Of Financial Research ,2015(2):114-130. (In Chinese)
- Wang Hongjian , Li Qingyuan, Xing Fei. Economic Policy Uncertainty, Cash Holdings And Market Value. Journal Of Financial Research , 2014(9):53-68. (In Chinese)

- Landier A, Thesmar D. Financial Contracting With Optimistic Entrepreneurs. *The Review Of Financial Studies* ,2009,22(1) :117-150.
- Ll Yunhe. Does Corporate Over -Investment Result From Managerial Agency Or Managerial Overconfidence? *The Journal Of World Economy*, 2014,37(12): 95-117. (In Chinese)
- Huang R H ,Tan Kj K, Faff R W.Ceo Overconfidence And Corporate Debt Maturity. *Journal Of Corporate Finance* ,2016,36 :93-110.
- Hribar P, Yang H.Ceo Overconfidence And Management Forecasting. *Contemporary Accounting Research*, 2016,33(1):204-227.
- Deshmukh S, Goel A M , Howe K M. Do Ceo Beliefs Affect Corporate Cash Holdings. Chicago, Il: Depaul University, 2015.
- Ql Baolei, 'Tian Gaoliang, Li Liuchuang. Internal Control Deficiencies Of Listed Companies And Quality Of Financial Information. *Journal Of Management Science* ,2010,23 (4):38-47. (In Chinese)
- Yenn-Ru Chen,Keng-Yu Ho & Chia-Wei Yeh.(2020).Ceo Overconfidence And Corporate Cash Holdings. *Journal Of Corporate Finance*, Doi: 10.1016/J.Jcorpfin.2020.101577.

ESG Performance and Accounting Conservatism: Evidence from China Capital Market

Min Fong Chan, Lian Kee Phua, & Dayana Jalaludin

School of Management, Universiti Sains Malaysia, Malaysia

Abstract

This study examines the impact of ESG performance on the conditional accounting conservatism of listed Chinese firms on the Shanghai Stock Exchange and Shenzhen Stock Exchange. Using panel data with firm-year as the unit of analysis, a sample of 6,829 publicly listed firms are studied over ten years from FY2011 to FY2020. We hypothesize that conditional conservatism is greater among high-performing-ESG firms on the argument that high-performing ESG firms would mitigate managers' opportunistic behavior and they tend to demonstrate discipline in the provision of high-quality earnings information. Using the ESG ratings from the Hexun database, we find a positive relationship between ESG performance and conditional conservatism. Overall, this study enhances understanding of how a firm's ESG engagement may relate to an important attribute of financial reporting — conditional conservatism.

Keywords

Chinese capital market; conditional conservatism; environmental, social, and government.

Introduction

Environmental, social, and governance (ESG) goals have gradually taken the center stage among corporate communities. As one of the biggest and most dynamic economy in the world, the ESG performance among Chinese companies play a critical role to enable them to remain competitive globally. Chinese firms need to transform and incorporate ESG elements into their business strategies and practices so that they are not lagging behind their peers in the West. In this regard, business leaders in bigger companies in China have started to take initiatives and be more proactive in sharing ESG information. From the perspective of policy-makers, the Chinese government and regulatory authorities, have introduced a series of strategies and policies conducive to the development of ESG, such as putting forward the goal of “carbon neutrality”, introducing green finance policies, and establishing carbon trading mechanisms, which have further improved the ESG system in the Chinese capital market.

The development highlighted above suggests that sustainability has evolved to become mainstream business practices, it is thus important to examine whether ESG performance creates values to various stakeholders. A great deal of research supports the contention that managers in firms with a better reputation for ESG tend to demonstrate discipline in the provision of high-quality earnings information (Kim et al., 2012; Labelle et al., 2010). Conservatism has long been considered a crucial indicator of quality in financial reports (Basu, 1997). Watts (2003a, 2003b) claimed that identifying conservatism in accounting is an efficient way to address the problem of moral hazards due to asymmetry in information among stakeholders. Lafond and Watts (2008) argued that information asymmetry between inside and outside equity investors drives demand for conservatism in financial reporting. From this perspective, conservatism could be considered acting as a governance mechanism, playing an important role in reducing uncertainty and information asymmetry.

The primary objective of this study was to explore the relationship between ESG and conservatism in accounting in the context of an emerging market. In this study, we used the firm-year specific C-Score, developed by Khan and Watts (2009), in conjunction with ESG

rating established by Hexun for the performance of ESG. The sample of this study include firms listed on the Shanghai and Shenzhen Stock Exchanges between 2011 and 2020. Our empirical results indicate a clear and significant relationship between ESG performance and accounting conservatism, which is consistent with our assertion and also supports the conclusions drawn by Cheng and Kung (2016) and Shen et al. (2020).

Our study extends prior research from two dimensions. Following the work of Burke et al., (2020), Shaw et al., (2021) and Shen et al., (2020) which examined the relationship between corporate environmental or social disclosure or CSR and accounting conservatism, this study examines the impact of corporates' ESG performance on accounting conservatism based on three pillars in aggregate instead of one single dimension of performance in isolation. Secondly, the present study presents evidence from the perspective of conditional conservatism as opposed to Francis et al. (2013) which used a measure of unconditional conservatism.

The next section summarizes related research and develops the research hypothesis. Section 3 describes the research design, measurement of variables, and the empirical models. Section 4 describes our sample followed by results and discussion. Section 6 concludes the study.

Literature Review and Hypothesis Development

Basu (1997) interprets accounting conservatism as 'reflecting bad news more quickly than good news' in earnings. This interpretation implies that there are systematic differences in the timeliness and persistence of earnings between good news and bad news. Ball and Shivakumar (2005, 2006, 2008) developed a model of conservatism by using the relationship between operating cash flows and total accruals by taking into account the various models used in previous research. Khan and Watts (2009) developed a model of conservatism by extending stock return model of Basu (1997). They found that conservatism increases as uncertainty, information asymmetry, and investment cycle increase, and C-Score is presented as a measure of conservatism. Supporting Khan and Watts (2009), Cui et al. (2021) documented that the conditional conservatism is higher when firms have greater information asymmetry following the COVID-19 pandemic.

Anagnostopoulou et al. (2021) showed that higher levels of conservatism are negatively associated with CSR orientation shown by firms. Moreover, Anagnostopoulou et al. (2021) suggested that, under the monitoring pressure from financial stakeholders, firms prioritize commitment to accounting conservatism over the needs of non-financial stakeholders and other interest groups. However, Francis et al. (2013) showed that firms exhibiting higher levels of conservatism are also more socially responsible.

Guo et al. (2020) found that the level of conservatism in financial reporting significantly increases with socially responsible activities, supporting the view that CSR-oriented firms are more likely to use accounting conservatism to credibly commit to acting in the interests of stakeholders. Similarly, Cheng and Kung (2016) found a positive relationship between conservatism and CSR for a sample of Chinese firms and interpreted that their findings are consistent with the notion that CSR compliance constrains managers' opportunistic behavior. Shen et al. (2020) discovered that CSR can effectively increase accounting conservatism. Besides, Shaw et al. (2021) found that conditional conservatism is increasing in CSR compliance. On the other hand, Burke et al. (2020) noted a negative relation between CSR performance and conditional conservatism.

With increasing focus on environmental, social and governance factors, researchers have started to shift from CSR to ESG by focusing more on the effect of ESG activities on firm value, market reaction, and financial performance. Zhang et al. (2021) noted that firms with good ESG performance leads to lower equity cost. Broadstock et al. (2021) found that ESG performance can lower financial risk during a crisis. Hence, high-ESG (performance) portfolios

generally outperform low-ESG portfolios. Zhao et al. (2018) reveal that companies that demonstrated better ESG performance could enhance financial performance. Li et al., (2020) noted that ESG performance lower bond default rate. Hu et al. (2018) found that firms with greater corporate environmental responsibility demonstrated a significantly positive effect on firm performance.

Studies that documented a significant relationship between ESG performance and accounting conservatism are limited and inconclusive. Burke et al. (2020) opine that, first, a firm with better CSR performance is less likely to engage in opportunistic behavior when contracting with stakeholders, leading to less demand for conditional conservatism from the contracting parties. Second, CSR performance helps improve a firm's information environment and thus mitigates information asymmetry, which in turn reduces the demand for conditional conservatism by outside investors. Consistent with Burke et al. (2020), Hong (2020) demonstrated that the higher the ESG rating, the lower the conservatism. The argument is that ESG performance is beneficial in reducing information asymmetry and thus improving the quality of accounting information. Nonetheless, a great deal of research supports the contention that managers in firms with a better reputation for ESG tend to demonstrate better discipline in the provision of high-quality earnings information (Kim et al., 2012; Labelle et al., 2010). In summary, prior research documented contradictory evidence with regards to the relationship between ESG performance and accounting conservatism. On the ground that conservatism reflects high disclosure quality (LaFond and Watts, 2008), this study makes the prediction that firms with higher ESG performance has higher level of conditional conservatism. In other words, we expect that firms with higher ESG performance tend to report more conservatively, hence, the following hypothesis is proposed:

Hypothesis 1: ESG performance is positively associated with higher conditional conservatism.

Research Method

In this section, we first discuss the construction of our ESG performance measures and then discuss the regression model used for the empirical testing of our hypothesis.

Measurement of ESG Performance and Conservatism

To measure firms' ESG performance, we follow the extant literature and utilize ESG ratings from the Hexun database (Li & Li, 2022; Yang et al., 2019; Yi et al., 2021), one of the leading Internet content providers of financial information in Chinese mainland. Hexun database collects ESG information from corporate ESG reports and annual filings with the SSE and the SZSE and produces ESG ratings for every Chinese listed A-share firm that publishes its annual report. Therefore, Hexun provides the most comprehensive ESG rating database and the most widely used measure of corporate ESG performance for Chinese listed firms (Tang et al., 2019; Yi et al., 2021).

Following Cheung et al. (2013), Khalid et al. (2021), Shahab et al. (2020) and Xu et al., (2018), this study uses ESG scores of Chinese listed firms from the Hexun website. In particular, the ESG scores are based on 38 indicators used to determine the sustainable performance of these Chinese listed companies. There are experts in validating the sustainability reports of these companies to determine and assess the composite score, or the ESG score, of their ESG performance on an annual basis. The Hexun database publishes the companies' ESG scores for the public (Khalid et al., 2021). In particular, the total ESG score, as extracted from the Hexun database (Zhong et al., 2019), is an aggregated value of performance in five different environmental, social, and governmental aspects (e.g., shareholder responsibilities, employees' responsibilities, and environmental responsibility). The overall ESG score equals the sum of all five individual categories (Zhong et al., 2019). In

this study, the Hexun ESG score is used as a proxy for ESG performance which represents the independent variable measures at the firm-year level. A larger value of the ESG variable (ESGS) indicates better ESG performance.

To measure conservatism in earnings, Basu (1997) leveraged on the fact that the asymmetric timeliness of accounting earnings reflects bad news more quickly than they do for good news. Khan and Watts (2009) incorporated the notion of asymmetric timeliness presented by Basu (1997) in the construction of a firm-year specific measure of accounting conservatism, referred to as the C-Score. Consistent with Cheng & Kung (2016), we used this measure to examine the relationship between ESG and conservatism in accounting.

The Baseline Regression Model

We estimate the following ordinary least squares (OLS) regression to examine the association between ESG performance conditional conservatism in period t :

$$CSCORE_{i,t} = \beta_0 + \beta_1 ESGS_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 MTB_{i,t} + \beta_4 LEV_{i,t} + \varepsilon_{i,t} \quad (1)$$

where i and t are firm and year subscripts, respectively. The dependent variable, $CSCORE$, is a firm-year measure of conditional conservatism developed by Khan and Watts (2009).

We include several control variables that potentially correlate with conservative financial reporting. First, we control for size ($SIZE$), as larger firms tend to have lower asymmetric timelines of earnings (Givoly et al., 2007), and market-to-book ratio (MTB), as conditional conservatism could be affected by the accumulated level of unconditional conservatism (Beaver & Ryan, 2005). We include leverage (LEV) because firms with higher leverage have been shown to have a greater level of conservatism (Watts, 2003a). All variables are transformed into a natural logarithm as a form of non-linear transformation.

Results

Data, Sample Selection, and Descriptive Statistics

Table 1 summarizes the sample selection procedure. We start with an initial S&P Capital IQ database sample of 7,578 firm-year observations spanning the period from 2011 to 2020. We remove 335 firm-years with missing values for the ESG performance scores. Next, we merge the ESG sample with the S&P Capital IQ databases. After eliminating observations with missing values for the required variables, we obtain the final sample of 6,829 firm-year observations ranging over the period from 2011 to 2020.

Table 1. Sample Selection Procedure

	Observation
Initial sample	7,578
(-) Observations with unavailable data at Hexun database	335
(-) Observations with a negative ESG score	379
(-) Observations with negative equity or assets	35
(=) Final Sample	6,829

Panel A and Panel B of Table 2 and 3 report summary statistics and Pearson correlation coefficients, respectively, for the variables in Equation (1). The mean (median) value of $CSCORE$ is 0.146 (0.062), opposing to other papers (e.g., Ahmed and Duellman (2013) & Burke et al. (2020)). With respect to the ESG measures, $ESGS$ has mean (median) of 27.992 (22.690). The correlation coefficients between $CSCORE$ and $ESGS$ variables is positive but not significant. No correlation coefficients between the ESG measures and other explanatory variables are greater than 0.5, suggesting that multicollinearity is not a major concern in the regressions.

Table 2. Panel A: Descriptive Statistics

Variables	N	Mean	Std Dev	Median
CSCORE	6,829	0.146	0.460	0.062
ESGS	6,829	27.992	17.006	22.690
SIZE	6,829	8.848	1.002	8.713
MTB	6,829	3.527	25.466	2.197
LEV	6,829	0.418	0.787	0.180

Note(s): CSCORE denotes firm-year measure of conditional conservatism, estimated following Khan and Watts (2009), ESGS denotes environmental, social and governance score measured using Hexun scoring, SIZE denotes natural log of market value of equity, LEV denotes long-term and short-term debt deflated by market value of equity, MTB denotes market-to-book ratio.

Table 3. Panel B: Correlation Matrix

Variables	CSCORE	ESGS	SIZE	BTM	LEV
CSCORE	1.000				
ESGS	0.013	1.000			
SIZE	0.051***	0.217***	1.000		
MTB	-0.288***	-0.019	-0.010	1.000	
LEV	0.021*	0.027**	-0.001	-0.032***	1.000

Note(s): CSCORE denotes firm-year measure of conditional conservatism, estimated following Khan and Watts (2009), ESGS denotes environmental, social and governance score measured using Hexun scoring, SIZE denotes natural log of market value of equity, LEV denotes long-term and short-term debt deflated by market value of equity, MTB denotes market-to-book ratio. *** p<0.01, ** p<0.05, * p<0.1 (two-tailed).

Association between ESG Performance and Conditional Conservatism: Main Results

We estimate Equation (1) to examine the relation between ESG performance and conditional conservatism and report the results in Table 3. The estimated coefficients are positive and marginally significant at the ten percent level (*ESGS*: coef. = -0.016, t-stat = -8.49), indicating that CSR performance in the current period is positively associated with conditional conservatism in the current period. The results support our hypothesis that firms with higher ESG performance are more conservative in their financial reporting.

Turning to the control variables, the signs and significance levels of the estimated coefficients are not consistent with prior literature except for market-to-book ratio (*MTB*). Specifically, bigger firms (*SIZE*), firms with lower market-to-book ratios (*MTB*), and firms with lower leverage (*LEV*) have a higher level of conditional conservatism.

$$CSCORE_{i,t} = \beta_0 + \beta_1 ESGS_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 MTB_{i,t} + \beta_4 LEV_{i,t} + \varepsilon_{i,t}$$

Table 3. ESG Performance and Conditional Conservatism

	(1) CSCORE
	Coefficient (t-statistic)
ESGS	0.072* (1.86)
SIZE	0.368 (0.74)
MTB	-0.178*** (-2.58)
LEV	-0.033** (-2.21)
Constant	-2.615*** (-2.63)
No. of observations	5,094
Adjusted R-squared	0.563
Year and industry fixed effects	Yes

Note(s): CSCORE denotes firm-year measure of conditional conservatism, estimated following Khan and Watts (2009), ESGS denotes environmental, social and governance score measured using Hexun scoring, SIZE denotes natural log of market value of equity, LEV denotes long-term and short-term debt deflated by market value of equity, MTB denotes market-to-book ratio. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ (two-tailed). Significance levels are based on standard errors clustered by firm.

Conclusion

This study examines the relation between ESG performance and a prevalent characteristic of financial reporting — conditional conservatism. We hypothesize that ESG performance is positively related to conditional conservatism for two reasons. First, a firm with better ESG performance tend to demonstrate discipline in the provision of high-quality earnings information (Kim et al., 2012; Labelle et al., 2010), leading to more demand for conditional conservatism. Our results also supporting Guo et al.'s (2020) findings that the level of conservatism in financial reporting significantly increases with socially responsible activities, indicating the view that ESG-oriented firms are more likely to use accounting conservatism to credibly commit to acting in the interests of stakeholders. Second, firms with greater ESG performance may mitigate managers' opportunistic behavior which supporting the results of Cheng and Kung (2016).

Overall, we provide strong evidence suggesting that ESG performance is positively related to conditional conservatism and add to the conservatism literature and the ESG literature. Moreover, by shedding light on the influence of ESG performance on financial reporting, our study may be of interest to the Chinese government authorities as it contemplates a potential ESG reporting regulation. Lastly, we contribute to the continued debates on accounting conservatism among standard setters and practitioners by showing that companies' non-traditional business activities, such as ESG engagement, promotes conservative financial reporting.

References

- Ahmed, A. S., & Duellman, S. (2013). Managerial Overconfidence and Accounting Conservatism. *Journal of Accounting Research*, 51(1), 1–30. <https://doi.org/10.1111/j.1475-679X.2012.00467.x>
- Anagnostopoulou, S. C., Tsekrekos, A. E., & Voulgaris, G. (2021). Accounting conservatism and corporate social responsibility. *The British Accounting Review*, 53(4), 100942. <https://doi.org/10.1016/j.bar.2020.100942>
- Ball, R., & Shivakumar, L. (2005). Earnings quality in UK private firms: Comparative loss recognition timeliness. *Journal of Accounting and Economics*, 39(1), 83–128. <https://doi.org/10.1016/j.jacceco.2004.04.001>
- Ball, R., & Shivakumar, L. (2006). The role of accruals in asymmetrically timely gain and loss recognition. *Journal of Accounting Research*, 44(2), 207–242. <https://doi.org/10.1111/j.1475-679X.2006.00198.x>
- Ball, R., & Shivakumar, L. (2008). Earnings quality at initial public offerings. *Journal of Accounting and Economics*, 45(2–3), 324–349. <https://doi.org/10.1016/j.jacceco.2007.12.001>
- Basu, S. (1997). The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics*, 24, 3–37.
- Beaver, W. H., & Ryan, S. G. (2005). Conditional and Unconditional Conservatism: Concepts and Modeling. *Review of Accounting Studies*, 10(2–3), 269–309. <https://doi.org/10.1007/s11142-005-1532-6>
- Broadstock, D. C., Chan, K., Cheng, L. T. W., & Wang, X. (2021). The role of ESG performance during times of financial crisis: Evidence from COVID-19 in China. *Finance Research Letters*, 38, 101716. <https://doi.org/10.1016/J.FRL.2020.101716>
- Burke, Q. L., Chen, P.-C., & Lobo, G. J. (2020). Is Corporate Social Responsibility Performance Related to Conditional Accounting Conservatism? *Accounting Horizons*, 34(2), 19–40. <https://doi.org/10.2308/horizons-18-111>
- Cheng, C.-L., & Kung, F.-H. (2016). The effects of mandatory corporate social responsibility policy on accounting conservatism. *Review of Accounting and Finance*, 15(1), 2–20. <https://doi.org/10.1108/RAF-12-2014-0135>
- Cheung, Y.-L., Jiang, K., Mak, B. S. C., & Tan, W. (2013). Corporate Social Performance, Firm Valuation, and Industrial Difference: Evidence from Hong Kong. *Journal of Business Ethics*, 114(4), 625–631. <https://doi.org/10.1007/s10551-013-1708-0>
- Cui, L., Kent, P., Kim, S., & Li, S. (2021). Accounting conservatism and firm performance during the COVID-19 pandemic. *Accounting & Finance*, 61(4), 5543–5579. <https://doi.org/https://doi.org/10.1111/acfi.12767>
- Francis, R. N., Harrast, S., Mattingly, J., & Olsen, L. (2013). The Relation between Accounting Conservatism and Corporate Social Performance: An Empirical Investigation. *Business and Society Review*, 118(2), 193–222. <https://doi.org/https://doi.org/10.1111/basr.12008>
- Givoly, D., Hayn, C. K., & Natarajan, A. (2007). Measuring reporting conservatism. *The Accounting Review*, 82(1), 65–106. <https://doi.org/10.2308/accr.2007.82.1.65>
- Guo, J., Huang, P., & Zhang, Y. (2020). Accounting conservatism and corporate social responsibility. *Advances in Accounting*, 51, 100501. <https://doi.org/https://doi.org/10.1016/j.adiac.2020.100501>
- Hong, S. (2020). Corporate social responsibility and accounting conservatism. *International Journal of Economics and Business Research*, 19(1), 1–18. <https://doi.org/10.1504/IJEBR.2020.103883>
- Hu, J., Wang, S., & Xie, F. (2018). Environmental responsibility, market valuation, and firm characteristics: Evidence from China. *Corporate Social Responsibility and Environmental Management*, 25(6), 1376–1387. <https://doi.org/10.1002/csr.1646>

- Khalid, F., Sun, J., Huang, G., & Su, C. Y. (2021). Environmental, social and governance performance of chinese multinationals: A comparison of state-and non-state-owned enterprises. *Sustainability (Switzerland)*, 13(7). <https://doi.org/10.3390/su13074020>
- Khan, M., & Watts, R. L. (2009). Estimation and empirical properties of a firm-year measure of accounting conservatism. *Journal of Accounting and Economics*, 48(2–3), 132–150. <https://doi.org/10.1016/j.jacceco.2009.08.002>
- Kim, Y., Park, M. S., & Wier, B. (2012). Is Earnings Quality Associated with Corporate Social Responsibility? *The Accounting Review*, 87(3), 761–796. <https://doi.org/10.2308/accr-10209>
- Labelle, R., Makni Gargouri, R., & Francoeur, C. (2010). Ethics, Diversity Management, and Financial Reporting Quality. *Journal of Business Ethics*, 93(2), 335–353. <https://doi.org/10.1007/s10551-009-0225-7>
- Lafond, R., & Watts, R. L. (2008). The Information Role of Conservatism. *The Accounting Review*, 83(2), 447–478.
- Li, P., Zhou, R., & Xiong, Y. (2020). Can ESG performance affect bond default rate? evidence from China. *Sustainability (Switzerland)*, 12(7). <https://doi.org/10.3390/su12072954>
- Li, X., & Li, Q. (2022). Does corporate social responsibility affect the achievement of performance commitment in valuation adjustment mechanism agreement? Evidence from Chinese listed company. *Managerial and Decision Economics*, 43(2), 533–543. <https://doi.org/10.1002/mde.3400>
- Martínez-Ferrero, J., Garcia-Sanchez, I. M., & Cuadrado-Ballesteros, B. (2015). Effect of Financial Reporting Quality on Sustainability Information Disclosure. *Corporate Social Responsibility and Environmental Management*, 22(1), 45–64. <https://doi.org/https://doi.org/10.1002/csr.1330>
- Shahab, Y., Ntim, C. G., Chen, Y., Ullah, F., Li, H.-X., & Ye, Z. (2020). Chief executive officer attributes, sustainable performance, environmental performance, and environmental reporting: New insights from upper echelons perspective. *Business Strategy and the Environment*, 29(1), 1–16. <https://doi.org/https://doi.org/10.1002/bse.2345>
- Shankar Shaw, T., Raithatha, M., Krishnan, G. v., & Cordeiro, J. J. (2021). Did mandatory CSR compliance impact accounting Conservatism? Evidence from the Indian Companies Act 2013. *Journal of Contemporary Accounting and Economics*, 17(3), 100280. <https://doi.org/10.1016/j.jcae.2021.100280>
- Shen, X., Ho, K. C., Yang, L., & Wang, L. F. S. (2020). Corporate social responsibility, market reaction and accounting conservatism. *Kybernetes*, 50(6), 1837–1872. <https://doi.org/10.1108/K-01-2020-0043>
- Tang, P., Fu, S., & Yang, S. (2019). Do peer firms affect corporate social performance? *Journal of Cleaner Production*, 239, 118080. <https://doi.org/10.1016/J.JCLEPRO.2019.118080>
- Watts, R. L. (2003a). Conservatism in Accounting Part I: Explanations and Implications. *Accounting Horizons*, 17(3), 207–221. <https://doi.org/10.2308/acch.2003.17.3.207>
- Watts, R. L. (2003b). Conservatism in Accounting Part II: Evidence and Research Opportunities. *Accounting Horizons*, 17(4), 287–301. <https://doi.org/10.2308/acch.2003.17.4.287>
- Xu, X., Zeng, S., & Chen, H. (2018). Signaling good by doing good: How does environmental corporate social responsibility affect international expansion? *Business Strategy and the Environment*, 27(7), 946–959. <https://doi.org/https://doi.org/10.1002/bse.2044>
- Yang, M., Bento, P., & Akbar, A. (2019). Does CSR influence firm performance indicators? Evidence from Chinese pharmaceutical enterprises. *Sustainability (Switzerland)*, 11(20), 1–18. <https://doi.org/10.3390/su11205656>

- Yi, Y., Zhang, Z., & Yan, Y. (2021). Kindness is rewarded! The impact of corporate social responsibility on Chinese market reactions to the COVID-19 pandemic. *Economics Letters*, 208, 110066. <https://doi.org/10.1016/J.ECONLET.2021.110066>
- Zhang, X., Zhao, X., & Qu, L. (2021). Do green policies catalyze green investment? Evidence from ESG investing developments in China. *Economics Letters*, 110028. <https://doi.org/10.1016/j.econlet.2021.110028>
- Zhao, C., Guo, Y., Yuan, J., Wu, M., Li, D., Zhou, Y., & Kang, J. (2018). ESG and Corporate Financial Performance: Empirical Evidence from China's Listed Power Generation Companies. In *Sustainability* (Vol. 10, Issue 8). <https://doi.org/10.3390/su10082607>
- Zhong, M., Xu, R., Liao, X., & Zhang, S. (2019). Do CSR ratings converge in China? A comparison between RKS and hexun scores. *Sustainability (Switzerland)*, 11(14), 1–20. <https://doi.org/10.3390/su11143921>

A Conceptual Paper on the Impact of Enterprise Risk Management and Cloud-based Enterprise Resource Planning (ERP) on Firm Performance

Kenny Wei Jie Quah & Kun You

School of Management, Universiti Sains Malaysia, Malaysia

Abstract

In the post-pandemic period, many businesses have deployed Cloud-based ERP (CERP) systems to stay competitive by enabling more flexible online resource management and, eventually, enhancing their performance. Nonetheless, if the adopting organization does not conduct rigorous risk management, cloud-based data may often lead to security and privacy concerns. Consequently, this article aims to investigate the effect of CERP system implementation on firm performance due to its interaction with ERM practices. To understand such a situation, this study proposes to study the listed firms in Bursa Malaysia from 2018 to 2022 to cover the period before and after the pandemic. Each listed firm's annual reports should be downloaded, and data can be extracted using content analysis. Finally, this conceptual paper proposes an econometric model to understand the relationship between CERP, ERM and firms' performance.

Keywords: cloud-based enterprise resource planning; enterprise risk management; firm performance.

Introduction

Many businesses have had trouble operating in 2019 because of the global epidemic of Covid-19 (Cho & Saki, 2022; Hu & Zhang, 2021). Following the aftermath of the 2008 global financial crisis, such an occurrence has prompted businesses everywhere to increase their vigilance in the face of continuing uncertainty (L. Cui, Kent, Kim, & Li, 2021). Without a doubt, businesses all around the globe that aren't adequately prepared for a global catastrophe or epidemic would go under. Because of the disruptions to corporate operations caused by the crisis and epidemic, many companies would see a decrease in performance.

In most cases, businesses ensure their vast resources are managed correctly to guarantee improved performance. In the past, large organizations have used an ERP system to manage their many resources (Almajali et al., 2022). Data and information from several corporate operations may be consolidated into one centralized location with the assistance of an ERP system. With this information, upper management may better allocate company resources. When this occurs, businesses can better address any problems arising, ultimately boosting business performance (Karim, Nahar, & Demirbag, 2022). To provide a smoother or more adaptable link between the system and the user, CERP was established lately. Given its capacity for linking the system with management, the CERP system has been a facilitator during the worldwide pandemic. Therefore, more businesses are using this CERP system.

The CERP system, particularly its implementation, has been the subject of a fair amount of study. Several results from the literature demonstrate concern about data security and privacy (Njuki, Muketha, & Ndia, 2022). Despite the importance of risk management—and ERM in particular—to a company's success, very little research has been conducted on the topic. When engaging with a cloud system, it is crucial to have a mechanism to manage risks to ensure the security of sensitive data. However, there is still a knowledge vacuum in the literature about how crucial risk management is to the smooth functioning of the CERP system. Therefore, this article aims to investigate the impact of integrating CERP systems with ERM procedures.

The majority of Malaysia's businesses have implemented a comprehensive CERP system in preparation for the inevitable worldwide pandemic lockdown (Shukor, Sheikhi, & Nashir, 2020; Zheng & Khalid, 2022). These businesses, in particular those trading on Bursa Malaysia, use a unique system to oversee their operations. Given this context in Malaysia, this article is able to investigate the potential positive effects of adding ERM within the CERP system on company performance. As a consequence, this article seeks to answer the following two research questions: [1] what is the relationship between the ERP system and firm performance, [2] what effect does a CERP system have on a firm's performance, [3] what is the relationship between ERM practice and firm performance, and [2] do ERM practises strengthen the connection between a CERP system and a firm's performance? Later, we'll clarify the difference between CERP and extended ERP.

Organizations in Malaysia may use this research's findings to understand better the CERP system's impact on business results and the role that risk management can play in facilitating the system's widespread adoption. Additionally, the results of this research should contribute to the growing body of literature in Malaysia about the connection between CERP and ERM and the success of businesses across the global pandemic.

Literature Review

This study focuses on the resource-based perspective theory, although it does explore other ideas that have informed the research development framework (Bailey, 2022; Karim et al., 2022). As the resource-based perspective theory demonstrates, a company's competitive edge may be seen as the synergistic use of its internal resources to boost its performance (Wernerfelt, 1984). Assets, qualities, capabilities, organizational processes, information, and knowledge are all examples of what makes up a company's internal resources (Barney, 1991). When it comes to gaining a competitive edge, nothing is more important than a company's ability to use and mobilize its resources effectively. One such resource that boosts productivity and performance is an organization's capacity for knowledge sharing (Barney, 1991; Makadok, 2001). We noticed that the CERP system and ERM practice are valuable in-house assets that may boost a company's performance.

ERP, CERP system, and Firms' Performance

The connection between CERP systems and the success of businesses has been studied in previous works. Chatti, Radouche, and Asfoura, (2021) claims that CERP technology allows businesses to manage their resources better. Such a process and system will provide the company with a competitive edge once it reaches a particular level of resource effectiveness and efficiency, allowing it to perform better than similar businesses that are not quite yet.

Yet, in such a relationship, two factors must be considered. To begin, ERP is a costly system in general since it requires cutting-edge hardware and software in addition to a dedicated staff of technical specialists and a coordinator (Chatti et al., 2021; Ungureanu, 2022). For the system to operate as intended, some bare minimums must be met. For instance, cloud systems provide seamless user and system connectivity, enabling efficient and effective resource management for the company's leadership. Further, having a technical expert on staff and a coordinator present will improve the system's efficiency by guaranteeing that business processes are carried out according to plan. More money poured into the system should make it more efficient, which would account for its high cost. As a result, we proposed the following hypothesis.

Hypothesis 1: A more robust ERP system correlates with improved firm performance.

Second, the system's availability is vital since it allows for quicker, more nimble action when making choices that will have a lasting impact on the business's success. As a result, a

cloud-based system (CERP) offers more benefits than a traditional, on-premises deployment. A cloud-based system has several advantages over a locally installed one, the most apparent being that users may access it from any web-connected device (Mahmood, 2013; Singerová, 2018). In this way, the user may easily connect to the system over the internet. Companies may choose with either an on-premises system, which requires the usage of their own server, or a cloud system, which is managed by the service provider. Thus, even if established systems may be made accessible online, cloud-based systems are superior in terms of efficiency and effectiveness. This led us to postulate the following.

Hypothesis 2: Using a Cloud-based enterprise resource planning (CERP) solution is correlated with improved firm performance.

ERM practice and Firms' Performance

The ERM, without a doubt, improves the capacity to improve the firm's performance, as stated by the COSO ERM framework (Bailey, 2022). The reality is that ERM makes it easier for companies to profit from an unpredictable business climate. Moreover, ERM incorporates the following traits to facilitate their value-adding activities inside organizations. First, ERM harmonizes a company's risk tolerance with its strategic goals. A company's risk appetite is the threshold beyond which it is willing to incur losses (COSO, 2004; COSO, 2013). To lessen management disagreements about taking on varying risks, ERM combines the risk appetite of several departments. Concurrently, a more straightforward approach to a risk management plan would be used. So, if you want to boost the company's performance, you need to make the company more efficient.

Second, ERM makes the problem of making choices in response to risks better inside its framework (COSO, 2004; COSO, 2013). ERM's main selling point is its ability to control risk. This is because ERM's stated guideline differs from traditional, department-based approaches to risk management. In addition, ERM is effective because it employs a multifaceted approach to risk identification, which leads to the development of a suitable response, whether risk avoidance, risk sharing, risk reduction, or loss. Therefore, the firm's entire performance is directly and indirectly enhanced by the speed with which it responds to the risk.

The third benefit of ERM is that it lessens the frequency and severity of unexpected losses and surprises that might occur during regular business operations (COSO, 2004; COSO, 2013). This is because ERM offers a rigorous framework for discovering probable events at both the strategic and operational levels. With this structure as its foundation, ERM bridges the gap between strategic and operational management. In brief, ERM aims to boost the efficiency of the business by eliminating any losses that might arise through regular operations.

Enterprise risk management (ERM) is not confined to a particular project or division inside an organisation; rather, it has united across organisations to provide comprehensive supervision of all types of risk. ERM, fourthly, identifies and controls not just the firm's individual risks but also the risks that cut across different divisions or departments (COSO, 2004; COSO, 2013). ERM's robust ability to consolidate management viewpoints from various entity levels is the foundation of this capacity. Value is created for the company due to ERM's ability to recognise and control internal and external threats.

Fifthly, ERM fosters an atmosphere that makes the most of possible upsides from risks (COSO, 2004; COSO, 2013). This is easily accomplished since ERM evaluates all reasonable possibilities, allowing management to single out both dangerous and advantageous outcomes. If the opportunity is taken, this will add value to the firm's performance.

To sum up, COSO claims that ERM increases the efficiency with which a company allocates its resources (COSO, 2004; COSO, 2013). Capital deployment refers to how a company spends its money. ERM supplies management with reliable risk data, improving

capital deployment and allocation decisions. Because of the ERM's emphasis on efficient capital deployment, more enterprises are finding that it improves their bottom line. This led us to postulate the following.

Hypothesis 3: ERM practices are associated with better financial results for businesses.

CERP system, ERM practice, and Firms' Performance

Based on what we've learned, we may assume that CERP systems and ERM practices have a more noticeable effect on company performance. The capacity of risk management to foresee and forestall data and security problems brought on by cloud system adoption is mainly responsible for this state of affairs. The cloud-based nature of CERP makes it vulnerable to attacks that might compromise the security of the data and information stored there. Thus, with the implementation of ERM practice, the business would have more thorough processes to follow to guarantee the security of its data and information. Therefore, we anticipate the following hypothesis.

Hypothesis 4: Cloud-based enterprise resource planning (CERP) systems and enterprise risk management (ERM) have a stronger favorable correlation to company performance.

Conceptual Framework

This part lays forth the conceptual framework upon which this research was based, as shown below in Figure 1.

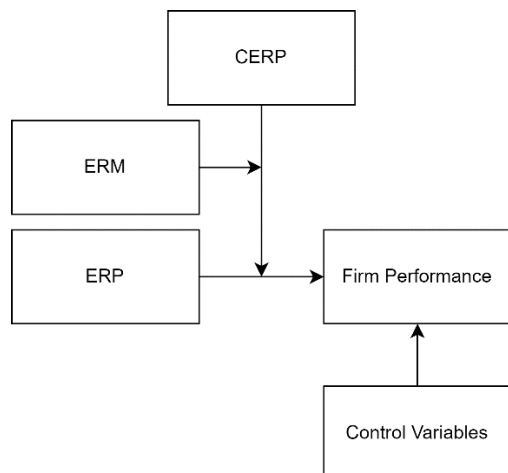


Figure 1. Conceptual Framework

Data and Methodology

This section covers data sources, sample selection, variable measurements, and models specification.

Data Sources and Sample Selection

This study's sample comprises Malaysian companies listed on the main board (officially known as the Main Market) of Bursa Malaysia between 2018 and 2022. 2018 has been designated as the pre-Covid 19 pandemic year, with 2022 serving as the post-Covid 19 pandemic year. The majority of Malaysian public enterprises were directly affected by the worldwide epidemic. The exclusion of financial firms was necessitated by the regulations controlling their revenue measurement varied from those governing firms in other sectors (Short & Keasey, 1999).

It is advised that the accounting data be received through the DataStream database, while the data on the CERP system and ERM practice are collected manually from annual reports. It is advised that companies whose financial, CERP system, or ERM practice data are incomplete be omitted from the research. This comprises organizations whose system and risk management specifics were not released. We intend to use the keyword search to identify the system: [1] information system, software, and [2] ERP, SAP, ORACLE, and NAV. We intend to utilize ERM's terms: [1] enterprise risk, risk management system, and [2] CRO, ERM. As a consequence of the keyword search, we intend to conduct, we will acquire the last observation for our sample.

Performance Measures

We evaluate the impact of the CERP system on company performance using two kinds of performance measures: market performance, as measured by Tobin's q ratio, and accounting performance, as measured by ROA and ROE. Since its debut in the financial economics literature, Tobin's q has acquired widespread recognition as a measure of business performance. It is a forward-looking metric that compares the market's assessment of the company's assets to the cost to replace those assets (Tobin, 1969). Due to the difficulties in estimating the replacement cost of assets, Tobin's q ratio used in this research adheres to the ratio suggested by Chung and Pruitt (1994). They discover that the more straightforward measure of Tobin's q may be a decent estimate of Tobin's q, explaining at least 96.6% of the variability in the well-known Lindenberg and Ross (1981) method of Tobin's q. To calculate the more superficial estimate of Tobin's q, add the market value of equity, the book value of long-term debt, and net current assets to total assets.

ROA and ROE have been used in several studies to describe a company's success since they are the most significant profitability indicators. They assess a company's profitability in proportion to its total assets and equity, respectively. In particular, these two accounting-based measurements represent the firm's actual performance, excluding market noise. ROA is calculated by dividing net income by total assets, while ROE is calculated by dividing net income by shareholders' equity.

Control Variables

When studying the link between the CERP system and company performance, it is necessary to account for various firm-specific factors that may directly or indirectly impact firm performance. Following (Andres, 2008; H. Cui & Mak, 2002; Davies, Hillier, & McColgan, 2005; King & Santor, 2008; Wiwattanakantang, 2001), the performance models of this research comprise a collection of variables that are crucial for controlling in a performance model. The control variables consist of firm size (logarithm of total assets), financial leverage (ratio of total debt to book value of total assets), sales growth (average percentage change in sales over two years), market-to-book ratio (market value of equity to book value of equity), firm age (age of a firm since its incorporation year), industry (industry dummies), and year (year dummies). Four-year dummies were generated from five years (2018-2022), and eight industry dummies were obtained from nine industries. The aforementioned control variables have been extensively used in corporate governance research since earlier research has shown that they substantially impact business performance.

CERP System and ERM Practice Variables and Model Specification

In the next part of this section, the CERP system and ERM practice variables and the associated models used to test the hypotheses are explained.

The Baseline Model for ERP system and Firm Performance

To examine the link between ERP systems and company performance, model (1) is developed. Y symbolizes the company's performance, which may be Tobin's q , ROA, or ROE. α is the intercept of the equation. SIZE, LEV, GRW, MB, AGE, IND, and YEAR are control variables representing, respectively, firm size, debt–asset ratio, two-year averaged sales growth, market-to-book ratio, firm age, industry dummies, and year dummies. it represents the residual from the regression. Model (1) serves as the baseline. This enables us to determine if the ERP system will have a favorable influence on the performance of businesses (hypothesis 1).

$$Y_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \beta_3 GRW_{it} + \beta_4 MB_{it} + \beta_5 AGE_{it} + \beta_6 ERP_{it} + \varepsilon_{it} \quad (1)$$

CERP System and Firm Performance

The CERP system of a company is measured by the variable ERM, as shown in model (2). CERP is a dummy variable showing if a company uses CERP as 1 or not as 0. This enables us to determine if the CERP system will have a favorable influence on company performance (hypothesis 2).

$$Y_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \beta_3 GRW_{it} + \beta_4 MB_{it} + \beta_5 AGE_{it} + \beta_6 ERP_{it} + \beta_7 CERP_{it} + \varepsilon_{it} \quad (2)$$

ERM Practice and Firm Performance

The ERM practice of a company is measured by the variable ERM in the model (3). ERM is a dummy variable showing if a company practices ERM as 1 or not as 0. This enables us to determine if the ERM practice will have a favorable influence on the performance of businesses (Hypothesis 3).

$$Y_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \beta_3 GRW_{it} + \beta_4 MB_{it} + \beta_5 AGE_{it} + \beta_6 ERP_{it} + \beta_7 ERM_{it} + \varepsilon_{it} \quad (3)$$

CERP System, ERM Practice, and Firm Performance

Last but not least, we incorporate the interaction terms of the ERP system differentiation of the first level CERP system variable with the ERM dummies, as shown in the models (4). The purpose of the interaction terms is to determine if a cloud-based ERP system has a differential influence on company performance depending on the presence of ERM practice. This enables us to test hypothesis 4, which asks if ERP systems with cloud-based systems (CERP) and ERM practices will have a more favorable impact on business performance.

$$Y_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \beta_3 GRW_{it} + \beta_4 MB_{it} + \beta_5 AGE_{it} + \beta_6 ERP_{it} + \beta_7 ERM_{it} + \beta_8 CERP_{it} + \beta_9 (ERP_{it} \times ERM_{it} \times CERP_{it}) + \varepsilon_{it} \quad (4)$$

Conclusion

This study has presented suggestions for comprehending the effect of ERM and CERP systems on business performance. In the future, other proxies may be explored using the recommendations presented in this work. In conclusion, this research seeks to contribute to the literature on risk management and cloud systems' effects on company performance in the case of a worldwide pandemic. Future studies may investigate several dimensions of risk management and information systems.

References

- Almajali, D. A., Omar, F., Alsokkar, A., Alsherideh, A. S., Masa'Deh, R., & Dahalin, Z. (2022). Enterprise resource planning success in Jordan from the perspective of IT-Business strategic alignment. *Cogent Social Sciences*, 8(1), 2062095.
- Andres, C. (2008). Large shareholders and firm performance—An empirical examination of founding-family ownership. *Journal of Corporate Finance*, 14(4), 431–445.
- Bailey, C. (2022). The relationship between chief risk officer expertise, ERM quality, and firm performance. *Journal of Accounting, Auditing & Finance*, 37(1), 205–228.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Chatti, H., Radouche, T., & Asfoura, E. (2021). Framework for the evaluation of the erp implementation success: case study in SMEs. *Journal of Management Information and Decision Sciences*, 24(4), 1–25.
- Cho, B., & Saki, Z. (2022). Firm performance under the COVID-19 pandemic: The case of the US textile and apparel industry. *The Journal of the Textile Institute*, 113(8), 1637–1647.
- Chung, K. H., & Pruitt, S. W. (1994). A simple approximation of Tobin's q. *Financial Management*, 70–74.
- Cui, H., & Mak, Y. T. (2002). The relationship between managerial ownership and firm performance in high R&D firms. *Journal of Corporate Finance*, 8(4), 313–336.
- Cui, L., Kent, P., Kim, S., & Li, S. (2021). Accounting conservatism and firm performance during the COVID-19 pandemic. *Accounting & Finance*, 61(4), 5543–5579.
- Davies, J. R., Hillier, D., & McColgan, P. (2005). Ownership structure, managerial behavior and corporate value. *Journal of Corporate Finance*, 11(4), 645–660.
- Hu, S., & Zhang, Y. (2021). COVID-19 pandemic and firm performance: Cross-country evidence. *International Review of Economics & Finance*, 74, 365–372.
- Karim, M. S., Nahar, S., & Demirbag, M. (2022). Resource-Based Perspective on ICT Use and Firm Performance: A Meta-analysis Investigating the Moderating Role of Cross-Country ICT Development Status. *Technological Forecasting and Social Change*, 179, 121626.
- King, M. R., & Santor, E. (2008). Family values: Ownership structure, performance and capital structure of Canadian firms. *Journal of Banking & Finance*, 32(11), 2423–2432.
- Lindenberg, E. B., & Ross, S. A. (1981). Tobin's q ratio and industrial organization. *Journal of Business*, 1–32.
- Mahmood, Z. (2013). *Cloud computing: Methods and practical approaches*. Springer Science & Business Media.
- Makadok, R. (2001). Toward a synthesis of the resource-based and dynamic-capability views of rent creation. *Strategic Management Journal*, 22(5), 387–401.
- Njuki, J. W., Muketha, G. M., & Ndia, J. G. (2022). *A systematic literature review on security indicators for open-source enterprise resource planning software*.
- Short, H., & Keasey, K. (1999). Managerial Ownership and the Performance of Firms: Evidence from the UK. *Journal of Corporate Finance*, 5(1), 79–101.
- Shukor, S. A., Sheikhi, A., & Nashir, A. H. M. (2020). Enterprise resource planning (ERP) adaptation in Malaysia agricultural SME: Issues and trends. *J. Theor. Appl. Inf. Technol.*, 98(12), 2046–2062.
- Singerová, J. (2018). Accounting in Cloud. *European Financial and Accounting Journal*, 13(1), 61–76. <https://doi.org/10.18267/j.efaj.206>
- Tobin, J. (1969). A general equilibrium approach to monetary theory. *Journal of Money, Credit and Banking*, 1(1), 15–29.
- Ungureanu, I. (2022). ERP and financial performance—Case study on Romanian companies. *The Review of Economic and Business Studies*, 15, 47–59.

- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180.
- Wiwattanakantang, Y. (2001). Controlling shareholders and corporate value: Evidence from Thailand. *Pacific-Basin Finance Journal*, 9(4), 323–362.
- Zheng, J., & Khalid, H. (2022). The Adoption of Enterprise Resource Planning and Business Intelligence Systems in Small and Medium Enterprises: A Conceptual Framework. *Mathematical Problems in Engineering*, 2022.

In contrast, the MCCG of 2012 and 2017: Board Risk Management and Internal Oversight of the Top Malaysian PLCs

Dayana Mastura Baharudin, Haslindar Ibrahim, & Awaisu Adamu Salihi

School of Management, Universiti Sains Malaysia, Malaysia

Corresponding email: haslindar@usm.my

Abstract

This study examines the impact of the two key issues in Risk Management, which includes Effective Risk Management through Internal Control and the Establishment of the Board Risk Management Committee proposed under the Malaysian Corporate Governance Code (Code) in parallel between 2012 and 2017 towards firm financial profitability. This review, as of 14 August 2020, 900 Malaysian Public Listed Companies (PLCs) were compiled to form a target list of the top 100 PLCs based on market capitalization. The research employs statistical analysis, multiple regressions and deductive approach in the annual performance metrics. This study is a systematic analysis of the recent developments in the 2012 and 2017 Corporate Governance review which is also applicable to other PLCs other than the top 50 Malaysian PLCs scoring indices designed for the Effective Risk Management via Internal Control and the Establishment of Board Risk Management Committee.

Keywords: board risk management committee; corporate governance; effective risk management; firm performance; internal control.

Introduction

The Institute of Internal Auditors Research Foundation describes risks as obstacles to the achievement of the goals of the organisation (IIARF, 2013). There are threats resulting from performance uncertainties that could have a material effect on organisational objectives (Selim & McNamee, 1999). Managing risk is the appropriate assessment of the threats to which an entity is exposed, centered on the organizational structure and the strengths of the risk tolerance for monitoring and control. With mainstream experience in finance institutions, risk management has assumed a universal eminence (Mike, 2008; PwC, 2005, 2007; Deloitte, 2007). These entities have now adopted the task in such a way that it is virtually difficult to ascertain new financial firms without it (Power, 2003a). Risk mitigation is thus promoted by the financial regulators worldwide (Power, 2003b). The relationship between risk mitigation as an efficient model of corporate governance and enforcement with accounting practices has been the subject of many regulatory research.

The relationships between preparing financial statements and risk mitigation involve enforcement research (Bhimani, 2009; Harney, 2010); Corporate governance, firm features and establishment of committee on risk mitigation (Subramaniam, McManus & Zhang, 2009); Threat estimation and valuation (Gasbarro & Zumwatt, 2008; Behr, Schmidt and Xie, 2010)

Risk analysis and continuity in financial results, and in many other circumstances (Krysiac, 2009).

Global policymakers have showed that the higher the significance in corporate governance in an effort to find an acceptable point of comparison in revenue recognition as a result of the 2008 recession. These policy makers include the Sarbanes-Oxley Act (SOX, 2002) and the Organization for Economic Cooperation and Development (OECD) philosophies of corporate governance (2004).

Problem Statement

"Risk mitigation" is a term in the modern political and economic climate that demands the attention of administrators, directors, and policy makers. Increasingly, companies of all sizes concentrate on the structural risks that might affect their long-term health and revenue growth. How should the management monitor the risk assessments of an organisation is one crucial question for businesses to answer. In particular, the big question should be that the top management create a special risk committee to help the organisation establish a mechanism for defining, assessing, and handling the most important risks.

The advantages of an effective risk committee are obvious: better management and business operations control by the executive committee; an ability to predict and react to events and patterns that otherwise would be ambiguous; the projection of a rational and accountable organisation behaviour that will please staff and policy makers, and not least but before proceeding to set up a risk committee, it should be noted that forming this very committee will generate risk on its own.

In outsourcing risk control obligation to the new committee, the Board will need to remain conscious of the fact that risk management, particularly structural and systemic risks, is among the key functions of the Board itself. In addition, to the degree that some other committees, particularly the audit committee, retain a certain role in risk management, a new risk committee may lead to confusion as to where the obligation of one committee ends and the authority of another starts. Redundant initiatives or, in any-case scenario, inability to completely handle a certain type of threat may be the result of such uncertainty.

It would possibly become a subject of interest in the current political , economic, and legislative climate to identify whether a risk committee would help the company, irrespective of the type of hazard a business encounters and whether it presently is capable in handling that challenge. Conversely, the obvious response is often uncertain in anticipation that forming a risk committee only to find it unsuccessful will be among the toughest implications for a company, pressuring the management to disband it and redistribute committee roles. Consequently, in the 2012 Malaysian Code of Corporate Governance (Code), it was proposed that a robust risk management strategy and internal control structure should be defined by the board (Eggleston, W. N., & Ware, D, 2009).

Therefore, this research aims to investigate the influence of the disclosure extent of the Effective Risk Management and Internal Control Framework and secondly, the influence of the disclosure extent of the Establishment of Board Risk Management Committee towards the financial performance.

Research Objectives

Research Objective 1

To review the effects on the financial performing outputs of the 50 Top Malaysian PLCs comparing the MCCG 2012, with the 2017 MCCG, on the Effective Risk Management and Internal Control Framework.

Research Objective 2

To review the effects on the financial performing outputs of the 50 Top Malaysian PLCs comparing the MCCG 2012, with the 2017 MCCG, on the Establishment of Board Risk Management Committee.

Research Questions

Research Question 1

Does the level of transparency of the Effective Risk Management and Internal Control Framework relative to the MCCG 2012 and the MCCG 2017 have an impact on the financial results of the top 50 Malaysian PLCs?

Research Question 2

Does the level of transparency of the Establishment of Board Risk Management Committee relative to the MCCG 2012 and the MCCG 2017 have an impact on the financial results of the top 50 Malaysian PLCs?

Literature Review

Malaysian Code of Corporate Governance 2012 – Risk Management Framework and Internal Control Systems

Principle 6 of the Malaysian Code of Corporate Governance have proposed the recognition and management of risks for the board through the formulation of a good risk management framework and internal control systems.

The executive committee should evaluate the risk appetite of the company and effectively define, analyse and track principal risks to preserve the interest of the owners and the property of the company. Threat management, internal regulations are essential and the management team should be dedicated to contextualising, establishing, and monitoring the internal control structure of the organisation. In order to ensure that the process is effective and functional, regular checking of the efficacy and reliability of the systems and techniques for internal controls must be carried out. Furthermore, the management should document the key features of the company's risk management process and internal controls scheme in the annual report (Securities Commission Malaysia, 2012).

Malaysian Code of Corporate Governance 2017 – Board Risk Management Committee

Principle B of the Malaysian Code of Corporate Governance 2017 (MCCG 2017) proposed Effective Audit and Risk Management which should be upheld by the Audit Committee and also by the Risk Management and Internal Control Framework of the organization.

The board of directors are accountable for the risk management and internal control processes of the organization. It should develop effective internal control policies and pursue confirmation that the mechanisms are operating efficiently. Furthermore, the board must guarantee that the internal management structure handles uncertainties and constitutes component of organizational culture. The expected outcome of the 2017 MCCG involves the need for businesses to make educated decisions under conditions of threat they want to endure and to enforce the security mechanisms to achieve their goals.

The board is presented with fair confirmation that negative impacts on the goals of the business resulting from what is expected to occur in the forthcoming years, so that the circumstances are minimised and controlled. Additional comprehensive activities anticipated for organisations by the MCCG 2017 include the need for the board to develop an appropriate risk management and internal control system and for the board to report the characteristics of its quality management system and the suitability of that guideline. A strengthened MCCG 2017 presumption involves that the board will set up a Risk Management Committee to monitor the risk management process and laws, comprising a significant majority of independent directors (Securities Commission Malaysia, 2017).

Evaluating the need to set up a Risk Management Committee for the Board

In deciding whether to follow the creation of an independent risk committee, there are several considerations that businesses should consider, in which three play a dominant role: Industrial, Historical, and Structural.

Industry risk profile: There are some sectors that are more prone to failures than others, as the case of the financial industry illustrates. In addition to major financial institutions, insurers are companies that take on uncertainty as part of their strategic priority, and that risk must be efficiently handled to be successful. If a company's core strategy's innate risk level is strong, then the board should critically try setting up a special committee to monitor how leadership may handle such threat. Nevertheless, there is a large array of industries outside financial services whose participants face major, and rather than smaller, risks. The three majors are pharmacological firms, aviation services, and petroleum companies. Risk is much more related to operational activities than to the financing (at least in the usual credit environment) for businesses in these sectors, and risk management is likely to require more subjective assessment than probabilistic forecasting. The question that businesses like these might just want to question itself is if the most significant types of risk they encounter are the aspects that can be helped to resolve by a specialized governing board.

Historical Risk Profile: In addition to businesses that bear a high risk by their design, there are other types of companies that might find a risk committee to be particularly suitable. One category could be the businesses that have traditionally failed to fully successfully handle their risk. Companies with major regulatory issues or substantially incorrect predictions regarding strong market developments, regardless of the business in which they are in, will need to consider how each key risks has earned almost no consideration that a specialized committee might be the best way of getting them back into reality appropriately. The presence of a risk committee could be as anything about interactions with the environment as it is about internal politics in such situations, but the advantages of such a committee may still outweigh the loss.

Structural Risk Profile: Eventually, there might be situations where, as an architectural concern, the preferred choice for the board of directors is a risk committee. Perhaps a powerful chairman or CEO's ambiguous promises preclude a full board from implementing extensive supervision of contingency management within the organization. Maybe the current audit committee is overburdened and is unable to give heed to the threat the matter requires. In these situations, it is particularly the obligation of independent directors to question if the board's structure allows a risk committee to be set up (Eggleston, W. N., & Ware, D, 2009).

Theoretical Framework

Agency Theory

The contribution of key players at various levels of an organization, defines the challenges of risk management. It is the duty of the board of directors and the CEO to set the corporate future strategy and establish the climate for a successful framework of threat assessment. Previous research typically indicates that, among other things, board independence by the management provides the most efficient monitoring and control of company operations.

Agency literature indicates that knowledge and impartiality are contributed by external directors that mitigate unscrupulous activities and company resource exploitation (Byrd and Hickman 1992; Fama and Jensen 1983a; Yatim, 2010). Therefore, it is possible that a board of directors with a greater proportion of independent directors would have higher degree of control of the risk mitigation of a corporation.

Furthermore, external directors may attempt to protect their public image as surveillance specialists because those associated with corporate financial scandals or bad performance are likely to be marginalized by the demand of directors (Fama 1980; Fama and Jensen 1983;

Gilson 1990; Yatim, 2010). Therefore, a risk management committee is likely to be set up by boards with a greater percentage of external directors to boost their monitoring capacity (Yatim, 2010).

Conceptual Framework

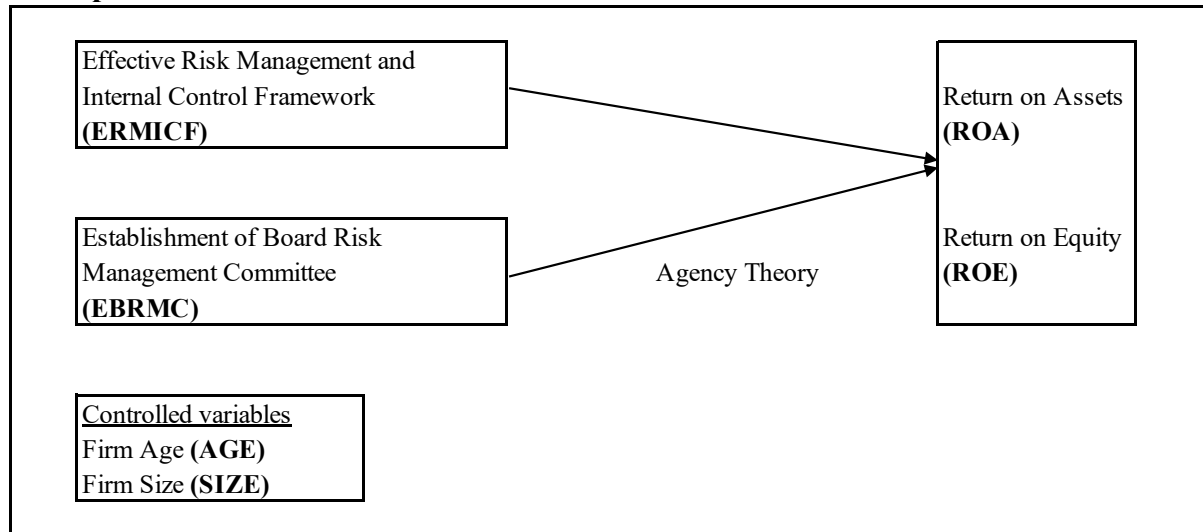


Figure 1. Conceptual Framework – Risk Management

Hypotheses of the study

Hypothesis 1(a): Effective Risk Management and Internal Control Framework has positive impact on firm financial performance during the MCCG 2012 era represented by Return on Equity.

Hypothesis 1(b): Effective Risk Management and Internal Control Framework has positive impact on firm financial performance during the MCCG 2017 era represented by Return on Equity.

Hypothesis 1(c): Effective Risk Management and Internal Control Framework has positive impact on firm financial performance during the MCCG 2012 era represented by Return on Assets.

Hypothesis 1(d): Effective Risk Management and Internal Control Framework has positive impact on firm financial performance during the MCCG 2017 era represented by Return on Assets.

Hypothesis 2(a): The Establishment of Board Risk Management Committee has positive impact on firm financial performance during the MCCG 2012 era represented by Return on Equity.

Hypothesis 2(b): The Establishment of Board Risk Management Committee has positive impact on firm financial performance during the MCCG 2017 era represented by Return on Equity.

Hypothesis 2(c): The Establishment of Board Risk Management Committee has positive impact on firm financial performance during the MCCG 2012 era represented by Return on Assets.

Hypothesis 2(d): The Establishment of Board Risk Management Committee has positive impact on firm financial performance during the MCCG 2017 era represented by Return on Assets.

Research Models for Empirical Testing

Model 1

$$ROE = \beta_0 + \beta_1ERMICF + \beta_2EBRMC + \beta_3AGE + \beta_4SIZE + \epsilon_{it}$$

Whereas: ROE = Return on Equity for measuring accounting performance of the top 50 Malaysian PLCs (external perspective in terms of shareholders). ROA = Return on Assets for measuring accounting performance of the top 50 Malaysian PLCs (internal perspective in terms of management). ERMICF = Effective Risk Management and Internal Control Framework. EBRMC = Establishment of Board Risk Management Committee. AGE = Firm Age. SIZE = Firm Size. ϵ_{it} = Error term

Model 2

$$ROA = \beta_0 + \beta_1ERMICF + \beta_2EBRMC + \beta_3AGE + \beta_4SIZE + \epsilon_{it}$$

Framework and research methods of the analysis of variables and their operational definitions

A purposive sampling technique of the top 50 market capitalization-based PLCs from the populace of 784 Malaysian PLCs as of 14 August 2020 was used in this analysis. In reviewing the annual reports, this study offers descriptive and inferential statistics, multiple regression and textual analysis. For the years 2016, 2017 and 2018, the 3-year data set for this study will be clarified further.

Attributed to the reason that MCCG 2012 is still consistent and is in full flow, 2016 was selected. As MCCG 2017 was published in 2017, the year 2017 was selected in which businesses are in the process of upgrading their corporate governance practises from MCCG 2012 to MCCG 2017 and the suggested improvements in MCCG 2017 are nearly impossible to be implemented.

2018 was selected to see the implications of the reform implemented in MCCG 2017 and to see that it is possible that the new Code will be applied slowly. As a consequence, taking these 3 years will allow the researcher to distinguish between both before and after results of the MCCG 2017.

Scoring Indices

Effective Risk Management and Internal Control (6 items)

- Determine company's level of risk tolerance
- Identify, assess and monitor key business risks
- Safeguard shareholder's investment
- Safeguard company's assets
- Articulate, implement and review internal control framework
- Mitigation of key risk areas

Establishment of Board Risk Management Committee (5 items)

- Comprises a majority of independent directors
- Oversee the company's risk management framework
- Oversee the company's risk management policies
- Seek assurance that the systems are functioning effectively

Ensure that risk management and internal control forms part of its corporate culture

Significance of Study

The Malaysian Code of Corporate Governance 2017 has evolved and strengthened through the years of resilience of the chaos due to the economic recession of 1999 in Asia and the world-wide financial crisis of 2008.

There are six elements of the Effective Risk Management and Internal Control Index that can be considered to be extremely strict for those PLCs which are not in the top 50 category, but ultimately for the advantage none other than the PLC itself and its investors if all six criteria can be met.

Five elements of the specifications obtained from the 2017 Malaysian Corporate Governance Code are required for the formation of the Board Risk Management Committee and are also considered to be very detailed since the PLCs should be able to disclose five components to reflect the advantages of setting up a Board Risk Management Committee.

Discourse and Strategies for Future Study

This study examines the pre-and-post review of the 2017 Malaysian Corporate Governance Code, taking into consideration the need for Effective Risk Management and Internal Control, as well as the need to create a Board Risk Management Committee during the 2012 MCCG era in comparison to the 2017 MCCG period, as well as the 1999 Asian financial meltdown and the global recession period of 2008.

Future research should look at the consequences of the dual tragedy in terms of the aftermath of the Covid-19 pandemic, which also has a profound impact on the market. The Covid-19 pandemic, which, combined into one, has impacted all nations around the globe in terms of social and environmental crisis, has contributed to the downfall of businesses and future researchers will want to find a more in-depth and stronger role for the Risk Management Committee of the Board.

References

- Abdullah, M. (2013). Quality of corporate mandatory disclosure in Malaysia: evidence from two methods. 4th international conference on business and economic research (4th ICBER 2013) proceeding 04 - 05 March 2013. Golden Flower Hotel, Bandung, Indonesia. Website: www.internationalconference.com.my
- Agusman, A., Gasbarro, D., Monroe, G., & Zumwalt, J. (2008). Accounting and capital market measures of risk: Evidence from Asian Banks during 1998-2003. *Journal of Banking & Finance*, 32, 480 - 488.
- Amoako, G. K & Asante, S. (2013). Compliance with international financial reporting standard 7 (IFRS 7): A study of listed banks in Ghana. *Research Journal of Finance and Accounting*, 3(4). Bank for International Settlement (BIS, 2014). Basel principles. Association of Chartered Certified Accountants (ACCA) Research Report, (74), London.
- Behr, P., Schmidt, R., Xie, R. (2010). Market structure, capital regulation and bank risk taking. *Journal of Financial Services Research*, 37(2), 131-158.
- Bhimani, A. (2009). Risk management, corporate governance and management accounting: Emerging interdependencies. *Management Accounting Research*, 20, 2 - 5.
- Byrd, J. W., & Hickman, K. A. (1992). Do outside directors monitor managers? Evidence from tender offer bids. *Journal of Financial Economics*, 32, 195–221.
- Central Bank of Nigeria (CBN, 2006). Code of corporate governance for banks in Nigeria post consolidation. Deloitte (2014). IFRS7 Financial Instruments Disclosures.
- Deloitte (2007). IASPLUS comparison of IFRSs to national and regional GAAPs.

- Eggleston, W. N., & Ware, D. (2009). Does your board need a risk committee? *Director & Boards*, 33(3), 54-55.
- Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of Political Economy*, 88, 288–307.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics*, 26(2), 301–326.
- Gilson, S. C. (1990). Bankruptcy, boards, banks, and block-holders: Evidence on changes in corporate ownership and control when firms default. *Journal of Financial Economics*, 27(2), 355–388.
- Harney, S. (2010). Accounting, risk, and revolution. *Critical Perspectives on Accounting*, 21(1), 14-17.
- Hodgdon C., Tondkar, R. H., Harless, D. W. & Adhikari, A. (2008). Compliance with IFRS disclosure requirements and individual analysts forecast errors. *Journal of International Accounting, Auditing and Taxation* 17, 1-13.
- Hodgdon, C., Tondkar, R. H., Adhikari, A. & Harless, D. W. (2009). Compliance with international financial reporting standards and auditor choice: new evidence on the importance of the statutory audit. *The International Journal of Accounting*, 44, 33-55.
- Institute of Internal Auditors Research Foundation (IIARF, 2013). Closing the gaps in third party risk management. Defining a larger role for internal audit, retrieved 12/4/2014 at cdn.cfo.com/content/uploads/2013/crow- IAA-study.pdf.
- International Accounting Standards Board. (2007). *International financial reporting standards, IFRS7 Financial Instruments: Disclosures*. London: IASB.
- International Accounting Standards Board. (2009). *IASB enhances financial instruments disclosures*. Press Release. London: IASB.
- Korosec, B. & Horvat, R. (2005). Risk reporting in corporate annual reports. *Economic and Business Review*, 7(3), 217-237.
- Krysiak, F.H. (2009). Risk Management as a tool for sustainability, *Journal of Business and Ethics*, 85, 483-492.
- Mikes, A. (2009). Risk management and calculative cultures. *Management Accounting Research*, 20, 18-40.
- Organization for Economic Co-operation and Development (OECD) (2004). *Principle of Corporate Governance*.
- Owusu-Ansah, S. (1998). The impact of corporate attributes on the extent of mandatory disclosure and reporting by listed companies in Zimbabwe. *International Journal of Accounting*, 33(5), 605-631.
- Power, M. K. (2003a). Enterprise risk management and the organization of uncertainty in financial institutions. In: Knorr-Cetina, K., Preda, A. (Eds.), *the Sociology of financial markets*. Oxford University Press, Oxford.
- Power, M.K. (2003b). *The invention of operational risk*. London School of Economics and Political Science, ESCR Centre for the Analysis of Risk and Regulation, Discussion Paper No. 16, London.
- PricewaterhouseCoopers (PwC, 2005). *Risk perspectives: bringing together risk management insights from the banking industry*.
- PricewaterhouseCoopers (PwC, 2013). *International Financial Reporting Standards (IFRS) Disclosure Checklist*. Retrieved 12/12/2013 at Inform.pwc.com.
- Sarbanes-Oxley Act (SOX, 2002). *A guide to the Sarbanes Oxley*.
- Securities and Exchange Commission (SEC) (2011). *Code of corporate governance for public companies in Nigeria*.
- Securities Commission Malaysia (2012), *Malaysian Code of Corporate Governance 2012*, Kuala Lumpur, Malaysia

- Securities Commission Malaysia (2017), Malaysian Code of Corporate Governance 2017, Kuala Lumpur, Malaysia
- Spetz, J. & Baker, L. (1999). Has managed care affected the availability of medical technology? Public Policy Institute of California, Baker, San Francisco, CA.
- Street, D. & Gray, S. (2001). Observance of international accounting standards: factors explaining non-compliance.
- Subramaniam, N. McManus, L. & Zhang, J. (2009). Corporate governance, firm characteristics and risk management committee formation in Australian companies. *Managerial Auditing Journal*, 24 (4), 316-339.
- Yatim (2010), Board structures and the establishment of a risk management committee by Malaysian listed firms, *Journal of Management & Governance*, 14(1), 17-36

The Moderating Role of Political Stability on The Relationship Between Audit Committee Characteristics, Board of Director Characteristics and CSR in Jordan

Sharaf Salem Mohammad Alhyasat, Haslindar Ibrahim, & Dayana Mastura Baharudin

School of Management, Universiti Sains Malaysia, Malaysia

Abstract

This study aims to clarify the moderate role of political stability in the relationship between the audit committee, characteristics of the board of directors and corporate social responsibility in Jordan, as it is hoped that it will increase the awareness of researchers, academics and professionals of the importance of political stability and its impact on the performance of companies. The political stability variable was chosen based on the political stability indicator. This study is considered the first of its kind in Jordan, especially as a result of the instability that the country is going through in the surrounding region, and the Syrian war, the Libyan crisis, the Iraqi crisis, and the subsequent refugee cases to Jordan. The study will include all companies listed on the Amman Stock Exchange. For the period 2010 - 2020, 228 companies. It is also hoped that the result will indicate a positive impact of the characteristics of the board of directors and audit committees and their diversity on social responsibility, and the existence of a negative mediating role for political stability on the relationship between the characteristics of the board of directors, audit committees and social responsibility.

Keywords: audit committee characteristics; board of director characteristics; political stability.

Introduction

The idea of corporate social responsibility (CSR) and corporate governance CG have been proposed to help the firms to achieve equilibrium between profitable operation and moral practice. By realizing this, organizations not only meet the prospect of the investors and other stakeholders, but also prove a commitment toward social and environmental responsibility. Therefore, CSR and CG cannot be separated, but are a part of the business system that an organization follows and uses to convey results (Sundarasen et al., 2015).

Freeman (1984) argues that corporate managers are required to satisfy the need of stakeholders, to maximize firms' value. More precisely, Jensen (2001, 2002) points out that to maximize shareholder value, firms need to build healthy relationships with several stakeholder groups. The stakeholder theory proposes that firms have contracts with their stakeholders and the firm's value depends on its capability to fulfill these contracts. Firms could face both monetary and reputational losses from failing to stratify management's interests with those of their stakeholders. Effective stakeholder management is a critical requirement for firm success (Cornell & Shapiro, 1987). A successful relationship is based on trust, and the company can create that confidence by meeting and exceeding responsibilities to stakeholders (Hill & Jones, 1992).

Consequently, the board of directors, as representatives of the shareholders, plays an essential role in overseeing the creation and implementation of management's plans to balance the interests of several stakeholders (Cornell & Shapiro, 1987). Fombrun (2006) mentions that the primary corporate governance mechanisms in the board of directors, which have implications for signaling and reporting behavior (Haniffa & Cook, 2005). An agency view is invoked to explain how a higher quality board would be willing to demonstrate a greater degree of transparency and accountability through greater voluntary disclosures, thus reducing information asymmetry arising from the variance between ownership and management

(Muttakin et al. 2015). Mateos de Cobo et al. (2012) indicate that board diversity, in particular, is increasingly seen as a desirable characteristic of board structure, for example, the presence of women and foreign directorship provides a broader range of knowledge and experience that result in better decision-making. It is the nature of women to be more concerned about environmental issues (Diamantopoulos et al., 2003) and with ethical behavior (Ford & Richardson, 1994). Also, board diversity may lead to increase creativity and innovation (Campbell & Minguez-Vera, 2008).

To assure diversity, some countries around the world have introduced mandatory quotas for female directors, such as Norway, Spain, France, and Italy (Schwizer et al., 2012). In Jordan, Corporate Governance Code no. 2 states: "every organization should have a board of directors that has an optimal size with the competences to achieve its required roles and responsibilities, taking into consideration balanced mix of age, gender, and experience" (JSC, 2010: 4).

Another aspect of board characteristics as an indicator of board independence is, for instance, separation of chairman and CEO positions, which may enhance monitoring quality and independent execution of auditing, thereby reducing the withholding of information from the public. As a consequence, CSR initiatives regarding the quality and transparency of the report are expected to improve (Sundarasan et al., 2015).

Therefore, the purpose of the current study is to examine the moderate role of political stability on the relationship between audit committee characteristics, board of director characteristics and CSR of Jordanian firms listed on Amman Stock Exchange (ASE).

Literature Review

This section presents a review of recent academic literature that address the relationship between board characteristics and corporate social responsibility reporting and there are different perspectives and dimensions used to find this relationship.

Giannarakis (2014) examines the relationship between corporate governance (CG) and financial characteristics (FC) and the level of corporate social responsibility (CSR) disclosure in the USA. The sample consists of 100 companies during the year 2011, Bloomberg is used as a proxy for the level of CSR disclosure, A multiple linear regression was incorporated to explore the relationship of corporate characteristics with CSR disclosure. The results show a positive relationship between company size, the board commitment, and profitability with the extent of CSR-disclosure, whereas the figures indicate a negative correlation between financial leverage and length of CSR-disclosure.

Juhmani (2014) aims to investigate the extent of social and environmental information disclosure practices of companies listed on Bahrain Bourse, in addition to determine the influence of firm size, profitability, firm age, financial leverage, and firm size of the extent of social and environmental information disclosures. The study sample was comprised of 33 Bahraini companies during the year 2012. Descriptive statistics and multiple regression analysis were used to determine the factors that explain social and environmental information disclosure level. The findings show that firm size and financial leverage had a significant relationship with the level of social and environmental information disclosure.

Harjoto, et al., (2014) study the impact of board diversity on firms' social responsibility performance by using seven measures of board diversity across 1,489 United States firms between the years 1999 to 2011. The analysis figures indicated that gender diversity increases the overall CSR by increasing CSR strengths and reducing CSR concerns. Also, race, tenure, and expertise differences improve the overall CSR by reducing the CSR concerns. Furthermore, board diversity significantly increases CSR performance by increasing CSR strengths and decreasing CSR concerns for firms producing consumer-oriented products and firms operating in more competitive industries. As a control variable, total assets (ASSET), net

sales (SALES), and return on asset (ROA) are positively associated with CSR because larger and more profitable firms have more resources available to engage in CSR activities.

Sundarasan, et al., (2015) examine the impact of board composition on corporate social responsibility for selected Malaysian companies in Bursa Malaysia using a sample of 225 companies during the years 2011 and 2012. CEO Duality, non-executive directors, women, and independence of non-executive officers representational board composition, while CSR-level used as proxy. Overall findings show that non-executive directors and independent non-executive directors demonstrate a negative relationship while female board members indicate a positive relationship. The only variable that affected positively on the level of CSR initiatives is the presence of females on the board. As for family and non-family businesses, the main findings are a positive relationship between non-executive and CSR initiatives in non-family business and a negative association between independent non-executive directors and CSR for family-controlled business.

Stuebs and Sun (2015) examine the relationship between corporate governance and corporate social responsibility based on the stakeholder theory. The sample consists of 2,329 firms for the years 2004 and 2005. Regression analyses were used to test the relationship, and results indicate a positive and significant relationship between corporate governance and social responsibility, meaning good governance leads to good corporate social responsibility performance.

Badrul Muttakin et al., (2015) study the relationship between firm size, firm profitability, board diversity (namely, board gender and board nationality) and the extent of corporate social responsibility (CSR) disclosures, using a sample of 116 listed Bangladeshi non-financial companies for the period 2005-2009. Multiple regression analysis was used to examine the relationship. The results show that firm size and profitability are positively and significantly related to CSR disclosures. Also, it was found that female board members had a negative impact on CSR disclosures while foreign directorship had a positive effect on such disclosures.

Hypotheses Development

The following are the testable hypotheses developed based on the reviewing on past related studies.

- H1: Role of duality is negatively associated with a company's level of CSR.
- H2: Board independence is positively associated with a company's level of CSR.
- H3: Board nationality is positively associated with a company's level of CSR.
- H4: Women directors are positively associated with a company's level of CSR.
- H5: Directors' age is positively associated with a company's level of CSR.
- H6: Board size is positively associated with a company's level of CSR.
- H7: Board education is positively associated with a company's level of CSR.
- H8: Board Experience is positively associated with a company's level of CSR.
- H9: Board committees are positively associated with CSR.
- H10: Board ownership is positively associated with a CSR.
- H11: Audit committee independence is positively associated with a CSR.

- H12: Audit committee size is positively associated with a CSR.
- H13: Audit committee nationality is positively associated with a CSR.
- H14: Audit committee gender is positively associated with a CSR.
- H15: Audit committee age is positively associated with a CSR.
- H16: Audit committee education is positively associated with a CSR.
- H17: Audit committee experience is positively associated with a CSR.
- H18: Political stability is negatively associated with a CSR.
- H19: Political stability is moderating the relationship between board of directors and CSR.
- H20: Political stability is moderating the relationship between audit committee characteristics and CSR.

Methodology

Population and Sample

The population of the study composes of all the Jordanian companies listed on the Amman Stock Exchange (ASE), for the period 2010 to 2020. The total number of 228 listed companies comprises 65 firms from industrial sector, 54 firms from service sector, and 109 firms from financial companies. The inclusion of companies representing all sectors may give us the opportunity to discover the concerns of each sector in terms of social responsibility and make comparisons between them.

The sample of the study will include the companies that also meet the following conditions: (1) The firm is listed on ASE during the period 2010-2020; and (2) Completed and data available for the period 2010-2020.

Data collection

The data (CSR data and other variables) will be collected from the firms' annual reports, as well as the directory of publicly held corporations available on the ASE site. Content analysis will be used to extract the data from these sources.

Variables

Dependent Variable

The dependent variable in this study is the level of corporate social responsibility reporting. CSR-level was developed by prior studies of Wiseman (1982), Grey et al. (1995a; b1995), Haniffah and Cooke (2002), and Chan (2002). A total of 28 items is found in the CSR checklists, divided into four sections: employee welfare, environmental protection, community contributions and product or service improvement each segment contain of subtitiles. Data will be collected through analysis of the firm's annual reports and the scores rated as follows: 1 if the item is disclosed in the annual report and 0 if the item is not disclosed.

Gray et al., (1987), Ernst and Ernst, (1978), Mathews (1993), and Perks (1993) provide illustrations and classifications of disclosure, which may include information concerning the environment, energy, community involvement, products and employee/human resources.

Independent Variables

The independent variables investigated are some of board of directors characteristics comprises the following dimensions: CEO duality, board independence, board size, board nationality, gender, age, education and experience. Meanwhile, audit committee characteristics comprises the following dimensions: audit committee independence, audit committee size, audit committee nationality, gender, age, education and experience.

Moderating Variable

The current study will be used political stability as moderating variable as measured by referring to the political stability index published by the World Bank. It indicates the likelihood of political instability and/or politically motivated violence, including rule of law, terrorism, and corruption. The score ranges from -2.5 (weak) to $+2.5$ (strong).

Control Variables

The current study will control for a number of variables such as those used in similar studies such as firm size, financial leverage and firm performance as shown in Table 1 below. Table 1 shows the measurement of variables and the proxies used in this study.

Table 1. Variables of the Study

Variable	Measurement	Reference
Dependent variable		
CSRLEV	Total disclosure of the company/ Total maximum disclosure score.	Wiseman (1982), Grey et al. (1995a; b1995), Haniffah and Cooke (2002), and Chan (2002).
Independent variables		
Duality of the Chairman and the CEO (DUAL)	Dummy variable equals 1 if same person holds the position of CEO and Chairman of the firm, otherwise 0.	Muttakin et al. (2015).
Board independence (BIND)	Percentage of independent directors on the board.	Diamantopoulos et al. (2003).
Board Size. (BSIZE)	Number of board of directors.	Giannarakis (2014).
Board Nationality (BNAT)	Percentage of non-Jordanian directors on the board.	Harjoto et al. (2015).
Director gender (DGEN)	Percentage of female directors on the board.	Campbell & Mínguez-Vera (2008).
Director age diversity (AGE)	The standard deviation for board director's year of birth.	Harjoto et al. (2015).
Educational level (EDUL)	Assigned value 1, if the director holds a university degree, or 0 otherwise.	Campbell & Mínguez-Vera (2008).
Educational institution (EDUI)	Assigned value 1, if the institution in a developing country, or 0 otherwise.	Campbell & Mínguez-Vera (2008).
An educational field (EDUF)	Assigned value 1, if the field is business, or 0 otherwise.	Campbell & Mínguez-Vera (2008).
Experience (EXP)	Number of years.	Harjoto et al. (2015).
Field of Exp (EXPF)	Assigned value 1, if the field is managerial, or 0 otherwise.	Harjoto et al. (2015).
Sector (EXPS)	Assigned value 1, if the sector is Government, or 0 otherwise.	Harjoto et al. (2015).

Variable	Measurement	Reference
Country (EXPC)	Assigned value 1, if the country is a developing, or 0 otherwise.	Harjoto et al. (2015).
Board Committees (BCOMM)	Measured by the total number of committees in the board.	Lu et al. (2015).
Board Ownership (BOWN)	Measured by the percentage of ordinary shares owned by the directors.	Schwizer (2012).
Audit committee independence (AIND)	Percentage of independent auditors on the committee.	Stuebs and Sun (2015).
Audit committee Size. (ASIZE)	Number of Audit committee members.	Sundarasan and Rajangam (2016).
Audit committee Nationality (ANAT)	Percentage of non-Jordanian auditors on the committee.	Zhang (2012).
Audit committee gender (AGEN)	Percentage of female auditor on the committee.	Harjoto et al. (2015).
Audit committee age diversity (AAGE)	The standard deviation for Audit committee year of birth.	Lu et al. (2015).
Audit committee Educational level (AEDUL)	Percentage of postgraduated auditor on the committee.	Zhang (2012).
Audit committee Experience (AEXP)	Number of years.	Diamantopoulos et al. (2003).
Moderate Variable Political Stability (POL)	political stability index.	Radu (2015).
Control variables Firm Size (FSIZE)	Total assets at the end of the fiscal year.	Schwizer (2012).
Financial leverage (FLEV)	Total debt / total assets at the end of the fiscal year.	Schwizer (2012).
Firm performance (PERF)	Return on equity (ROE): Net income / total equity.	Schwizer (2012).

The Model

The following models are estimated to examine the relationship between board characteristics, audit committee and political stability as moderating variable against Corporate social responsibility (CSR) reporting:

$$CSRLEV = \beta_0 + \beta_1 DUAL + \beta_2 BIND + \beta_3 BSIZE + \beta_4 EDUL + \beta_5 EDUI + \beta_6 EDUF + \beta_7 EXP + \beta_8 EXPF + \beta_9 EXPS + \beta_{10} EXPC + \beta_{11} BNAT + \beta_{12} DGEN + \beta_{13} AGE + \beta_{14} BCOMM + \beta_{15} BOWN + \beta_{16} AIND + \beta_{17} ASIZE + \beta_{18} ANAT + \beta_{19} AGEN + \beta_{20} AAGE + \beta_{21} AEDUL + \beta_{22} AEXP + \beta_{23} FSIZE + \beta_{24} FLEV + \beta_{25} PERF + \varepsilon$$

$$CSRLEV = \beta_0 + \beta_1 DUAL + \beta_2 BIND + \beta_3 BSIZE + \beta_4 EDUL + \beta_5 EDUI + \beta_6 EDUF + \beta_7 EXP + \beta_8 EXPF + \beta_9 EXPS + \beta_{10} EXPC + \beta_{11} BNAT + \beta_{12} DGEN + \beta_{13} AGE + \beta_{14} BCOMM + \beta_{15} BOWN + \beta_{16} AIND + \beta_{17} ASIZE + \beta_{18} ANAT + \beta_{19} AGEN + \beta_{20} AAGE + \beta_{21} AEDUL + \beta_{22} AEXP + \beta_{23} FSIZE + \beta_{24} FLEV + \beta_{25} PERF + \beta_{26} POL + \varepsilon$$

$$CSRLEV = \beta_0 + \beta_1 DUAL + \beta_2 BIND + \beta_3 BSIZE + \beta_4 EDUL + \beta_5 EDUI + \beta_6 EDUF + \beta_7 EXP + \beta_8 EXPF + \beta_9 EXPS + \beta_{10} EXPC + \beta_{11} BNAT + \beta_{12} DGEN + \beta_{13} AGE + \beta_{14} BCOMM + \beta_{15} BOWN + \beta_{16} AIND + \beta_{17} ASIZE + \beta_{18} ANAT + \beta_{19} AGEN + \beta_{20} AAGE + \beta_{21} AEDUL + \beta_{22} AEXP + \beta_{23} FSIZE + \beta_{24} FLEV + \beta_{25} PERF + \beta_{26} POL + \beta_{27} \Sigma \text{ Board Characteristics} * POL + \beta_{28} \Sigma \text{ Audit committee characteristics} * POL + \varepsilon$$

Where: CSRLEV = Level of CSR. DUAL = Duality of the Chairman and the CEO positions. BIND = Board independence. BSIZE = Board size. EDUL = Board educational level. EDUI = Board educational institution. EDUF = Board educational field. EXP = Board experience. EXPF = Field of Experience. EXPS = Experience sector. EXPC = experience country. BNAT = Board member's nationality. DGEN = Director's gender. AGE = Director's age diversity. FSIZE = Firm size. FLEV = Financial leverage. PERF = Firm performance. ε = Error term.

References

- Muttakin, M. B., Khan, A., & Subramaniam, N. (2015). Firm characteristics, board diversity and corporate social responsibility: Evidence from Bangladesh. *Pacific Accounting Review*, 27(3), 353-372.
- Chan, J. (2002). Voluntary corporate social disclosure (CSD) of Malaysian public-listed companies. *Accountant National*, 15(2), pp. 18-20.
- Cornell, B., Shapiro, A. C. (1987). Corporate stakeholders and corporate finance. *Financial Management*, 16(1), 5-14.
- Campbell, K., & Mínguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of business ethics*, 83(3), 435-451.
- Diamantopoulos, A., Schlegelmilch, B. B., Sinkovics, R. R., & Bohlen, G. M. (2003). Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation. *Journal of Business research*, 56(6), 465-480.
- Ernst, E., & Ernst. (1978). *Social Responsibility Disclosure: Survey of Fortune 500 Annual Reports*. Cleveland. Ohio.
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach* (p. 46). Boston: Pitman.
- Freeman, R. E., Wicks, A. C., Parmar, B. (2004). Stakeholder theory and the corporate objective revisited. *Organization Science*, 15, 364-369.
- Giannarakis, G. (2014). Corporate governance and financial characteristic effects on the extent of corporate social responsibility disclosure. *Social Responsibility Journal*, 10(4), 569-590.
- Gray, R., D. Owen, K. Manuders. (1987). *Corporate Social Reporting. Accounting and Accountability*. London: Prentice-Hall International.
- Gray, R., Kouhy, R., Lavers, S. (1995a). Methodological themes: constructing a research database of social and environmental reporting by UK companies. *Accounting, Auditing and Accountability Journal*, 8(2), pp. 78-101
- Gray, R., Kouhy, R. and Lavers, S. (1995b). Corporate social and environmental reporting: a review of the literature and a longitudinal study of UK disclosure. *Accounting, Auditing and Accountability Journal*, 8(2), pp. 47-77.
- Haniffa, R. M., & Cooke, T. E. (2002). Culture, corporate governance and disclosure in Malaysian corporations. *Abacus*, 38(3), 317-349.
- Haniffa, R. M., & Cooke, T. E. (2005). The impact of culture and governance on corporate social reporting. *Journal of accounting and public policy*, 24(5), 391-430.
- Harjoto, M., Laksmana, I., & Lee, R. (2015). Board diversity and corporate social responsibility. *Journal of Business Ethics*, 132(4), 641-660.
- Hill, C.W. and Jones, T. (1992). Stakeholder-agency theory. *Journal of Management Studies*, 29(2), pp.131-154.
- Jensen, M. C. (2001). Value maximization, stakeholder theory, and the corporate objective function. *Journal of applied corporate finance*, 14(3), 8-21.
- Jensen, M. C. (2002). Value maximization, stakeholder theory, and the corporate objective function. *Business ethics quarterly*, 12(02), 235-256.
- Jordan Securities Commission. (2009). *Corporate Governance Code for Shareholding Companies Listed on the Amman Stock Exchange*.
- Juhmani, O. (2014). Determinants of corporate social and environmental disclosure on websites: The case of Bahrain. *Universal Journal of Accounting and Finance*, 2(4), 77-87.
- Lu, Y., Abeysekera, I., & Cortese, C. (2015). Corporate social responsibility reporting quality, board characteristics and corporate social reputation: evidence from China. *Pacific Accounting Review*, 27(1), 95-118.

- Mathews, M. R. 1993. *Socially Responsible Accounting*. London: Chapman Hall.
- Radu, M. (2015). The impact of political determinants on economic growth in CEE countries. *Procedia-Social and Behavioral Sciences*, 197, 1990-1996.
- Schwizer, P., Soana, M., & Cucinelli, D. (2012). The relationship between board diversity and firm performance: The Italian evidence. Retrieved September, 10, 2013.
- Stuebs, M., & Sun, L. (2015). Corporate governance and social responsibility. *International Journal of Law and Management*, 57(1), 38-52.
- Sundarasan, S. D., Je-Yen, T., & Rajangam, N. (2016). Board Composition and Corporate Social Responsibility in an Emerging Market. *Corporate Governance: The International Journal of Business in Society*, 16(1), 35-53.
- Wiseman, J. (1982). An evaluation of environmental disclosures made in corporate annual reports. *Accounting, Organizations and Society*, 7(1), 53-63.
- Zhang, L. (2012). Board demographic diversity, independence, and corporate social performance. *Corporate Governance: The international journal of business in society*, 12(5), 686-700.

A Conceptual Paper on the Relationship Between Digital Competency, Employee Agility and Employee Performance Among Civil Servants in Malaysian Public University

Siti Zaleha Ahmad Nadzim & Hasliza Abdul Halim

School of Management, Universiti Sains Malaysia, Malaysia

Corresponding email: sitinadzim@student.usm.my

Abstract

This is a conceptual paper of a future study based on the review of literatures related to digital competency, employee agility and employee performance. The purpose of this study was to determine the mediating role of employee agility on the relationship between digital competency and employee performance among civil servants in Malaysian Public Universities. The result of this study proposed: (1) Digital competency has influenced on employee agility, (2) Employee agility has influenced on employee performance (3) Employee agility mediated the relationship between digital competency and employee performance. The present study contributed to the individual performance research stream by determining mediating role of employee agility in the relationship between digital competency and employee performance. It is recommended that Malaysian Public Universities to facilitate employee performance by improving digital competency and encourage agility among civil servants. The previous study had examined the digital competence variable that effect employee performance. However, the employee agility variable used as mediating variable to test the relationship between digital competence and employee performance are still limited in research. This study may provide a new perspective for research in the field of employee performance. Thus, studying the mediating effect of employee agility towards employee performance is mainly our contribution in this research.

Keywords: digital competency; employee agility; employee performance.

Introduction

With the rapid economic growth over the past six decades, Malaysia has now moved to the high-income category. To realize the vision, Malaysia adopts a new approach to strengthening its economic performance. Shared Prosperity Vision 2030 (SPV 2030) has been developed and launched in 2019. SPV 2030 is a pledge to develop Malaysia a country with long-term growth and fair and equitable distribution among income categories, ethnic groupings, regions, and supply chains. The commitment strives to improve political stability, boost national economy, and bring people together while honoring ethnic and cultural diversity as the nation-foundation. state's The SPV 2030's main goal is to ensure that all Malaysians have a good level of life by 2030 (SPV 2030 Blueprint, 2019).

By adopting MyDIGITAL in 2020, the government has devised a digital economy growth plan. MyDIGITAL is meant to work in tandem with national development policies including the Twelfth Malaysia Plan (12 MP) 2021-2025 and the SPV 2030. The digital economy has been highlighted as a key economic growth area (KEGA) in achieving SPV 2030, which aims to make Malaysia a country that develops sustainably with equitable and inclusive growth (Malaysia Digital Economy Blueprint, 2020).

To make MyDIGITAL a success, the government must employ digital technology to improve workflow efficiency and productivity, improve civil servants' digital skill sets, leverage data to improve government services, and expand the scope and quality of online

services for a better user experience. MyDIGITAL targeted 100% civil servants to possess digital literacy (MyDIGITAL Blueprint, 2020). Thus, there is a need for civil servants to master digital competence to deliver their tasks and improve their performance. A study on the Development and Implementation of the Public Sector Digital Government Competency and Capability Readiness (DGCCR) Framework 2017 considers the Whole-of-Government (WoG) approach and comprehensively formulates the direction of public sector human capital development in the digital government era. This study helps the public sector identify appropriate digital skill sets and serves as a benchmark for developing the talents of civil servants across service schemes, multidisciplinary and multi-level positions (DGCCR, 2018).

To embrace the changes in public service transformation, civil servants must be agile. Employee agility is defined as an employee's ability to adapt, react quickly, and rise to the challenge of new demands; employee agility usually translates into a strategic competitive advantage for the organization (Bahrami, et. al, 2016). The Chief Secretary to the Government Tan Sri Mohd Zuki Ali, recently urged civil servants to adhere the F.A.S.T.E.R principles of Flat, Agile, Streamlined, Tech-enabled, Efficient, and Resilient in ensuring that public servants can perform their duties with excellence and succeed in every thoroughly planned policy. FASTER principles refer to the need to work in a positive manner, that is, be open without having to be bound by outdated rules and constrained by various bureaucratic reasons and to be more agile in the execution of work which means to be more flexible and responsive in the implementation of systems and work processes (Sinar Harian, January 1, 2021).

Problem Issues and Statement

Digital transformation in public service delivery requires civil servants to adapt to the changes to perform well. However, agility among civil servants is still lacking. According to Mohd Bakhari, digitization encompasses not only ICT technology, but also processes and people. Although information technology is fast evolving, users of technology, such as civil servants and people, are still more comfortable working and dealing in the traditional manner, that is, manually and face to face. As a result, in order for the digital government agenda to succeed, civil servants and the people especially the business sector, must adapt to using online services (Berita Harian, October 16, 2020).

According to the Prime Minister Tan Sri Muhyiddin Yassin, the existing procedures in public service and civil servant's way of working in which has been practiced for so long, is no longer suitable and need to be reviewed to facilitate the country's development. Changes in the public service delivery through digital Government required civil servants to be equipped with technology-based knowledge because they are not only the people who will handle the technology, but they are also agents to the Government in delivering information to the people (<https://www.pmo.gov.my>, July 6, 2020). However, the digital competence capability among civil servants is still insufficient. This can be seen clearly, especially when the COVID-19 pandemic hit the world. The world was shocked by the wave of e-learning/virtual meeting/video conferences that surprised many people, including civil servants from 'sleep.' There are also employees/educators who have long been accustomed to the use of e-learning/virtual meetings, but not least those who have just tried it for the first time. Clearly, the digitization skills and capabilities of public officials are not emphasized on various technologies. The existing service scheme also does not support the Digital Government agenda (Muhaini, 2020).

Malaysian Public University (MPU) services are divided into two categories which are academic matters including teaching and research, and non-academic matters involving administrative and support staff (Davis, 1996). Thus, both academic and non-academic matters in the industry were equally weighted in gaining the competitive advantage (Jain, Sinha, & Sahney, 2011; Davis, 1996). The administrative staff are the backbone of the University's

operation. Their roles are essential to ensure the success of the University. Therefore, a good work performance among administrative staff is vital for the success of a university. Hence, this study aims at analyzing and elaborating the mediating effect of the employee agility variable on digital competency and employee performance of civil servants in MPU.

Purpose of Research and Research Questions

The conceptual paper is intended to identify the links between digital competency, employee agility and employee performance among civil servants in Malaysian Public Universities. As such, research questions that will be addressed are: Is there a relationship between digital competency and employee agility among civil servants in Malaysian Public Universities? Is there a relationship between employee agility and employee performance among civil servants in Malaysian Public Universities? Does employee agility mediate the relationship between digital competency and employee performance among civil servants in Malaysian Public Universities?

Significance of the Research

The conceptual paper is significant as it will provide important implication in the human resources practices which might improve employee performance in public service delivery especially in Malaysian Public Universities. The study attempts to look into the impact of digital competency towards the employee performance. The study will also look into the mediating effect of employee agility between digital competency and employee performance. The result of these linkages may provide information benefits to the management of Malaysian Public Universities on human resource practices and policy making.

Delimitation and Limitation

This conceptual paper is delimited by insufficient reading of literatures from multi-discipline in order to get a broader scope of theoretical understanding. This conceptual paper too has its investigative limitations. For example, this paper is merely a review from other journals and data is yet to be collected. Another limitation is that the literature related to topics is not fully explored due to time constraints.

Discussion of the Literature Review Malaysian Public Universities

Higher education is a massive national agenda and its contribution to the economic and social wellbeing of the state is important. Higher Education Institution (HEI) plays important role as one of the enablers of SPV 2030 for Education and TVET. Malaysian Public University (MPU) is a well-known public institution that deliver undergraduate and postgraduate degrees, as well as pre-university foundation studies and diploma programs. The Ministry of Higher Education Malaysia (MOHE) lists 20 public universities in Malaysia as follows:

Table 1. List of Public Universities in Malaysia

No.	University
1.	International Islamic University Malaysia (IIUM)
2.	Universiti Sains Islam Malaysia (USIM)
3.	MARA University of Technology (UiTM)
4.	Universiti Pertahanan Nasional Malaysia (UPNM)
5.	Universiti Kebangsaan Malaysia (UKM)
6.	Universiti Utara Malaysia (UUM)
7.	Universiti Putra Malaysia (UPM)
8.	Universiti Pendidikan Sultan Idris (UPSI)
9.	Universiti Sultan Zainal Abidin (UniSZA)
10.	Universiti Teknikal Malaysia (UTEM)
11.	Universiti Tun Hussein Onn Malaysia (UTHM)

No.	University
12.	Universiti Malaya (UM)
13.	Universiti Malaysia Kelantan (UMK)
14.	Universiti Malaysia Pahang (UMP)
15.	Universiti Malaysia Perlis (UNIMAP)
16.	Universiti Malaysia Sabah (UMS)
17.	Universiti Malaysia Sarawak (UNIMAS)
18.	Universiti Malaysia Terengganu (UMT)
19.	Universiti Sains Malaysia (USM)
20.	Universiti Teknologi Malaysia (UTM)

Source: Ministry of Higher Education (MOHE) (2022).

Like other sectors, the higher education sector is no exception to facing the challenges of the digitalisation era. Industrial Revolution 4.0 (IR 4.0) is now demanding changes in automation technology that will also affect the service sector and education areas that will have a direct impact on the graduates produced later. Digital transformation in the global education industry validates the future roadmap to sustainable education management. The competitor ahead is not simply in Asian country however around the world seems driven by turbulent modification within the force of technology. The online education therefore has added new options of teaching, has created a wide variety of new courses, and has increased the enrolment in many academic institutions.

Gaining relatively a sustainable position for universities demands their preparedness to adapt to impactful changes imposed by the macro environment and integrating the key trends as part of their digital transformation strategy. To ensure that Malaysian Public University able to offer the best services to their students and stakeholders, and remain competitive, Malaysian Public University needs to transform in line with the advancement of digital technology. Today, digital technology is not only used in teaching and learning, research, and innovation, but also used in the delivery of non-academic and administrative services. Recognising that fact, Malaysian Public University took the initiative to undertake digital transformation. To remain competitive and agile, universities across the world are building digital campuses.

Employee Performance

Performance is the overall result or success of an individual throughout periods of duty in relation to the work standard, the targets or criteria that have been established in advance and agreed upon (Rivai, 2004). According to Rivai, performance is influenced by one's skills, abilities, and individual traits. The capacity of a person to do a work in accordance with predetermined accuracy, completeness, cost, and speed standards is known as employee performance (Sultan, et.al., 2012). Pradhan & Jenna (2017) describes performance into three dimensions which are task performance, adaptive performance, and contextual performance. Task performance is made up of job-specific actions, such as the core duties listed in the job description (Conway, 1999). The ability of a person to adapt to and provide crucial support for the job profile in a dynamic work environment is referred to as adaptive performance (Hesketh & Neal, 1999). Individual exhibit contextual performance, which is a sort of prosocial behavior, in a work environment.

Employee's performance is influenced by a variety of elements to enhance a particular set of behaviors and achieve the organization's goals within a predetermined time frame (Spencer & Spencer, 1993). There are three main elements that affect employee performance: an individual's willingness to work, their level of effort, and organizational support. Employee performance refers to what employees do and do not do that determines how much they contribute to the organization (Mathis & Jackson, 2004). Competence is a fundamental quality that a person must possess to meet the requirements of a position. It encompasses knowledge, skills, and personality factors that can affect performance. Intellectual, emotional, and social

competence are the three dimensions and components that make up an individual's competencies (Spencer & Spencer, 1993). There are a positive and significant relationship between employee competency and performance (Ismail & Abidin, 2010). To increase performance, staff members must be highly competent and able to adapt to changes in the business environment. This is consistent with the assertion made by Spencer and Spencer (1993) that competency affects employee performance.

Digital Competency

Mengual-Andres et al. (2016) claim that developing digital competence is a way to get a specific level of literacy suitable for today's society. Digital competence, according to Ferrari (2012), is "a set of knowledge, skills, attitudes, strategies, and awareness that are necessary when ICT and digital media are used to perform tasks, resolve problems, communicate, manage information, collaborate, create and share content, and build knowledge in a critical, creative, autonomous, flexible, ethical, and sensible form for work, entertainment, participation, learning, and socialisation." The term "digital competence," which has been used frequently in relation to digital knowledge and application, is defined as "the ability to explore and face new technological situations in a flexible way, to analyse, select, and critically evaluate data and information, to exploit technological potentials to represent and solve problems and build shared and collaborative knowledge, while fostering awareness of one's own personal responsibilities and respect of reciprocal rights/obligations (Spante et al., 2018).

Employee Agility

Employee agility refers to workforce that is flexible and well-trained, in which can easily and quickly adapt to new situations and opportunities (Muduli, 2013). Employee agility is often referred to as the capacity to respond swiftly to changes in the surrounding environment (Patil & Suresh, 2019). The traits of an agile employee have been categorised using a variety of frameworks. Sherehiy and Karwowski (2014) grouped the behavior of agile workforce into the following three dimensions which are proactive, adaptive, and resilient behavior. Proactive behavior includes anticipating problems related to change. Adaptive behavior, which is the ability to take on multiple responsibilities, shift easily from one role to another, and work simultaneously on different tasks in different teams. Resilient behavior includes a positive attitude regarding changes, new ideas, and technology. In a worldwide world with rapidly changing consumer demands, workforce agility has become a strategic requirement for information technology (IT) organisations. Because it enables firms to respond quickly to changes in the external environment and capitalise on emerging trends (Felipe et al., 2016), hence, an agile employee is a crucial component in the development of agile organization, as the employee may be trained to deal with uncertainty and complexity (Muduli, 2016). Employee agility has received very little attention from the research community despite its obvious value (Chonko & Jones 2005). Managers invariably lack knowledge about an organization's agile employee's competencies and the procedures that must be implemented in order to develop and support them (Alavi & Wahab, 2013).

The influence of digital competency on employee agility

Digital competence has been studied in various fields, particularly businesses and industries in embracing and leveraging the best technology can offer in this era of modernization, so much so that digital competence has very narrow and limited literature studied on employee agility. There were also calls on researching digital competence on workforce which is seemed to have been neglected (Murawski & Bick, 2017). One concern addressed by Murawski & Bick (2017) is nearly 50% of present employments in the United

States are risked by the rise of computers or computerisation, hence begs the question – which is the best set of digital competence fit for employability in this digital era?

An interesting note mentioned by Chakravarthy et al. (2014) that despite knowing that an organization's success can be attributed to agility, there were limited studies on how corporations develop and leverage on agility towards better performance. Meanwhile, there were arguments found in the study claiming digital competencies can help on developing agility and surprisingly, as of the time of their reporting, there were lacking empirical studies on digital competencies. However, the findings of the study proved that digital competencies neither directly affected organizational performance nor enabled agility, but other scholars suggested digital competency can indirectly improve organizational performance by enabling and facilitating agility. Thus, the researchers recommend investigating the relationships between digital competencies and other types of agility.

Except a study by Lim, et.al, (2021), the study found that digital competency could be an important skill to master to achieve workforce agility. In a study conducted in US among the large firms, the hypothesized relationship between IT competence and organizational agility was strongly supported by the data collected. Other than that, Ravichandran (2018) used the dimension of digital platform capability, information system capabilities, and information technology investment orientation to represent IT competency. In certain empirical studies, competence had been proved to depict less significant in relation to workforce agility. For instance, a literature cited in Muduli's (2016) paper, despite portraying to be one of the keys to agility, competence found to be less relevant in promoting workforce agility. However, a point to note, the study was looking into managerial area, including job rotation to create an agile environment. Based on the empirical finding, the current study proposes that employee agility could be enhanced by the employee digital competency. Hence, this study proposes.

Proposition 1: There is a positive relationship between digital competency and employee agility among civil servants in Malaysian Public Universities.

The influence of employee agility on employee performance

The relationship between employee agility and performance has not been adequately studied empirically. However, the concept of agility has been researched in relation to how it affects organizational performance. Past studies have focused on the practice of the concept of agility in organizations. Agility becomes a strategy in improving organizational performance in a changing and dynamic environment. Janssen (2010) pointed that agility is an organizational ability to react quickly and effectively to an environment which can change radically. The concept of agility means rapid, agile, and active movement. The root or origin of agility is derived from agile production. The agile production has been accepted as a successful strategy by producers that prepare them for a considerable performance (Mehrabi et al., 2013).

As defined by Goldman et al. (1995), agility is the organization ability to prosper in a competitive environment characterized by constant and unpredictable change. This definition can be stated more succinctly as a firm's ability to succeed in a turbulent environment. This shortened description relies on Emery and Trist's (1965) concept of a turbulent field, in which the environment is characterized as one with high levels of uncertainty. Manufacturers who are able to react and respond to an environment that frequently or continually pressures the firm to change while continuing to satisfy customers and achieve business objectives are considered to be agile. This can ensure that the organization can continue to survive and even improve performance even in a changing environment and customer's demand. However, an agile organization needs agile employees. Hosein & Yousefi (2012) stated that an agile workforce

is the major contributor to the realization of an agile organization and oversight of this factor may weaken the agility of the organization.

An agile employee also influences organization performance. According to Hopp, et al, (2004) when the right type of workforce agility is chosen according to the right conditions and is sophisticatedly implemented (Sawhney, 2013), workforce agility can have both direct and indirect benefits. Direct benefits are related to plant performance and incur lower costs due to a higher productivity of workers; increased responsiveness to customer demand; reduced queues due to higher flexibility; higher quality and a broadened product range that can be offered (Hopp et al., 2004; Ren et al., 2003; Katayama et al., 1999). Indirect benefits relate to an increase in learning; communication; problem solving; motivation and ergonomics (Hopp et al., 2004). This is also indirectly improved employee performance.

Early 21st-century business environments are characterized by uncertainty, ambiguity, and volatility, which compels companies to look for novel organizational and business models that will allow them to react rapidly and effectively to market changes (Dyer & Shafer, 2003). One competency utilized to handle these challenges is organizational agility, which is defined as an organization's capacity to recognize its environment, develop strategies and reactions to it, test them, and incorporate the learned information into the organization. (Dyer and Shafer, 2003; Trinh, Molla, and Peszynski, 2012; Worley, Williams, and Lawler, 2014) As a result, organizational agility had an impact on performance. Organizational agility growth has been shown to depend critically on employee agility (Dyer & Ericksen, 2006; Dyer & Shafer, 1998, 2003; Sherehiy, Karwowski, & Layer, 2007). Three core capabilities - proactivity, adaptivity, and resiliency - were used by Sherehiy et al. (2007) to categorize the characteristics of an agile workforce. Employee performance is influenced by these employees' talents. According to Varshney (2020), employee performance has been impacted by workforce agility. Therefore, based on the previous empirical findings, this study proposes that:

Proposition 2: There is a positive relationship between employee agility and employee performance among civil servants in Malaysian Public Universities.

The linkage between digital competency, employee agility and employee performance

Nowadays, digital transformation becomes the most important part of human life and needed in almost every business which is in pursuit of growth, expansion, quality and sustainability (Shinde et al, 2014). Digital transformation is the rapid innovation of technology to perform business activities, enhancing the performance of organizations, events, practices, and models in respond to the rising impacts and opportunities of evidence and computing technologies (Betz, 2016). It also allows organization to enhancing the performance of organization, operational efficiencies, customer experiences, and combination of digital and physical business (Al- Ruithe, 2018). Therefore, many organizations make changes through digital transformation to sustain their competitive advantage.

The digital workforce capability is an important factor in ensuring the success of an organization's digital transformation. According to Felin et al., (2012), individuals have served as the micro foundations of capabilities in various ways. Scholars have identified that the knowledge and experience of individuals matter, and previous research has posited that individual skills and abilities are central for understanding organisation-level outcomes. Felin et al., (2012) added that individual digital-savvy skill is conceptualised as the digital transforming capability in organization.

As described by Ferrari (2012), digital competency is the set of knowledge, skills, relationships, abilities, strategies, and awareness that are required for using information and communication technologies and digital media to perform tasks, solve problems, communicate, information management, cooperation, the creation and exchange of content, the accumulation

of knowledge effectively, efficiently, appropriately, critically, creatively”. In this new digital era, employee's digital competence is very important. Technical expertise is in high demand as a result of technological advancements and the management of numerous digital networks. Although persons in non-tech professions may not be required to know how to utilise software applications, they must be able to use them because they may have a significant impact on their daily work routine.

As a result, everyone should be aware of how new technologies work and how they might be implemented. The ability to perform statistical analysis is also essential to analyse data (Davies et al. 2011). Majority of HR leaders, according to Webber (2018), have significant challenges in acquiring the skills needed to support their company's digital transformation. Mohammadyari and Singh have demonstrated how a workforce's digital competency might influence the success of technology adoption (Mohammadyari and Singh, 2015). According to Csordas (2020), the higher digital competence means higher productivity. Higher- skilled people generate many more benefits at the same time, or in less time they produce the same benefits. Miikka et al. also think ICT is a potential source of productivity improvement (Miikka et al., 2013).

Digital technology adoption in organizations affects the daily tasks of employees. Tasks that were previously done manually need to be changed to the use of digital technology and this requires employees to have digital competence in performing their tasks. The changes that take place required employees to be agile. An agile workforce, according to Plonka (1997), has a positive attitude toward learning and self-development; good problem-solving ability; comfort with change, new ideas, and new technology; ability to generate innovative ideas; and the willingness to assume new responsibilities. Gunasekaran (1999) defined the characteristics of agile workforce as Information Technology (IT)-skilled workers. Breu et al. (2002) identified the initial indicators of workforce agility, including responsiveness to external change, benchmark for skill assessment, speed of skill development, speed of adaptation to new work environments, speed of information access, speed of IT change, use of mobile technologies, workplace independence, mobile information access, and collaborative technologies. Previous research found that workforce agility has influenced on employee's performance (Varshney & Varshney, 2020). Therefore, based on the previous empirical findings above, it is postulated that:

Proposition 3: Employee agility mediates the relationship between digital competence and employee performance among civil servants in Malaysian Public Universities.

Conceptual Model Development

This conceptual paper attempts to determine the relationship between digital competency and employee performance and being mediated by employee agility as shown in Figure 1.



Figure 1. Proposed Research Model

Conclusions

The findings provide a gateway to the study of the relationship between digital competency, employee agility and employee performance among civil servants in Malaysian Public Universities. In order to proceed the empirical research, a wider range of literatures need to be explored to obtain an insightful knowledge. Even though a conceptual paper, it is hoped that the effort helps contribute to supplements literatures for the references of scholars as well

as a significant impact to the management of Public Malaysian Universities, government and policy makers upon fully completion of the research.

References

- Alavi, S., & Wahab, D. A. (2013). A review on workforce agility. *Research Journal of Applied Sciences, Engineering and Technology*, 5:16, 4195-4199.
- Bahrami MA, et al., (2016). The Mediating Role of Organizational Learning in the Relationship of Organizational Intelligence and Organizational Agility, *Osong Public Health Res Perspect* <http://dx.doi.org/10.1016/j.phrp.2016.04.007>.
- Breu, K., Hemingway, C. J., Strathern, M., & Bridger, D. (2001). Workforce agility: The new employee strategy for the knowledge economy. *Journal of Information Technology*, 17(1), 21-31.
- Breu, K., Christopher, J. H., Mark, S. and David, B. (2002). "Workforce Agility: The New Employee Strategy for the Knowledge Economy", *Journal of Information Technology*, Vol. 17, No. 1, pp. 21-31
- Brown, L., George, B. and Mehaffey-Kultgen, C. (2018). The development of a competency model and its implementation in a power utility cooperative: An action research study. *Industrial and Commercial Training*, 50, pp. 123–135.
- Carretero, S., Riina Vuorikari, Yves Punie, & European Commission. Joint Research Centre. (2017). *DigComp 2.1 : the digital competence framework for citizens with eight proficiency levels and examples of use*. Publications Office.
- Chakravarty, A., Grewal, R., & Sambamurthy, V. (2013). Information Technology Competencies, Organizational Agility, and Firm Performance: Enabling and Facilitating Roles. *Information Systems Research*, 24(4), 976–997. <https://doi.org/10.1287/isre.2013.0500>
- Chonko, L. B., & Jones, E. (2005). The need for speed: Agility selling. *Journal of Personal Selling & Sales Management* 25: 4, 371-382.
- Conway, J.M. (1999). Distinguishing contextual performance from task performance for managerial jobs. *Journal of Applied Psychology*, 84(3), 3–13.
- Davies, A., Fidler, D. and Gordis, M. (2011). Future work skills 2020. <https://www.downes.ca/cgi-bin/page.cgi?post=20>
- Danneels, E. (2002). The dynamics of product innovation and firm competences. *Strategic management journal*, 23(12), 1095-1121.
- Davis, A. (1996). Employee assistance provision in higher education. *Employee Counselling Today: The The Journal of Workplace Learning*, 8(5), 4–12. <http://doi.org/10.1108/13665629610127735>.
- Digital Government Competency and Capability Readiness (DGCCR).(2020). Jabatan Perkhidmatan Awam. <http://www.jpa.gov.my>.
- Dyer, L., & Shafer, R. A. (2003). Dynamic organizations: Achieving marketplace and organizational agility with people (CAHRS Working Paper #03-04). Ithaca, NY: Cornell University, School of Industrial and Labor Relations, Center for Advanced Human Resource Studies. Available at <http://digitalcommons.ilr.cornell.edu/cahrswp/27/>.
- Felipe, C.M., Roldan, J.L. and Leal-Rodríguez, A.L. (2016). "An explanatory and predictive model for organizational agility", *Journal of Business Research*, Vol. 69 No. 10, pp. 4624-4631, doi: 10.1016/j.jbusres.2016.04.014.
- Ferrari, A. (2012). Digital competence in practice: An analysis of frameworks. Luxembourg Publication office of the EU.
- Gunasekaran, A. (1999). "Agile Manufacturing: A Framework for Research and Development", *International Journal of Production Economics*, Vol. 62, Nos. 1 & 2, pp. 87-105.

- Hesketh, B., & Neal, A. (1999). Technology and performance. In D.R. Ilgen & E.D. Pulakos (Eds), *The changing nature of performance: Implications for staffing, motivation, and development* (pp. 21–55). San Francisco, CA: Jossey-Bass.
- Ilomaki, L., Paavola, S., Lakkala, M. and Kantosalo, A. (2016). Digital competence —An emergent boundary concept for policy and educational research. *Education and Information Technologies*, 21, pp. 655–679.
- Ismail, R., & Abidin, S. Z. (2010). Impact of workers' competence on their performance in the Malaysian private service sector, 2(2), 25–36.
- Jain, R., Sinha, G., & Sahney, S. (2011). Conceptualizing service quality in higher education. *Asian Journal on Quality*, 12, 296–314. <http://doi.org/10.1108/15982681111187128>.
- Lim, Y. S., Hasliza, A. H., and T. Ramayah. (2021). Agile or not? The Upsurge of Diggcom and Social Media Usage Among Teachers. *Journal of Applied Structural Equation Modeling*: 5(2),1-21, July 2021 DOI: 10.47263/JASEM.5(2)04.eISSN: 2590-4221
- Malaysia Digital Economy Blueprint (2020). Economic Planning Unit, Prime Minister's Department.
- Mathis, R. L., & Jackson, J. H. (2004). *Human Resource Management* (10th ed.). Mason, Ohio: Thomson South-Western.
- Mohammadyari, S., & Singh, H. (2015). Understanding the effect of e-learning on individual performance: The role of digital literacy. *Computers and Education*, 82, 11–25. <https://doi.org/10.1016/j.compedu.2014.10.025>
- Mohd Bakhari Ismail (2020). Selesa kerja cara lama sekat keupayaan masyarakat. October 16, 2020. <https://www.bharian.com.my/amp/kolumnis/2020/10/742498/selesa-kerja-cara-lama-sekat-keupayaan-masyarakat-digital>.
- Mohd Zuki Ali (2021). Penjawat awam perlu lebih cemerlang. January 1, 2021. <https://www.sinarharian.com.my/ampArticle/117087>.
- Muduli, A. (2013). Workforce Agility: A Review of Literature. *IUP Journal of Management Research*, 12(3), 55–65.
- Muduli, A. (2016). Workforce agility: Examining the role of organizational practices and psychological empowerment. *Global Business and Organizational Excellence*, 36(5), 46–56. <https://doi.org/10.1002/joe.21800>
- Muhyiddin Yassin (2020). Teliti Semula Prosedur, Cara Kerja Pentadbiran Kerajaan Pasca COVID-19 – Muhyiddin. Julai 6, 2020, <https://www.pmo.gov.my/ms/2020/07/teliti-semula-prosedur-cara-kerja-pentadbiran-kerajaan-pasca-covid-19-muhyiddin/>.
- Muhaini binti Yahya (2020). Kajian Tahap Kompetensi Digital Pegawai Awam. *Varia Ranah: Sorotan Ilmiah Perkhidmatan Awam Jilid I dan II*. Jabatan Perkhidmatan Awam.
- Nambisan, S., Wright, M., & Feldman, M. (2019). The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. *Research Policy*, 48(8), 103773.
- Patil, M., & Suresh, M. (2019). Modelling the Enablers of Workforce Agility in IoT Projects: A TISM Approach. *Global Journal of Flexible Systems Management*, 20(2), 157–175. <https://doi.org/10.1007/s40171-019-00208-7>
- Plonka, F. S. (1997). “Developing a Lean and Agile Workforce”, *Human Factors and Ergonomics in Manufacturing*, Vol. 7, No. 1, pp. 11-20.
- Pradhan, R.K., & Jenna, L.K. (2019). Employee Performance at Workplace: Conceptual Model and Empirical Validation. *Business Perspectives and Research* 5(1) 69-85. DOI10.1177/2278533716671630
- Ravichandran, T. (2018). Exploring the relationships between IT competence, innovation capacity and organizational agility. *The Journal of Strategic Information Systems*, 27(1), 22–42. <https://doi.org/10.1016/j.jsis.2017.07.002>

- Rivai, V. (2004). *Manajemen Sumber Daya Manusia untuk Perusahaan Dari Teori ke Praktek*, Grafindo Persada, Jakarta.
- Shared Prosperity Vision 2030 Blueprint (2019). Ministry of Economic Affairs.
- Shafer, R. A., Dyer, L., Kilty, J., Amos, J., & Ericken, J. (2001, Fall). Crafting a human resource strategy to foster organizational agility: A case study. *Human Resource Management*, 40(3), 197-211. doi: 10.1002/hrm.1011.
- Sherehiy, B., Karwowski, W., & Layer, J. K. (2007). A review of enterprise agility: Concepts, frameworks, and attributes. *International Journal of Industrial Ergonomics* 37: 5, 445–460.
- Sherehiy, B. & Karwowski, W. (2014). The relationship between work organization and workforce agility in small manufacturing enterprises, *International Journal of Industrial Ergonomics* 44:3, 466-473.
- Spante, M., Hashemi, S. S., Lundin, M., & Algers, A. (2018). Digital competence and digital literacy in higher education research: Systematic review of concept use. In *Cogent Education*. <https://doi.org/10.1080/2331186X.2018.1519143>
- Spencer, M. L. J., & Spencer, S. M. (1993). *Competence at Work-Models for Superior Performance*. New York: John Wiley & Sons.
- Sultan, A., Irum, S., Ahmed, K., & Mehmood, N. (2012). Impact of training on employee performance: A study of telecommunication sector in Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 4(6), 646- 661.
- Trinh, P., Molla, A., & Peszynski, K. (2012). Enterprise systems and organizational agility: A review of the literature and conceptual framework. *Communications of the Association for Information Systems*, 31(1), 167-193.
- Ulrich, D. and Yeung, A. (2019). *Agility: the new response to dynamic change* Vol. 18 No. 4 2019, pp. 161-167, Emerald Publishing Limited, ISSN 1475-4398 *Strategic HR Review*.
- Varsney, D. & Varshney, N.K. (2020). Workforce Agility and its links to emotional intelligence and workforce performance: A study of small entrepreneurial firms in India, Wiley Periodicals, Inc. GBOE. 2020;39(5):1-11. wileyonlinelibrary.com/journal/Joe.
- Warner, K. S., & Wager, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3), 326-349.
- Waskito, K.S. (2021). The Role of Digital Competence on Lecturer Performance of S1 Accountancy Study Program of Private Universities in Bandung Metropolitan Area Through Work Satisfaction with Servant Leadership Moderating Variable, *Dinasti International Journal of Management*, <https://dinastipub.org/DIJMS>, Volume 3, Issue 1, September 2021 E-ISSN : 2686-522X, P-ISSN : 2686-5211.
- Weber, Y., & Tarba, S. Y. (2014). Strategic agility: A state of the art. *California Management Review*, 56(3), 5-12.
- Worley, C., Williams, T., & Lawler, E., III. (2014). *The agility factor: Building adaptable organizations for superior performance* [Kindle edition]. San Francisco, CA: Jossey-Bass.

A Review of Green Innovation Research in Malaysia

Mohd Hafizuddin Musa & Hasliza Abdul Halim

School of Management, Universiti Sains Malaysia, Malaysia

Corresponding email: judin_paco@yahoo.com.my

Abstract

The purpose of this paper is to evaluate the development of research publications on the green innovation topic. All research publications related to the green innovation research topic in the Scopus online database were analysed. This included data on sources of articles, top universities or institutions that produce high citation articles and top authors with publications. The outcome of this study is to provide a reference for related scholars interested in research development on green innovation. This study showed that the development of research publications on green innovation are gradually increasing in Malaysia. The results of these analyses were determined and discussed. This study presents conceptually analysis with outcome of a framework for the data collection process on Green Innovation research. The study is particularly useful by providing a reference for scholars interested in research on green innovation. This study also gives valuable reference on the emergence of Green Innovation related studies that can be expected and gaining momentum in the following years.

Keywords: green innovation; green product innovation; green process innovation; green system or managerial innovation.

Introduction

Increasing energy consumption and environmental issues are the main reasons to discuss and explore on green innovation to full fill the demand and requirement for sustainable development (J.Yin et al., 2018). However, with rapid economic development difficulties to the environment and pollution with example waste pollution, emissions such as carbon and industrial excess are increasing daily (Xu et al., 2020). To date, a lot of research have been published in the area of green innovation. The definition of Green Innovation is the exploitation activity, production process, or assimilation of a service, product realization, or management and system methods to the organization implemented or developing company growth (Kemp and Pearson, 2008). Mirata et al. showed an overview detail of environmental innovation with take the green innovation as an innovation to adapt to the global trends in environmental sustainability (Mirataet al., 2005). The concept for green process and products in Malaysia still at the infancy stage and required more improvement (Yacob, P. et al., 2013). According to Zuhairah et al. (2015), given that, knowledge and understanding about the existence of green initiatives in Malaysia is still lacking and there is only limited overview of knowledge about the green concept in Malaysia despite all kinds of full support provided by the Government and private institutions. Previous researches have shown that the implementation and adoption of green practices and green innovation is influenced by the potential stakeholder members in the form of external pressures and enforcement from legislators, environmental groups, financial institutions and suppliers, as well as internally, by company owner and employee's attitudes and knowledge (Yacob, P. &M. Krishna, M., 2012).

However, there is a need to determine a suitable analysis method of review for this topic. As a quantitative research concept and analysis method, the bibliometric analysis is one of the widely used to measure the performance of various subjects (Du et al., 2013). The characteristic they reveal include all topics, detail on sources of articles, top institutions or universities that

produce and publish high citation articles and top authors with publications. J.Yin et al. used bibliometric analysis approach, which applies of large-scale bibliometric, and visual analytic method on green innovation based on the web Science Citation Index Expanded and Social Science Citation Index databases over the time period of 1981–2016 and the outcome of this work showed that the domain of green innovation has entered a period of exponential development stage (J.Yin et al., 2018). Therefore, this paper provides latest overview of the existing review or body of literature in the topic of green innovation, identifying and analyse the most active scholars, institutions or university and relevant publications related to this topic with bibliometric analysis approach in the global and Malaysian context. The main contribution is to provide a reference for scholars interested in research development on green innovation.

Literature on Green Innovation

Green Innovation nowadays is the focus and deemed as a strategic tool and method used to achieve sustainable development in most of the manufacturing sector. Following this, Green Innovation can be divided into three main categories: Green Product Innovation, Green Process Innovation, and Green System or Managerial Innovation (Abdullah.M, & et al, 2015). Previous study by J. Yin et al. showed that the top ten among 50 keywords with the strongest citation bursts include green innovation and green technology (J.Yin et al., 2018).



Figure 1. The Green Innovation categories

Source: Review of Managerial Science, Springer-Verlag Berlin Heidelberg, 2016

According to Chen et al. (2006), Green Product Innovation was identified as introducing and produce the improved new products development because of environmental concerns. Figure 1 shows the Green Innovation categories. Green Process Innovation, the definition refers to the innovation to introducing and producing environmentally friendly products that meet eco-targets by review and consider to modifying and implementing the manufacturing processes and systems with green concept. Such modification and implementation include activity of energy savings, waste recycling, and pollution prevention. Green System Innovation refers to the process and method of identifying, implementing, and full monitoring pioneering ideas that strengthen green environmental performance and concern of a company, enhancing competitiveness in the process (Abdullah M, et al., 2015). From the various definition of green innovation in previous literature, Noor at al. concluded that the green innovation is a new environmental approach that are concerned with minimizing and reducing negative

environmental impact and the introduction of differentiated products compared to competitors (Noor A.S. et al., 2012).

According to Musa, M.H. and Mohamad, M.N. (2018), the awareness on the importance of green innovation is growing both in practice and in academia. Table 1 shows the summary of the advantages of green innovation by several latest scholars on this topic. As competition among businesses intensifies on a global scope, companies will continuously be looking for ways to reduce waste and lower associated costs in order to maintain a successful corporate strategy and improve their branding in the marketplace with the application of the green innovation concept. By understanding the importance of green innovation, it shows that green innovation is a suitable topic to discuss and is the chosen keyword for this study.

Table 1. Advantages of Green Innovation. Source: authors' analysis

Authors/ years	Advantages of Green Innovation
M.A.S. Khan, J.Du, H.A. Malik et al (2022)	i) Confidence in business leaders, SME owners, and entrepreneurs by demonstrating that effectively managing consumer resistance has a bright future for businesses growth with considering green innovation ii) The management support in applying green innovation practices is beneficial for product acceptance among consumers.
Haslinda M. & Muruga C. (2016)	i) Organization/ firms have a more competitive edge domestically and internationally. ii) Promote the positive development of employees and enhance productivity and profitability of SMEs for long-term survival.
Zuhairah H. & Noor A. (2015)	i) The performance of green innovation, product and process have a positive influence on the performance of the firms. ii) The green innovation involve saving in waste recycling, green product design and energy saving. iii) Green innovation embed the concept of environmental protection into the design of the products.
Monu B. & Neelam (2015)	i) Improves the environment and save energy resources. ii) Able to meet the needs of society in ways without damaging or depleting natural resources on earth.
Yacob, P. et al. (2013)	i) Cost-reduction in firm operations, for example from waste management, recycling, and reducing fuel and energy usage. ii) The potential financial benefit to the firm is the focus, rather than the motivation to protect the environment. iii) Centred on the perceived cost benefits of the implementation of environmental practices.

Assessment of the Malaysian research trend

The overall total publications related to green innovation topic in Malaysia is 37 publications as per Scopus search and related to the business management and accounting subject area. Figure 9 shows that the Malaysian trend of research publications on green innovation starting from year 2010 to 2017 is increasing yearly. This shows a positive trend of the research in Malaysia and scholars have already started to look on this topic and focus on green innovation in order to manage environmental issues faced by the country. However, if compared with the global trend, the number of publications from Malaysia are still low and there is still a lot of room for new researchers to explore and increase the research on green innovation in Malaysia. Figure 10 shows the top five productive journals with the most publications on green innovation. In particular, as per global trend, the Journal of Cleaner Production is the highest ranked journal with ten publications, followed by International Business Management with two publications, Review Of Managerial Science with two publications, Asian Journal of Technology Innovation and International Journal of Economic Research with one publication each. Journal of Cleaner Production has the highest number of publication on green innovation compared to other journals over the last five years starting

from 2012 until 2017. Furthermore, for the institution statistics trend, the top three affiliations are Universiti Sains Malaysia, Universiti Teknologi Malaysia and University of Malaya. The top ten affiliations are shown in Figure 11.

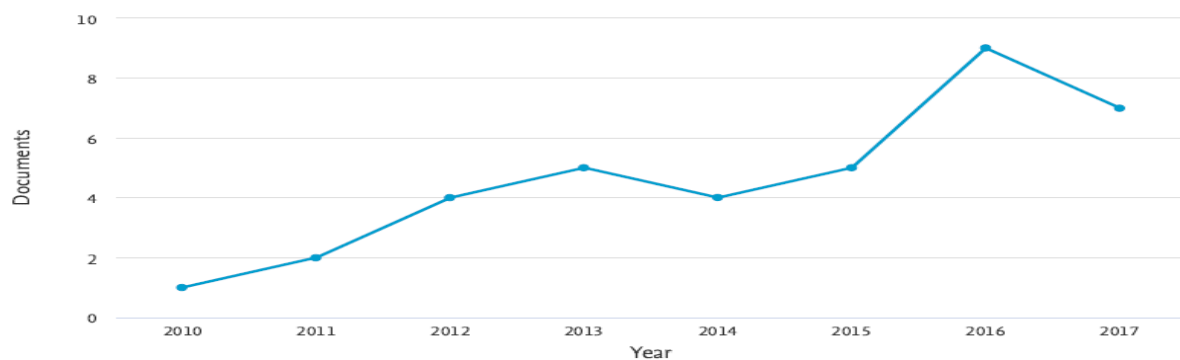


Figure 9. Malaysia publication trend from 1981 to 2017. Source: authors' analysis in Scopus

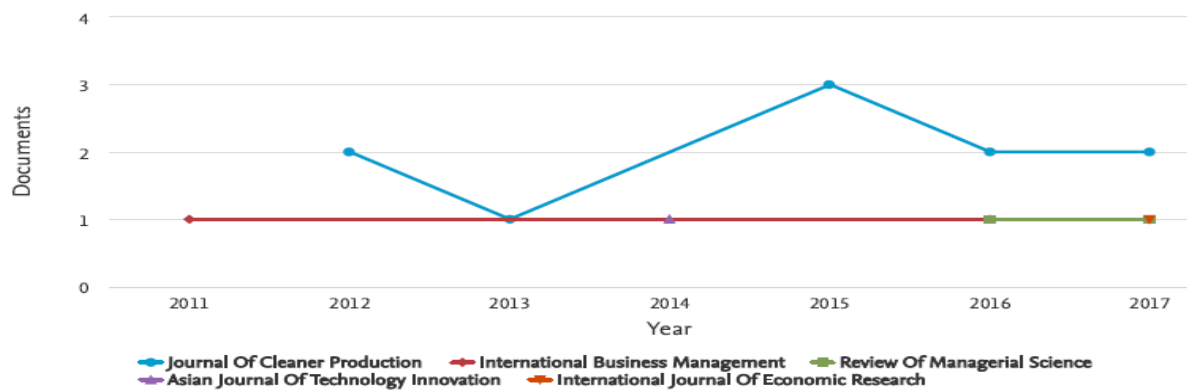


Figure 10. Journal distribution trend. Source: authors' analysis in Scopus

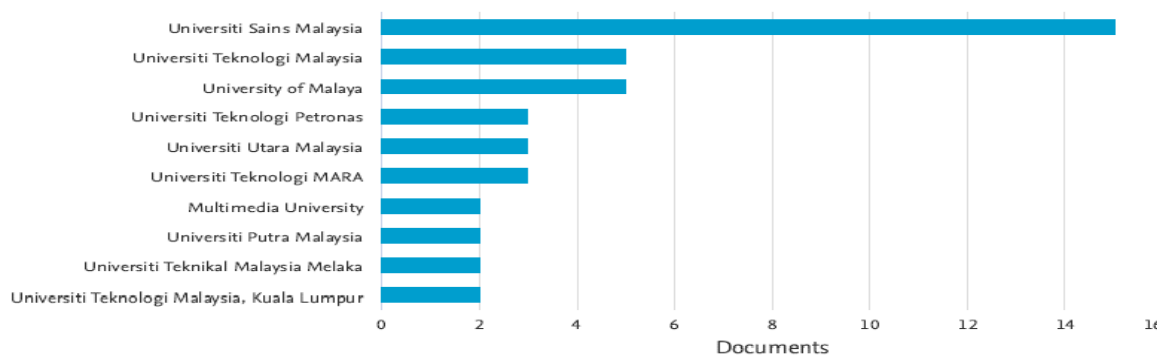


Figure 11. Institution Statistic. Source: authors' analysis in Scopus



Figure 12. The keywords used by authors

Source: authors' analysis in "word clouds", <http://www.wordle.net/>

The keywords used by authors in publications from Malaysia for Business, Management & Accounting field are shown in Figure 12. The most used keywords are 'Sustainable Development', 'Green Technology' and 'Green Innovation'. This figure was generated by using word clouds based on the data of the top 20 keywords used in this field. As a result, similar with the global trend, Green Technology and Green Innovation are the most popular topics discussed among researchers recently. Furthermore, from the 37 documents result, Table 4 shows the top 10 article citation rank. Journal of Cleaner Production is the top journal with seven publications among top ten highest total citation. The first ranked article is the publication by Ng W.P.Q. et al., 2012 with 136 total citations, followed by Sang Y. et al., 2015, 47 citations and Zailani S. et al., 2015, 38 citations. All these top ten highest citation publications were analyzed and summarized in Table 5.

Table 4 Article citation rank. Source: authors' analysis

Rank	Year	Authors	Journal Title	Total Citation
1	2012	Ng W.P.Q., Lam H.L., Ng F.Y., Kamal M., Lim J.H.E.	Journal of Cleaner Production	136
2	2015	Sang Y.-N., Bekhet H.A.	Journal of Cleaner Production	47
3	2015	Zailani S., Govindan K., Iranmanesh M., Shahrudin, M.R., Sia Chong, Y.	Journal of Cleaner Production	38
4	2013	Foo K.Y.	Journal of Cleaner Production	32
5	2011	Zailani S., Amran A., Jumadi H.	International Business Management	30
6	2016	Mahmood H., Moniruzzaman M., Yusup S., Akil H.M.	Journal of Cleaner Production	21
7	2016	Abdullah M., Zailani S., Iranmanesh M., Jayaraman K.	Review of Managerial Science	16
8	2016	Zailani S., Iranmanesh M., Nikbin D., Jumadi H.B.	Asian Journal of Technology Innovation	16
9	2012	Ahmad F., Mujah D., Hazarika H., Safari A.	Journal of Cleaner Production	16
10	2015	Ahmed Ali B.A., Sapuan S.M., Zainudin E.S., Othman M.	Journal of Cleaner Production	13

Table 5: Top 10 Summary of past studies on green innovation in Malaysia. Source: authors' analysis

Rank	Year	Document Title	Key findings/issues
1	2012	Waste-to-wealth: Green potential from palm biomass in Malaysia	- Actions and policies to promote the implementation of green technology in Malaysia, while simultaneously defending both environmental and ecological health and promoting technology transformation.
2	2015	Modelling electric vehicle usage intentions: An empirical study in Malaysia	- Performance attributes financial benefits, environmental concerns, demographics, infrastructure readiness and government interventions. - Environmental regulations, market demand, and firm internal initiatives have a positive effect on green innovation initiatives (GII), while GIIs have a positive effect on the three categories of sustainable performance (i.e., environmental, social, and economic).
3	2015	Green innovation adoption in automotive supply chain: The Malaysian case	- Impetus to develop Education for Sustainable Development is accompanied by the integration of environmental protection rules, and boosted by the implementation of Environmental Impact Assessment (EIA).
4	2013	A vision on the role of environmental higher education contributing to the sustainable development in Malaysia	- Logistics service providers must find innovative ways to improve their technologies to be in green credentials.
5	2011	Green innovation adoption among logistics service providers in Malaysia: An exploratory study on the managers' perceptions	- Green innovation in logistics is a promising area of study and practice that have the potential to provide significant benefits to the firm and the society.
6	2016	Pre-treatment of oil palm biomass with ionic liquids: A new approach for fabrication of green composite board	- IL-assisted pre-treatment could be a highly promising and green technology for effective utilization of lignocellulosic biomass in the bio composite field.
7	2016	Barriers to green innovation initiatives among manufacturers: the Malaysian case	- Barriers are different for product, process and service innovations. Environmental resources, attitude and perception, customer demand and government support are specific to green product innovation whereas poor external partnerships, lack of information and environmental benefits are few barriers related to green process innovations.
8	2014	Determinants and environmental outcome of green technology innovation adoption in the transportation industry in Malaysia	- Quality of human resources, customer pressure, and environmental uncertainty significantly influence green innovation adoption for transportation companies, while the influence of organizational and governmental support is not significant.
9	2012	Assessing the potential reuse of recycled glass fibre in problematic soil applications	- Presence of recycle glass fibres (RGF) reinforcement in reinforced soil leads to a significant increase in the shearing resistance and internal friction angles of soil media.
10	2015	Implementation of the expert decision system for environmental assessment in composite materials selection for automotive components	- Natural fiber composite material hemp and polypropylene gained the higher rank in the selection process and almost compliant with the requirements of industrial product design specification and can be recommended to automotive component manufacturers to enforce green technology.

Conclusion and Future Work

There has been a notable increasing growth globally for research on Green Innovation since 2006. The analysis method is applied in this study to give systematically structural description of the research status in Malaysian context, as well as some significant conclusion as to the nature of research trend in green innovation. The framework of the data collection process in this paper will contribute as a reference for other researchers to conduct the initial research overview on the related topic. It will help them to analyse the research trend and guide them for literature review, which would also help researchers to develop more specific research focus when undertaking and publishing their work. Though the number of research publications

is gradually increasing, the number of publications on green innovation are still considered relatively low. It can be expected that the number will surge as new and promising researchers begin to explore the area of Green Innovation.

From this analysis, the focus of literature was on the impact of green innovation on firm performance. The trend for number of publications increases from the year 2010 for total publication in this topic. Globally, green innovation was already documented in the literature for Small and Medium Enterprises (SMEs). However, in Malaysia, research of green innovation in Malaysian SMEs was found to be lacking. From the analysis, in Malaysia, the focus of research is on sustainable development, green technology and green innovation. The research focus in the Malaysian context were more on the adoption and barriers to implementation of the green concept. From this study, the number of publications on Green Innovation in the Malaysian context were found to be limited, lacking in diversity and inconclusive to flourish the existing literature.

For future research, the meta-analysis of the Green Innovation related articles has revealed positive potentials in the research dimensions of the Green Innovation related study. This study reveals that the emerging areas of study for Green Innovation are Sustainable Development, Green Technology and Eco-innovation. The emergence of Green Innovation related studies can be expected to escalate and to gain momentum in the following years because of the increasing environment issues and problems faced by the international community.

References

- Abdullah.M, Zailani.S, Iranmanesh.M& K. Jayaraman (2015) Barriers to green innovation initiatives among manufacturers: the Malaysian case, *Review of Managerial Science, Springer-Verlag Berlin Heidelberg*.
- Aghaei Chadegani, A., Salehi, H., Yunus, M.M., Farhadi, H., Fooladi, M., Farhadi, M., & Ale Ebrahim, N. Chen YS, Lai SB, Wen CT (2006) The influence of green innovation performance on corporate advantage in Taiwan. *J Bus Ethics* 67(4):331–339
- Ahmed Ali, B.A., Sapuan, S.M., Zainudin, E.S., Othman, M. (2015) Implementation of the expert decision system for environmental assessment in composite materials selection for automotive components. *Journal of Cleaner Production*, 107, pp. 557-567.
- Ahmad, F., Mujah, D., Hazarika, H., Safari, A. (2012) Assessing the potential reuse of recycled glass fibre in problematic soil applications. *Journal of Cleaner Production*, 35, pp. 102-107.
- Chen Y.-S.(2008) The driver of green innovation and green image - Green core competence. *Journal of Business Ethics* 81:531-543
- Chen Y.-S., Lai S.-B., Wen C.-T (2006). The influence of green innovation performance on corporate advantage in Taiwan. *Journal of Business Ethics* 67:331-339
- Chiou T.-Y., Chan H.K., Lettice F., Chung S.H. (2011) The influence of greening the suppliers and green innovation on environmental performance and competitive advantage in Taiwan. *Transportation Research Part E: Logistics and Transportation Review* pp.822-836
- De Bakker, F.G., Groenewegen, P., & Den Hond, F. (2005). A bibliometric analysis of 30 years of research and theory on corporate social responsibility and corporate social performance. *Business & Society*, 44(3), 283–317.
- Du, H.B., Wei, L.X., Brown, M.A., Wang, Y.Y., Shi, Z., (2013). A bibliometric analysis of recent energy efficiency literature: an expanding and shifting focus. *Energy Efficiency* 6(1), 177-190

- Duque Oliva, E.J., Cervera Taulet, A., & Rodríguez Romero, C. (2006). A bibliometric analysis of models measuring the concept of perceived quality in providing internet service. *Innovar*, 16(28), 223–243.
- Foo, K.Y. (2013) A vision on the role of environmental higher education contributing to the sustainable development in Malaysia. *Journal of Cleaner Production*, 61, pp. 6-12.
- Haslinda M. & Muruga C. (2016). Malaysian SMEs Development: Future and Challenges on Going Green. *Procedia - Social and Behavioral Sciences* 224 (2016) 254 – 262
- Jianhua Yin, Lidong Gong, Sen Wang (2018) Large-scale assessment of global green innovation research trends from 1981 to 2016: A bibliometric study, *Journal of Cleaner Production* 197, 827-841
- Kemp R, Pearson P (2008) MEI project about measuring eco-innovation, final report, Maastricht.
<http://www.merit.unu.edu/MEI/papers/Final%20report%20MEI%20project%20DRAFT%20version%20March%2026%202008.pdf>
- Lopez-Illescas, C., Moya-Anegón, F., & Moed, H. F. (2008). Coverage and citation impact of oncological journals in the Web of Science and Scopus. *Journal of Informetrics*, 2(4), 304-316. <http://dx.doi.org/10.1016/j.joi.2008.08.001>
- Mahmood, H., Moniruzzaman, M., Yusup, S., Akil, H.M. (2016) Pretreatment of oil palm biomass with ionic liquids: A new approach for fabrication of green composite board. *Journal of Cleaner Production*, 126, pp.677-685.
- M.A.S. Khan, J.Du, H.A. Malik et al (2022) Green Innovation Practices and consumer resistance to green innovation products: Moderating role of environmental knowledge and pro-environmental behaviour. *Journal of 'Innovation & Knowledge* 100280
- Mirata, Murat, Emtairah, Tareq, (2005). Industrial symbiosis network and the contribution to environmental innovation the case of the Landskrona industrial symbiosis programme. *Journal of Cleaner Production* 13, 993-1002
- Musa, M.H. and Mohamad, M.N. (2018) Importance of Green Innovation in Malaysian SMEs: Advantages and Future Research. *International Academic Journal of Innovative Research*, Vol. 5, No. 3, 2018, pp. 22-31
- Monu B. & Neelam (2015). The Advantages and Disadvantages of Green Technology. *Journal of Basic and Applied Engineering Research* p-ISSN: 2350-0077; e-ISSN: 2350-0255; Volume 2, Issue 22; October-December, 2015, pp. 1957-1960
- Ng, W.P.Q., Lam, H.L., Ng, F.Y., Kamal, M., Lim, J.H.E. (2012) Waste-to-wealth: Green potential from palm biomass in Malaysia. *Journal of Cleaner Production*, 34, pp. 57-65.
- Noor A. S., Norhayati Z., Ahmad J., Mohd S., Md A., Muhamad Z. (2012) The relationship of green supply chain management and green innovation concept. *Procedia - Social and Behavioral Sciences* 57 (453 – 457) and SMEs Business Success in 390 Review of Business Management., São Paulo, Vol. 18, No. 61, p. 370-391, Jul./Sept. 2016 Conceptual Model. *Review of Integrative Business and Economics Research*, 4(3), 33
- Sang, Y.-N., Bekhet, H.A. (2015) Modelling electric vehicle usage intentions: An empirical study in Malaysia. *Journal of Cleaner Production*, 92, pp. 75-83.
- Vieira, E. S., & Gomes, J. A. N. F. (2009). A comparison of Scopus and Web of Science for a typical university. *Scientometrics*, 81(2), 587-600. <http://dx.doi.org/10.1007/s11192-009-2178-0>
- Wong V., Turner W., Stoneman P. (1996) Marketing strategies and market prospects for environmentally-friendly consumer products. *British Journal of Management*, pp. 263-281
- Xu, C., Zhang, B., Gu, C., Shen, C., Yin, S., Aamir, M., et al. (2020). Are we underestimating the sources of microplastic pollution in terrestrial environment? *Journal of Hazardous Material*, 400, 123228

- Yacob, P. & M. Krishna, M. (2012). Green Practices: Perception of Malaysian SME Owners/Managers. *International Journal of Academic Research in Economics and Management Sciences*, 1(3): 103- 111.
- Yacob, P. et al. (2013). The policies and green practices of Malaysian SMEs. *Global Business and Economics Research Journal*, 2(2): 52- 74.
- Zailani, S., Amran, A., Jumadi, H. (2011). Green innovation adoption among logistics service providers in Malaysia: An exploratory study on the managers' perceptions. *International Business Management*, 5 (3), pp.104-113.
- Zailani, S., Iranmanesh, M., Nikbin, D., Jumadi, H.B. (2014) Determinants and environmental outcome of green technology innovation adoption in the transportation industry in Malaysia. *Asian Journal of Technology Innovation*, 22 (2), pp. 286-301.
- Zailani, S., Govindan, K., Iranmanesh, M., Shaharudin, M.R., Sia Chong, Y. (2015) Green innovation adoption in automotive supply chain: The Malaysian case. *Journal of Cleaner Production*, 108, pp. 1115-1122.
- Zuhairah H. & Noor A. (2015). The impact of green marketing strategy on the firm's performance in Malaysia. *Procedia - Social and Behavioral Sciences* 172 (2015) 463 – 470

Lensing Venture Creation Activities from Social Cognitive Career Theory: The Roles of Entrepreneurial Capabilities and Entrepreneurial Support among Graduates

Shehu Rabiah Na-Allah & Noor Hazlina Ahmad

School of Management, Universiti Sains Malaysia, Malaysia

Corresponding email: shehurabiah@student.usm.my

Abstract

This study provides directions on how school graduates can become self-reliant by carrying out the activities of venture creation (VENC). In essence, addressing some of the unemployment challenges that are commonly associated with graduates after schooling. Therefore, the study examined the implication of the Social Cognitive Career Theory (SCCT) proxied with perceptive factors (PFs) on VENC activity through the mediating and moderating roles of entrepreneurial capabilities (ENTCPB) and entrepreneurial support (ENTSUP) among Nigerian graduates. Drawing the research formatively with 291 survey responses, the result of partial least square structural equation modeling (PLS-SEM) showed that ENTCPB has a complementary mediating effect on the relationship between PFs and VENC, while the moderating role of ENTSUP in relation to ENTCPB and VENC was found to be negative and insignificant. Implying not all instances of PFs will result in VENC through ENTCPB because PFs can directly lead to VENC, while the positive relation between ENTCPB and VENC becomes weaker and negative at lower ENTSUP. The study was not generalized due to weaknesses of the design used, but future researches considering using intervening/control variables, or conducting longitudinal study were proposed. The study found support for validating PFs and VENC as reflective-formative second-order components. It also extends the PFs concept by enhancing VENC literature theoretically and practically. The researchers recommended intervention agencies and relevant stakeholders to initiate and administer effective ENTSUP covering both financial, non-financial and incubation facilities that are deemed fundamental to strengthened graduate's VENC activities.

Keywords: entrepreneurial capabilities; entrepreneurial support; graduates; perceptive factors; social cognitive career theory; venture creation.

Introduction

In contemporary times, it becomes more obvious that the attainment of tertiary education can no longer serve as an automatic ticket of employment for graduates (Ertuna & Gurel, 2011; Fosu, 2021). This is rather harder as the number of graduates have been rising far beyond the capacity of the labour market (Agbim et al., 2013; Aidelunuoghene, 2013; Amos & Alex, 2014; Anyebe, 2017; Cln & Hope, 2014; Hunjra et al., 2011; Nkechi et al., 2012; Onimole & Olaiya, 2018). As a result, triggering problems of unemployment which is occasioned with education and job mismatch among the graduates (Aminu, 2019; Onuma, 2016).

In Nigeria for instance, there are speculations that the youths comprised 64% of the working age groups (Saanyol, 2021). However, some evidence showed about 23.18 million of them were found not to be actively engaged in any economic activity as at 2020 (Owoeye, 2021). Meanwhile, in 2018 and 2019, the unemployment rate was seen to be constant at 23.10% (Sanyaolu, 2019; Stephen, 2019). This was slightly different from 2017 where the rate was 18.80%, and in 2020; it rose substantially to 33.50% (Agency Report, 2020). As a result, decreasing underemployment from 28.60% to 22.80% and bringing total unemployment and

underemployment rate to 56.10% in 2021 (Owoeye, 2021). In this regard, Fosu (2021) contemplated chances in which some 25 million graduates can be currently unemployed. This was noticed following the summary of recruitment exercise that advertised some 1000 graduates' positions, but received over 25 million applications. By implication, only less than one percent of the applicants can be hired, while the larger proportion will be returning to the labour market.

Therefore, since "desperate times requires desperate measures" (BBC, 2020). There is no doubt majority of the graduates will be required to seek out other alternative means of employment. One of the conventions is to become self-reliant through entrepreneurship. According to Dahlqvist and

Wiklund (2012), this type of activity is said to be achieved through the establishment of businesses e.g., new ventures, enterprises, economic entities, etc. However, the process usually commenced from the inception of an idea, launching the idea and accomplishing the idea into the operations of the new venture (Baron, 2007). Therefore, Gatewood et al. (1995) specified some cognitive orientations that are executed during the implementation process. This includes gathering market information (GMI), estimating potential profit (EPP), finishing ground-work for products/services (FGPS), developing structure of the company (DSC), and setting-up business operations (SBO). As such, graduates that follows this procedure will be able to enjoy the creation of a new business venture, and this also constitutes one of the bases of actualizing their entrepreneurial career.

However, with the understanding that the Social Cognitive Career Theory (SCCT; self-efficacy, outcome expectation, choice-making, and vocational interest), is one of the frameworks that advances understanding on how people form career interest and make important choices in life (Lent & Brown, 2019; Liguori et al., 2017; Segal et al., 2002; Wendling & Sagas, 2020). The SCCT herein proxied with perceptive factors (PFs), was employed to help in predicting the cognitive emotions of graduates in the venture creation (VENC) activities.

However, there are evidences from some researchers expressing concerns on the low level of graduates that are turning in for this type of enterprising activity (Anyebe, 2017; Cho & Lee, 2018). This makes it obvious that not too many graduates actually becomes entrepreneurs upon graduation (Ebiringa, 2012; Yazeed et al., 2020). Therefore, Li et al. (2018) related this instance with lack of ideas on the part of the graduates, which are necessarily required for the development of a new business. Others like Olaniran and Mncube (2018), attributed the phenomena to inadequate interventions and supports that also constitutes a barrier to the activities. In this regard, Wright and Marlow (2012) classified the factors as some of the reasons that has made VENC activities scarce.

This could be a reason that stimulated Rideout and Gray (2019) to inquire whether "entrepreneurship education (E-ed) really work to create business enterprise?" (p.329), with emphasis on graduates. However, the authors acknowledged that "E-ed appears to be one of those phenomena where action and intervention have raced far ahead of the theory, pedagogy and research needed to justify and explain it" (p.346). It was based on this understanding that this present study unearthed to investigate how graduates utilized the knowledge of entrepreneurship education (e.g., Ahmed et al., 2020), that doubles as basis of entrepreneurial capabilities (ENTCPB) (e.g., Hunjra et al., 2011), required in pursuing the VENC activities. This is because the E-ed programs has now becomes one of the criteria for graduation in Nigerian tertiary institutions. As such, all graduates from the 2006/2007 academic session to date, have been equipped with the E-ed skills (Alarape, 2008; Onuma, 2016). Also, as part of the government effort in complementing this initiative, some policies and programs were introduced in the Central Bank of Nigeria (CBN), Bank of Industry (BOI), National Directorate of Employment (NDE), Small and Medium-Scales Enterprises Development Agency of Nigeria

(SMEDAN) among others. Their goal is to extend entrepreneurial support (ENTSUP) to the enterprising section of the Nigerians opting for self-reliance e.g., graduates (Shehu & Ahmad, 2022).

Therefore, it is against this background that this study was designed to investigate the influence of PFs on VENC activities through the roles of ENTCPB and ENTSUP among Nigerian graduates. In essence, the study focused on developing a framework that will address some of the post-graduation challenges experienced among graduates (e.g., unemployment), by providing guide to the younger generations on how to make adequate preparations for self-reliance through the VENC activities. As a result, the researchers analyzed responses of graduates that have attended the BOI's incubation training under the Graduate Entrepreneurship Fund (GEF) program. The program operates in collaboration with the National Youth Service Corps (NYSC), which is a body that mobilizes Nigerian graduates into a compulsory one-year service after graduation. Therefore, the GEF/NYSC members were found to be appealing for the study, because they were found to be at their nascent stage of implementing the VENC activity during the survey. Other sections of the study include the literature review section, methodology, analysis of result, discussion and conclusions.

Literature and Theoretical Background

One of the literatures detailing the phenomena used by graduate to carry out venture creation (VENC) can be seen in Hunjra et al. (2011). They expressed that economic motivations and the quest for independence are two most important factors stimulating graduate's interest on the activity. However, Baron (2007) argued that these considerations strongly interconnects with cognitive abilities and behavioural traits, which in turn, informs the activity. As a result, Gatewood et al. (1995) expressed the crucial role of psychological variables as indicators of new entry. Therefore, the authors lamented that "certain cognitive orientation toward entrepreneurship might influence one's readiness to persist in entrepreneurial action" (p.375). Referring to the processes in gathering market information, estimating potential profit, finishing ground works on products, developing the company structure, and setting up business operations.

In this regard, Seo and Lee (2019) stated that the capabilities in new start-ups can be influenced by the founders' abilities in using ideas and skills to identify new business opportunities. Therefore, Razmdoost et al. (2020) characterized the formation of new ventures through capabilities in: (i) venture ordinary capabilities e.g., resources and competence (ii) venture dynamic capabilities e.g., sensing and seizing opportunities, and (iii) the founders managerial

capability i.e., human capital, social capital, managerial cognitions. Accordingly, they also considered the capabilities in forming a new venture to be established via: (i) the identification of a venture idea (ii) conducting preliminary entrepreneurial activity (iii) evaluating the outcomes of assessment, and (iv) establishing the new start-up. In addition, the authors itemized four classifications of ventures that can be established through these capabilities: (a) the capability driven ventures (b) resource driven ventures (c) bricoleur ventures, and (d) the agile ventures. However, each of the classification is also accompanied with some capabilities that are specific to these ventures in both stable and dynamic environments.

So, in line with Hu et al. (2022), they argued that the realization of entrepreneurial capabilities (ENTCPB) is not only an indication of entrepreneurial behaviour for starting a new venture, but also counts on the career path. Therefore, with the understanding that this study focused on graduates that are pursuing entrepreneurship as a means of career after schooling. The framework of the SCCT was utilized as basis of understanding the implication of educational and occupational interest development, choice-making, performance, satisfaction and well-being among these graduates (e.g., Lent et al., 1994; Lent & Brown, 2008, 2019;

Pérez-lópez et al., 2019; Rogers et al., 2009; Segal et al., 2002; Wendling & Sagas, 2020). The idea in the research concept is demonstrated in Figure 1.

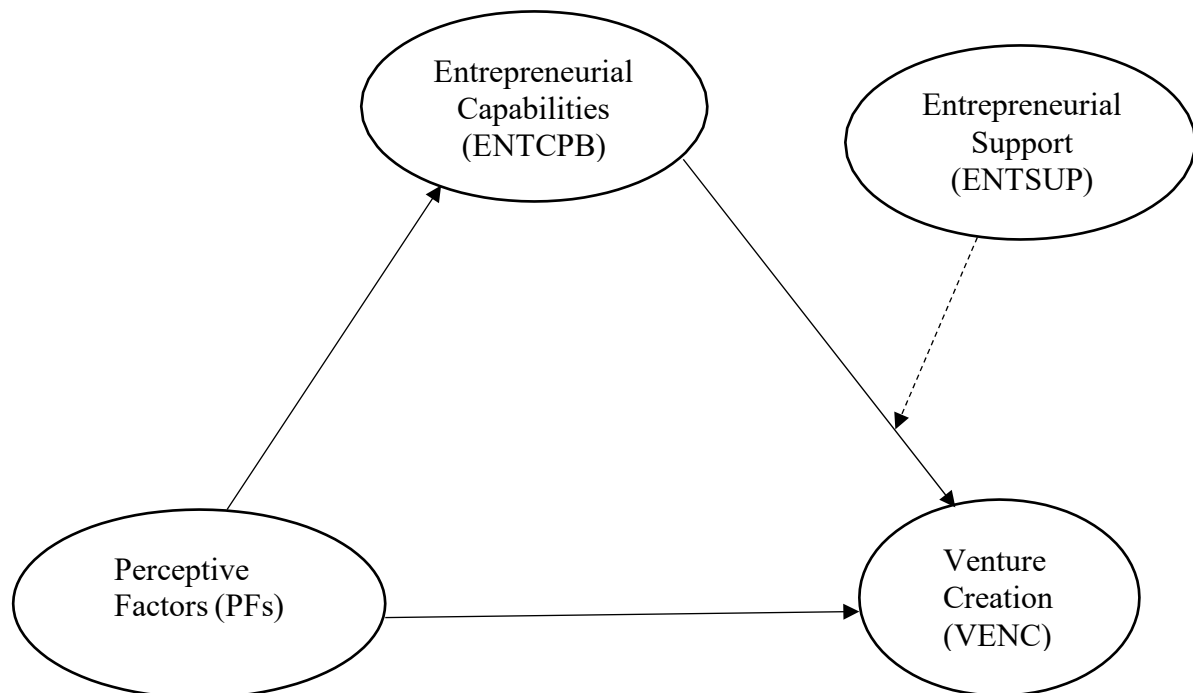


Figure 1. Conceptual Framework

However, the research was conceptualized in line with the methodological breakthrough for specification and modeling using the hierarchical component that was recommended by Sarstedt et al. (2019). Two components (PFs, VENC) were specified as reflective-formative second-order constructs using the criteria of Ali et al. (2018), Becker et al. (2012), Hair et al. (2019), Sarstedt et al. (2019).

Therefore, with the understanding that the SCCT (e.g., PFs) advances understanding on how people form career interest and subsequently establish career choices, it equally informs the basis of considering the VENC activities as a form of career in this perspective. The literature supporting this connection established that the SCCT initially comprised of three interconnected models of interest development, choice making, and performance (Lent & Brown, 2013). However, the authors added that it presently “consists of 4 overlapping, segmental models aimed at

understanding educational and occupational interest development, choice-making, performance and persistence, and satisfaction/well-being” (p.557). This is one of the premises that motivated the researchers to incorporate the SCCT’s framework (self-efficacy, outcome expectation, goal choice and vocational interest) at the conceptualization stage. In essence, it was meant to foster understanding of the cognitive emotions of the graduates during the process of discharging VENC activity.

For example, some of the practical instances can be seen in previous studies like Szeli et al. (2018). They examined the role of SCCT through self-efficacy (entrepreneurial and innovation), outcome expectation (entrepreneurial), entrepreneurial intention (career interest), and learning experience (entrepreneurial) on Big Five Personality Traits (BFPT; openness to new experience, conscientiousness, extraversion, agreeableness, emotional stability) among graduates of Stanford University that have pursued the VENC activities. Finding revealed that all items of SCCT were found to be significantly related with certain items of BFPT, and the highest effect was observed on innovation self-efficacy and entrepreneurial self-efficacy. This implies that graduates’ entrepreneurs needed to become abreast of the magnifying role of the

SCCT which should be commiserate with their BFPT factors in the event of discharging the VENC activities.

Accordingly, Wendling and Sagas (2020) employed model of career self-management (CSM; self-efficacy, career goal) and the BFPT to examine career planning for life after sports through the contextual role of career barriers and support among college athletes from United States (US). Finding showed that carrier planning was found to have partial mediating effect between CMS and BFPT, except self-efficacy in relation to barriers and goals, that was found to be fully mediated. However, conscientiousness was found to have positive moderating role on the relation between career goals and career planning among the athletes.

This is similar with the finding in Caines et al. (2019) that investigated future time perspective and social support on self-employment interest among professional association members. They found that open-minded time perspective has a positive relationship with entrepreneurial self-efficacy. However, the finding in Kannadhasan et al. (2018) differed with this evidence because the implication of entrepreneur's self-efficacy was found to have a full mediating effect on the relationship between social capital and new VENC activity.

Consequently, Al-Awbathani and Malek (2019) surveyed the mediating role of entrepreneurial outcome expectation (ENOX) in relation to entrepreneurial passion (ENPS) and entrepreneurial career choice (ENCC) among students of Saudi Arabia. Finding showed that ENOX has a partial mediating effect on the relationship between ENPS and ENCC. On the contrary, the evidence in Pham et al. (2020) disclosed that outcomes expectations has the strongest effect than self-efficacy.

Meanwhile, Gutiérrez et al. (2018) disputed the result in Pham et al. (2020), because their study found entrepreneurial self-efficacy explains more of student's entrepreneurial intent when compared to their outcome expectations. However, the finding in Liguori et al. (2020) distinguished some of the evidences because they found out that exposure to entrepreneurship and social support mechanisms were the main thrust in entrepreneurial self-efficacy and entrepreneurial outcome expectations.

On this note, Meoli et al. (2020) debated on the proximal use of two terms (intentions and actions) in expressing entrepreneurship phenomena. They expressed that it is not always usual for intention to represent action because the latter represents the context of practice. The facts were established from a longitudinal survey that uses the SCCT's framework to examine entrepreneurial intention on entrepreneurial career choice through the moderating effect of social context i.e., immediate (influence of relevant others), and large (organizational versus environmental influence) among

Italian students. Finding showed that context play a significant role in explaining reasons for acting on intention and/or otherwise among the units of analysis. This was because relevant others and organizational influences, were found to enhance the students' chances of establishing new business ventures, while environmental influence only hindered the new venture creation processes.

The Mediating Role of Entrepreneurial Capabilities on the Relationship between Perceptive Factors and Venture Creation

Following understanding that certain cognitive orientations (e.g., GMI, EPP, FGPS, DSC, SBO) are responsible for prompting people's actions in towards the VENC activities (Gatewood et al., 1995). The extant literature recognizes that the process of VENC encompasses some interrelated capabilities in ordinary capabilities, venture dynamic capabilities, as well as the initiator's managerial capabilities, etc., (Razmdoost et al., 2020). Therefore, some scholars characterized them as components of entrepreneurship capabilities (Antoniades & Haan, 2019; Dias & Santos, José Manuel Brás dos Pereira, 2020), which are responsible for equipping individuals with the entrepreneurial capabilities (ENTCPB) of

undertaking the VENC activities (e.g., Mwiya et al., 2017). As a result, Hopp and Sonderegger (2015) contemplated that “founding a new business is a complex set of interrelated organizing activities” (1079), which depends on an individual’s background factors.

Therefore, the framework of the SCCT was introduced to provide a guide of understanding career interest, choice goals, self-efficacy, outcome expectations, actions and performance (e.g., Cadenaset al., 2020; Lent & Brown, 2019). For instance, Newman et al. (2019) attributed the concept of entrepreneurial self-efficacy as one of the factors that can influence interest and intention to embark on entrepreneurial action. This makes the concept an appealing area in entrepreneurship (Liguori, 2012). In turn, Pérez-lópez et al. (2019) suggested for a synergy between self-efficacy and outcome expectation as most appealing for decisions into an entrepreneurial career. Therefore, Lent and Brown (2008) characterized the SCCT’s importance in explaining the aspects of subjective well-being as well as the actions of people in relation to the workplace.

Other practical implications can be seen in Anwar et al. (2018) that studied the association between intellectual capital (IC; human, relational, structural); entrepreneurial strategy (ES; innovation, risk-taking, proactiveness) and new venture performance (NVP; financial, non-financial) through the mediating effect of competitive advantage (CA) among selected entrepreneurs in Pakistan. Finding showed that IC, ES, and CA related positively with NVP. While CA was found to have full mediation effect in the relationship between IC and NVP, and partial mediation effect in the association between ES and NVP. Implying that firm’s internal capabilities are crucial factors for understanding new venture performance. Similarly, Naz et al. (2020) examined broader self-efficacy (BS; creative, learning, leadership) and specific self-efficacy (SES; general, entrepreneurial) on proactive personality (PP) and entrepreneurial intentions (EI) among selected Pakistan university students. Findings showed that PP positively associated with BS, while both BS and SES were found to have serial mediation effect on the association between PP and students’ EI. By implication, students EI is informed by PP through the magnifying influence of BS and SES capabilities.

Consistently, Martin et al. (2020) analyzed marketing capabilities (MCB), competitive strategy (CMS) and international new venture (INVC) performance through the mediating role of marketing communication (MKC; competitive strategy) and moderating effect of technological turbulence (TTB) among new firms in Mexico. Finding showed that MKC mediated the relationship between MCB and CMS on INVC, through the moderating effect of TTB. This implies new venture performance can be achieved through a moderated mediating influence of TTB and MKC capabilities.

Accordingly, Rahman et al. (2019) examined the mediating effect of resource leveraging (RSL), resource bundling (RBB) and resource acquisition (RAQ) on business ties (BST) and new ventures growth (NVCG) in Pakistan. Finding showed that BST related positively and significantly on NVCG, while RSL, RBB and RAQ were found to have a full mediation effect on BST and NVCG. This implies new venture’s growth can be determined through the magnifying role of BST which is influenced through RSL, RBB and RAQ capabilities. In addition, Hunjra et al. (2011) studied entrepreneurial capabilities, attraction, networking support, self-independence and self-reliance on intention to create new venture among Pakistan students. Finding showed that the students were found to be strongly motivated in starting new ventures, but the analysis of variance (ANOVA) revealed significant differences on the student’s preferences in undertaking the new venture activity, which also depend on age groups.

Indeed, Pang et al. (2022) examined the moderated (environmental dynamism; ED) mediating (inter-functional coordination; IC) effects of Dynamic Capabilities (DCB; sensing, seizing, transforming capacities) on Novelty-Centred Business Model Design (NBMD) among selected Chinese firms. The regression result showed that DCB associated positively and significantly with NBMD and IC, while IC has positive and significant effect on NBMD. The

indirect effect of IC on DCB and NBMD was found to be significant, while ED positively and significantly moderated the association of DC and NBMD through the mediating effect of IC. Implying IC has a complementary mediating effect between DCB and NBMD, while the interaction of ED moderated DCB and NBMD through IC.

In turn, Rodrigo-alarc et al. (2017) examined the mediating role of dynamic capabilities (DC) on Social Capital (SOC) i.e., structural SC, relational SC, cognitive SC; and Entrepreneurial Orientation of some Spanish agri-food enterprises. Finding showed structural SC associated negatively and insignificantly on EO, while relational SC and cognitive SC were found to have positive and significant effect on EO. DC was not found to have any mediating effect on the relationship between relational SC and cognitive SC on EO. Even though, structural SC was found to have negative and significant effect on EO.

So, in line with this evidence, this present study sought to address some of the inconsistencies of findings, and therefore, proposed “*H1*: the more graduates are optimistic on their entrepreneurial capabilities, the higher it positively mediates the relationship between perceptive factors and venture creation activities”

The Moderating Effect of Entrepreneurial Support on the Relationship between Entrepreneurial Capabilities and Venture Creation

It will be pertinent to note that some previous studies have recognized the role of entrepreneurial support (ENTSUP) as one of the strategies employed to support the entrepreneurial activities of graduates (Neneh, 2019; Shirokova et al., 2019; Weiss et al., 2019). This approach has also been acknowledged in hastening the process in which graduates attain self-reliance (Neneh, 2020), and by extension, helps in addressing some of the peculiar problems associated to graduates' unemployment (e.g., Fosu, 2021; Owioye, 2021). Therefore, in attempt to ensure adequate provisions of the contingency, the Nigerian government came up with the idea of institutional programs like the NDE, SMEDAN, BOI, GEF, etc., with the aim of providing logistics and supports to the enterprising section of the population.

Therefore, as observed in Otache (2019), the support has three implications to the graduates. The first is comes from entrepreneurial skills in which the graduates derives from entrepreneurship education (E-ed) programs (e.g., Ahmed et al., 2020; Daneshjoovash & Hosseini, 2019; Kolade, 2018; Onimole & Olaiya, 2018; Onuma, 2016). This is complemented with the incubation programs that are facilitated in various EDCs such as the GEF/NYSC facility (e.g., Egwu, 2014; GEF, 2020; Li et al., 2020; Otache, 2019). The last category is related to government intervention programs that are responsible for administering seed-funds to graduates with bankable business ideas (e.g., GEF, 2020; Hoque, 2018; Nakku et al., 2020).

However, other implications of the support programs can also be seen practically in some previous studies like Li et al. (2020), that analyzed business incubators (BIC) involving networking services (NS), capital support (CS), and training programs (TP) on entrepreneurship development (EDV) through the mediating effect of business start-up (BSU) and moderating effect of government regulations (GRG) in Pakistan. The direct effect of BIC on EDV was found to be positively and significantly related. BSU was found to have positive and significant mediating effect on NS and EDV; CS and ED; and TP and ED. While the moderating effect of GR on BSU and EDV was also found to be positive and significant.

Consistent with Guo et al. (2017), they studied the moderating role of venture capital investment intensity (VECI) in association with e-business model (EBM) and Internet of Things (IoTs) mobile value retention among Chinese new start-ups. Finding showed that VECI has a moderating effect in the relationship between EBM and IoTs. As a result, increased efficiency-centered and complementarity-centered e-businesses, which also affected IoTs value retention.

Accordingly, Weiss et al. (2019) draws survey data from 50 countries to ascertain the moderating effect of regional social capital (RSCP) i.e., structural, relational, and cognitive

on student's transition from entrepreneurial intention (EIT) to entrepreneurial actions (EAC) at the University of St. Gallen in Sweden. The result of moderation showed support for student's spins-off activities because cognitive and structural were found to weakened and strengthened the relationship between EIT and EAC, respectively. Therefore, the researchers suggested authorities to enhance relational by decreasing social structures in attempt to hasten students' venture creation activities.

This therefore, provided additional understanding on the moderating role of support in fostering venture creation activities especially the nascent entrepreneurs like the graduates. In this regard, the researchers proposed "*H2*: entrepreneurial support moderates the relation between entrepreneurial capabilities and venture creation such that higher entrepreneurial support would strengthen the association of entrepreneurial capabilities and venture creation among graduates and vice-versa".

Methodology

The study was conducted using a cross-sectional survey design because the targeted respondents were found to have completed their incubation program during the period of survey. Therefore, this limited the chances of conducting it longitudinally (e.g., Stockemer, 2019). However, it was facilitated using a published list (e.g., GEF, 2020), containing information of GEF/NYSC members that have completed their incubation training programs across the country. Therefore, with the understanding that they are already at the starting process of implementing the VENC activity, a letter of consent was transmitted to the stakeholders involved (BOI/GEF, NYSC) to inform them on the survey in March 2021. In April, the survey instruments were transmitted to the graduates in WhatsApp media by following their contacts information displayed on the list.

However, following the low level of responses after the first six weeks of transmission, which was accompanied with reminders placed every after two weeks. The researchers switched using the conventional method of survey as suggested in Sekaran (2003). The procedure of administration was the simple random sampling technique. The technique was utilized to provide equal chances of participation among the population elements that are willing to respond to the survey. In essence, it was deemed relevant to the study because of the following reasons: (i) taking into account of the population representativeness since there is a list of the research population (Sharma, 2017) (ii) it is a technique capable of addressing some of the confounding problems in a population elements, which may be known or unknown (e.g., Stockemer, 2019). Thereafter, the survey ended in July 2021.

In addition, the data collected were sorted in Statistical Package for Social Sciences (SPSS-26) and later transferred into WarpPLS-8.0 software for conducting multiple regression analysis using the partial least square structural equation modeling (PLS-SEM) technique. The measurement model was analyzed using Factor-Based PLS algorithm via default Stable 3, and the structural model was analyzed using Warp 3 PLS algorithm via the PLS Mode M Basic technique. Consistent with Kock (2019, 2020), the paths coefficients and *p*-values were determined through the non-linear relationships, which provide accurate estimations of the latent variable's (LVs) scores, and also accounts for measurement errors. This is in addition to the advantages of the software to pre-process data, standardize the data, and reports full collinearity through the variance inflation factors (VIFs), which also doubles in controlling common method variance (CMV).

Questionnaire and Sampling

The instruments measuring variables of the study were adapted from past studies. They were added into the research questionnaire which is in three sections: (i) demographics of the respondents (ii) screening questions, and (iii) measurement items for the dependent variable (DV; VENC), independent variable (IV; PFs), mediating variable (ENTCPB), and moderating variable (ENTSUP). In total, there were 58 questions as summarized in Table 1.

Table 1. Measurement Items and their Sources

S/N	Constructs	Number of Items	Source
a.	Venture creation (VENC) ^{HOC}	29	Gatewood et al. (1995)
(i)	Gathering market information (GMI) ^{LOC}	(6)	
(ii)	Estimating potential profits (EPP) ^{LOC}	(4)	
(iii)	Finishing groundwork for products (FGPS) ^{LOC}	(3)	
	Developing the structure of the company (DSC) ^{LOC}		
(iv)	Setting up business operation (SBO) ^{LOC}	(7)	Szeli et al. (2018)
(v)		(9)	
b.	Perceptive Factors (PFs) ^{HOC}	20	
(i)	Self-efficacy (SELF) ^{LOC}	(5)	
(ii)	Outcome expectations (OUTEX) ^{LOC}	(4)	
(iii)	Entrepreneurial interest (ENTIN) ^{LOC}	(5)	Baughn et al. (2006)
(iv)	Goal choice (GOALC) ^{LOC}	(6)	Rogers et al. (2009)
c.	Entrepreneurial capabilities (ENTCPB) ^{LOC}	4	Hunjra et al. (2011)
d.	Entrepreneurial Support (ENTSUP) ^{LOC}	5	Kazumi and Kawai (2017), Malebana (2014)
			Shinnar et al. (2014)

Note: ^{HOC} = Higher-order construct, ^{LOC} = Lower-order construct

Consistent with the higher-order specification, estimation and modeling (e.g., Becker et al., 2012; Sarstedt et al., 2019b), the following constructs PFs and VENC, were specified under the formative method, while ENTSUP and ENTCPB were measured under the reflective method. Therefore, as provided in Fuller et al. (2015), Hair et al. (2019), Ramayah et al. (2018), and Simmering et al. (2015), a global single item measurement (marker variable) was added to the formative components during data collection. As a result, establishing basis for running a redundancy analysis (Hair et al., 2017). In essence, this was to ascertain the essence of the formative constructs with an alternatively-reflective measure of the same concept as demonstrated in Figures 2 & 3.

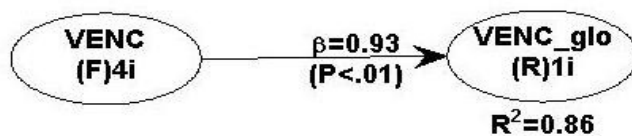


Figure 2: Regression between higher-order construct (VENC) and marker variable

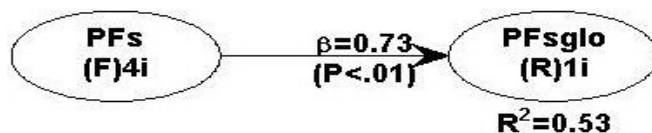


Figure 3: Regression between higher-order construct (PFs) and marker variable

So, using the criteria in Hair et al. (2019), the convergent validity result for VENC ($\beta = 0.93$, $R^2 = 0.86$, $p < 0.01$) and PFs ($\beta = 0.73$, $R^2 = 0.53$, $p < 0.01$) were found to be satisfactory because they scaled above the correlation of 0.70. Implying that each construct (VENC, PFs) contributed significantly in explaining the research model via the R^2 .

In addition, a 5-point Likert-Type scale was used from Strongly Disagree to (5) to Strongly Agree(1), to ascertain the respondent's agreement/disagreement on events leading to VENC activities. So, as emphasized in Fuller et al. (2015); Hair et al. (2019); Ramayah et al. (2018); Simmering et al. (2015), the marker technique was employed to contain potential problems of CMV. However, the sample size was determined at 160 to comply with the inverse square root method recommended for studies using the PLS-SEM technique (e.g., Kock & Hadaya, 2018). Therefore, 320 questionnaires were distributed to the GEF/NYSC graduates and 291 responses were found useful for the study. Table 2 showed the summary of the administration.

Table 2: Questionnaire Distribution

Instruments	Frequency (<i>f</i>)	Percentage %
Distribution	320	100
Incomplete	29	9.06
Completed	291	90.94

So, consistent with the focus of the study in addressing the mechanism and contingency of effects between PFs and VENC through ENTCPB and ENTSUP. The indirect relationship was analyzed using the transmittal method of the explicit procedure suggested in Rungtusanatham et al. (2014), while the interaction effect was assessed using the two stages recommended in Hair et al. (2017), Kock (2020), Ramayah et al. (2018). All the regression analysis were conducted using Warp-PLS software.

Results

Respondent's Demographics

Demographic information of the respondents was sorted in Statistical Package for Social Sciences (SPSS 26) software. The information revealed that respondents between ages of 20 to 23 years, 24 to 26 years, 27 to 30 years, 31 years and above, and undisclosed were 11.3%, 35.1%, 40.5%, 12.7%, and 0.3%, respectively. Male respondents totaled 69.4%, while female respondents were 30.6%. Respondents which are single, married, divorced, undisclosed comprised 83.8%, 15.5%, 0.3%, and 0.3%, respectively. Those that attended university, polytechnic, other affiliation and undecided constituted 77.7%, 18.9%, 3.1%, and 0.3%, respectively. Participants with a bachelor degree, Higher National Diploma, others and undisclosed accounted for 74.9%, 16.8%, 7.6%, and 0.7%, respectively. In total, 96.9% of the study-sample agreed 'yes', they possessed prior entrepreneurship experience in VENC activities, while 3.1% disagreed 'no', they do not have prior entrepreneurship experience on VENC.

Table 3: Demographic Information of Respondents

Variable		Frequency (F)	Percentage (%)
Age	20 - 23 years	33	11.3
	24 - 26 years	102	35.1
	27 - 30 years	118	40.5
	31 & above	37	12.7
	Undisclosed	1	0.3
	Total	291	100
Gender	Male	202	69.4
	Female	89	30.6
	Total	291	100
Marital Status	Single	244	83.8
	Married	45	15.5
	Divorced	1	0.3
	Undisclosed	1	0.3
	Total	291	100

Variable		Frequency (F)	Percentage (%)
Institution Attended	University	226	77.7
	Polytechnic	55	18.9
	Other affiliations	9	3.1
	Undecided	1	0.3
	Total	291	100
Level of Education	Bachelor's degree	218	74.9
	Higher National Diploma	49	16.8
	Others	22	7.6
	Undisclosed	2	0.7
	Total	291	100
Entrepreneurship	Yes	282	96.9
Experience on Venture	No	9	3.1
Start-up Activities	Total	291	100

Common Method Variance

Consistent with the implementation of the formative design, a marker variable which is a reflective measure of the formatively-measured constructs measuring the essence of the component was applied at the data collection stage, which is in line with the criteria in Ali et al. (2018); Fuller et al. (2015); Simmering et al. (2015). According to Chin et al. (2013), this approach accounts for an ineffective way of addressing common method variance (CMV) in PLS analysis. So, since CMV is responsible for influencing significant level of biasness when measures are found with extreme high or low internal consistencies (e.g., Ali et al., 2018). Result of the outer model in Table 4 showed no-near-perfect reliabilities occurred, correlations were not found to be magnified, and inflated relations were not detected in the research model.

Table 4: Reliability and Convergent Validity Outputs

Construct	Item	Loadings	Cronbach's Alpha	Rho_A	Composite Reliability	AVE
GMI	GMI1	0.727	0.835	0.836	0.879	0.549
	GMI2	0.753				
	GMI3	0.776				
	GMI4	0.729				
	GMI5	0.732				
	GMI6	0.726				
DSC	DSC3	0.792	0.832	0.834	0.882	0.598
	DSC4	0.806				
	DSC5	0.750				
	DSC6	0.763				
	DSC7	0.757				
SBO	SBO4	0.709	0.871	0.875	0.903	0.610
	SBO5	0.834				
	SBO6	0.805				
	SBO7	0.793				
	SBO8	0.794				
	SBO9	0.743				
EPP	EPPI	0.806	0.823	0.831	0.883	0.654
	EPP2	0.779				
	EPP3	0.821				
	EPP4	0.828				
ENTSUP	ENTSP1	0.794	0.910	0.910	0.933	0.736
	ENTSP2	0.860				
	ENTSP3	0.881				
	ENTSP4	0.883				
	ENTSP5	0.867				
ENTCPB	ENTCP1	0.812	0.850	0.851	0.899	0.690
	ENTCP2	0.837				
	ENTCP3	0.833				

Construct	Item	Loadings	Cronbach's Alpha	Rho_A	Composite Reliability	AVE
SELF	ENTCP4	0.841	0.869	0.870	0.905	0.657
	SELF1	0.819				
	SELF2	0.832				
	SELF3	0.806				
	SELF4	0.820				
	SELF5	0.775				
OUTEX	OUTEX2	0.829	0.776	0.778	0.870	0.691
	OUTEX3	0.806				
	OUTEX4	0.858				
ENTIN	ENTIN2	0.803	0.787	0.791	0.863	0.611
	ENTIN3	0.790				
	ENTIN4	0.794				
	ENTIN5	0.737				
GOALC	GOALC1	0.792	0.761	0.764	0.863	0.677
	GOALC4	0.838				
	GOALC5	0.839				

Notes: GMI = Gathering market information. EPP = Estimating potential profit. DSC = Developing structure of the company. SBO = Setting-up business operation. ENTSUP = Entrepreneurial support. ENTCPB = Entrepreneurial capabilities. SELF = Self-efficacy. OUTEX = Outcome expectation. ENTIN = Entrepreneurial interest. GOALC = Goal- choice. INNOV = Innovativeness.

In addition, the structural model was not found to influence the outer model to the extent of having collinearity problems. This was informed through the outcomes of the VIFs which were found below the conservative score of 5 and also less than the ideal value of 3.3, when using the criteria in Ali et al. (2018), Kock (2022). However, by applying the average full collinearity variance

inflation factor (AVIF) to ascertain possible CMV. The result (AFVIF = 1.918) was still found to be less than the ideal 3.3, when applying the criteria of Kock (2020). Implying that the research model did not suffer from the threat of CMV and multicollinearity was not found to be an issue in the study.

Assessing the Measurement Model

Consistent with the approach in Ali et al. (2018); Hair et al. (2017), the outer model was analyzed based on indicator's collinearity, convergent validity, statistical significance, and relevance of indicators' weight. At stage 1, some indicators that were unable to meet the criteria for loadings (0.708) were removed e.g., ENTIN1, OUTEX1, GOALC2, GOALC3, GOALC6, SBO1, SBO2,

SBO3, DSC1 and DSC2. This was a similar scenario with the construct 'FGPS', that did not satisfy the discriminant validity criteria of Henseler et al. (2015), via the heterotrait-monotrait ratio (HTMT; 0.85 and 0.90). Therefore, as provided in Becker et al. (2012), the adjustments corrected the research model for stage 2 assessment. However, the outputs of both stage 1 and 2 can be seen in Figures 4 and 5, respectively.

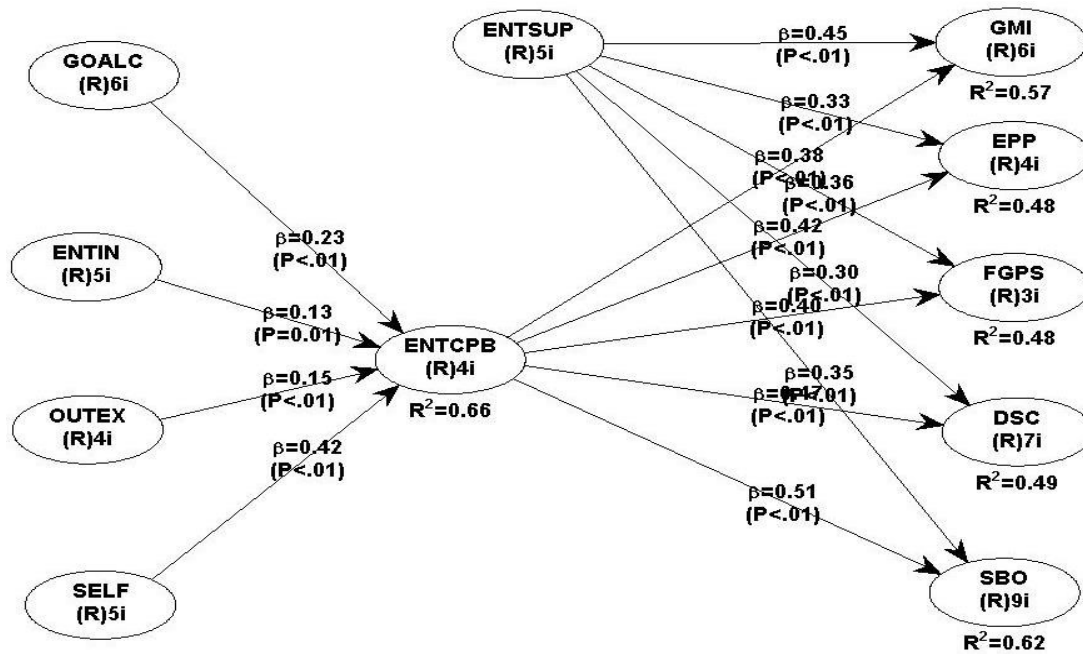


Figure 4. Stage One Outer Model

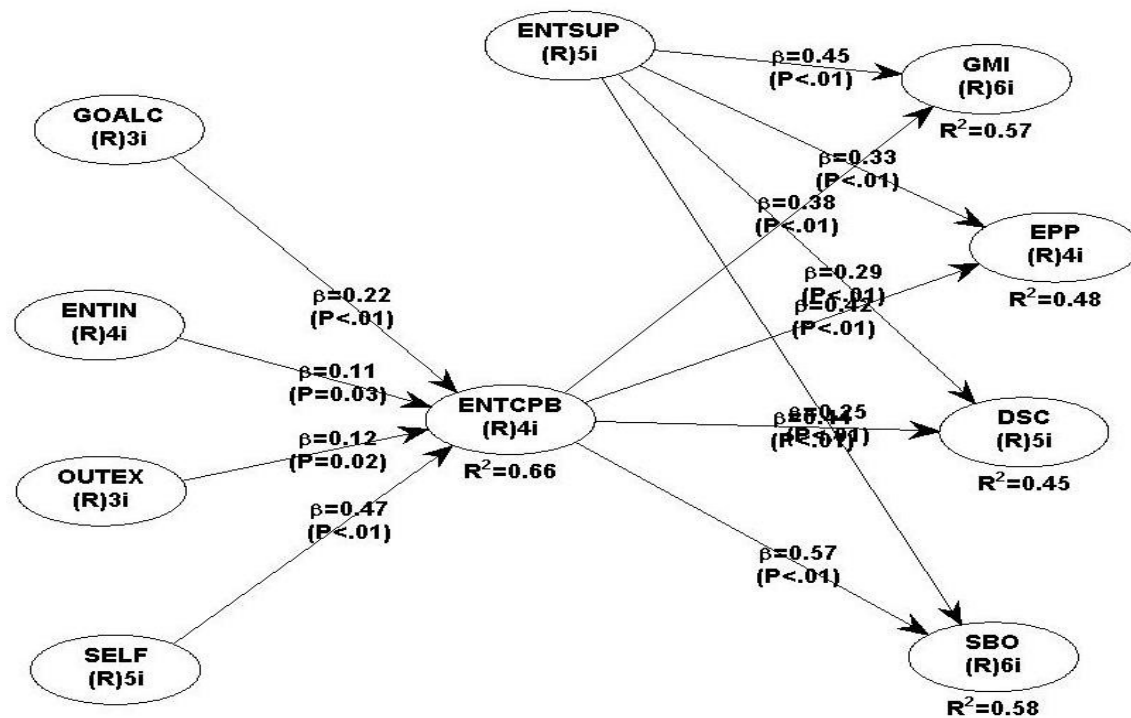


Figure 5. Stage two outer model

The result of redundancy analysis (refer; Figures 2 and 3), showed each construct scored convergent validity above 0.70, which is considered satisfactory based on Hair et al. (2019), Sarstedt et al. (2019a). While the VIFs were found below 5 and 3.3 that also satisfied the criteria in Hair et al. (2019), Kock (2022), Kock and Lynn (2012). The indicator's weight were also found to be significant at $p < 0.05$, and outer loadings found above 0.5, that also satisfied the criteria of Hair et al. (2017; 2019). By implication, the measurement model can be said to have fulfilled the requirement of a formative research model based on the evidences in Table 5.

Table 5: Measurement Model's Output

HOC	LOC	Beta value (R Squared value)	VIF	Weight (Loadings)	t-value weights	p-value	95% Confidence Interval
VENC	Iv_GMI	0.929(0.863)	2.279	0.293(0.854)	5.246	<0.001	[0.184, 0.403]
	Iv_EPP		2.249	0.292(0.849)	5.213	<0.001	[0.182, 0.401]
	Iv_DSC		2.117	0.285(0.828)	5.081	<0.001	[0.175, 0.394]
	Iv_SBO		2.581	0.302(0.880)	5.410	<0.001	[0.193, 0.412]
PFs	Iv_SELF	0.731(0.535)	1.840	0.293(0.809)	5.234	<0.001	[0.183, 0.403]
	Iv_OUT EX		2.111	0.307(0.848)	5.496	<0.001	[0.197, 0.416]
	Iv_GOA LC		2.023	0.301(0.831)	5.384	<0.001	[0.191, 0.410]
	Iv_ENTI N		1.979	0.302(0.836)	5.413	<0.001	[0.193, 0.412]

Note: HOC = Higher-order construct. LOC = Lower-order construct. VIF = Indicator's variance inflation factors. GMI = Gathering market information. EPP = Estimating potential profit. DSC = Developing structure of the company. SBO = Setting-up business operation. SELF = Self-efficacy. OUTEX = Outcome expectation. GOALC = Choice-goal. ENTIN = Entrepreneurial interest. p -value < 0.05 and VIFs < 2.5 are desirable for the formative indicators based on Kock (2022).

Assessing the Structural Model

Consistent with Hair et al. (2019) and Sarstedt et al. (2019a), the inner model presented in Figure 6 was analyzed based on collinearity between constructs, significance and relevance of hypothesized path, the explained variance through the adjusted R^2 , predictive relevance (Q^2) as well as the effect size (f^2). The result of VIFs for each path was found below 5 indicating no issue of multicollinearity based on the criteria in Hair et al. (2019) and Kock (2020).

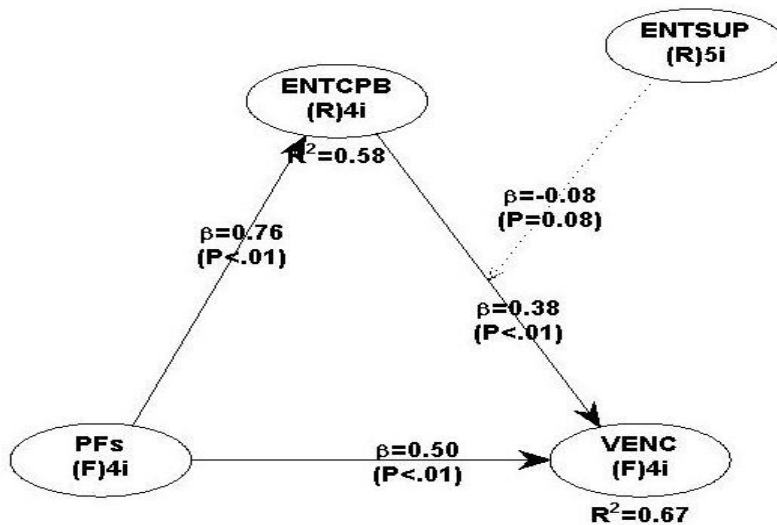


Figure 6. Inner Model

The result of mediating effect was found to be positive and significant ($\beta = 0.38$, $p < 0.05$) with apath coefficient that was complementary when applying the criteria in Hair et al. (2017) and Zhao et al. (2014). On the contrary, the result of moderation analysis was found to be negative and not significant ($\beta = -0.08$, $t = -1.41$, $p < 0.05$), with a path that was not supported when applying the criteria of Dawson (2014). Additional information on the inner model's estimates can also be seen in Table 6.

Table 6: Inner Model's Paths Result

Path	Path Coefficient	Standard Error	t-value	p-value	95% Confidence Interval	Decision
PFs $\rightarrow$ VENC	0.498	0.054	11.246	< 0.001	[0.495 0.704]	Supported Not Supported
PFs $\rightarrow$ ENTCPB	0.760	0.052	15.608	< 0.001	[0.704 0.906]	
ENTCPB $\rightarrow$ VENC	0.382	0.055	6.341	< 0.001	[0.241 0.459]	
ENTSUP $\times$ ENTCPB $\rightarrow$ VENC	-0.082	0.058	-1.395	0.008	[-0.194 0.033]	

Notes: ENTCPB = Entrepreneurial capabilities. VENC = Venture creation. ENTSUP = Entrepreneurial Support. p -values are one-tailed.

Table 7: Explained Variance and Predictive Relevance Outputs

Construct	R ²	Q ²
ENTCPB	0.577	0.574
VENC	0.674	0.674

However, the R² result as shown in Table 7 was found to be 0.67, which is slightly less than 0.90. By implication, it means that the model did not encounter problems of overfit based on Hair et al. (2019), which also indicates that the model has a large explained variance of the endogenous constructs when applying the criteria in Cohen (1992); Kock and Hadaya (2018). Consistently, the result of Q² was found to be 0.674 which is greater than zero as shown in Table 7. This implies that the model has predictive relevance of the dependent variable, and this supported the PLS paths as provided in Hair et al. (2017). So, in line with criteria in Cohen (1992), the f^2 results in Table 8 for mediation (0.287) and moderation (0.001) analysis can be interpreted as medium and no effect, respectively. Additional details of the paths assessments can also be seen in Table 8 below.

Table 8: Effect Size Result

Path	f^2	Implication
PFs $\rightarrow$ VENC	0.388	Large
PFs $\rightarrow$ ENTCPB	0.577	Large
ENTCPB $\rightarrow$ VENC	0.287	Medium
ENTCPB $\times$ ENTSUP $\rightarrow$ VENC	0.001	No effect

However, the model fitness indices were found to have satisfied the criteria in Kock (2022). This added support to the evidences in the hypothesized directions of causalities. For instance, the average path coefficients (APC = 0.339, $p < 0.001$), average R-squared (ARS = 0.547, $p < 0.001$), average adjusted R-squared (AARS = 0.543, $p < 0.001$), average block VIF (AVIF = 1.926) below the threshold of 3.3 and < 5, average full collinearity VIF (AVIF = 2.865) also < 3.3 and 5. Others include the Tenenhaus GoF (0.595) which is considered large since it is > 0.36, the Simpson's paradox ratio (SPR = 1) also acceptable since it was ≥ 0.70 , the R-squared contribution ratio (RSCR = 1) acceptable since it was ≥ 0.90 , Statistical suppression ratio (SSR = 1) acceptable since it was ≥ 0.70 , and the Non-linear bivariate causality direction ratio (NLBCDR = 1) also acceptable since it was ≥ 0.70 .

Assessing Mediating Effect

The indirect effect was analyzed using the criteria in Hair et al. (2017); Hayes and Rockwood (2017); Hayes and Scharkow (2013); and Zhao et al. (2014). The result as shown in Figure 6, revealed presence of a mediation ($\beta = 0.38, p < 0.05$) because the indirect effect was found to be significant. So, with reference to the summary of the structural model's estimates in Table 6, the type of mediation can be considered to be complementary, when applying the criteria in Hair et al. (2017) and Zhao et al. (2014). This implies that the hypothesized indirect effect linking the relationships i.e., PFs ENTCP VENC will be accepted e.g., "*H1*: the more graduates are optimistic on their entrepreneurial capabilities, the higher it positively mediates the relationship between perceptive factors and venture creation activities". Therefore, it can be deduced that ENTCPB only acquired a part of the indirect path and total effect in similar pattern the direct path acquires. As a result, conforming that intervening variable such as ENTCPB, must be recognized with values close to zero when held constant as compared through the mediator (e.g., Aguinis et al., 2017; Hayes & Rockwood, 2017).

Assessing Moderating Effect

Consistent with the result of the model's output in Figure 6, the moderation hypothesis sought to ascertain the interacting effect of ENTSP on the relationship between ENTCPB and VENC. However, the result was found to be negative and insignificant ($\beta = -0.08, t = -1.41, p > 0.05$). This means no moderation was found in the model when applying the criteria of Dawson (2014). This can be considered one of the reasons in which the effect size for moderation ($f^2 = 0.001$) was found to have no effect on the moderated path of the research model. Additional information regarding the negative and insignificant moderation plot can be seen in Figure 7.

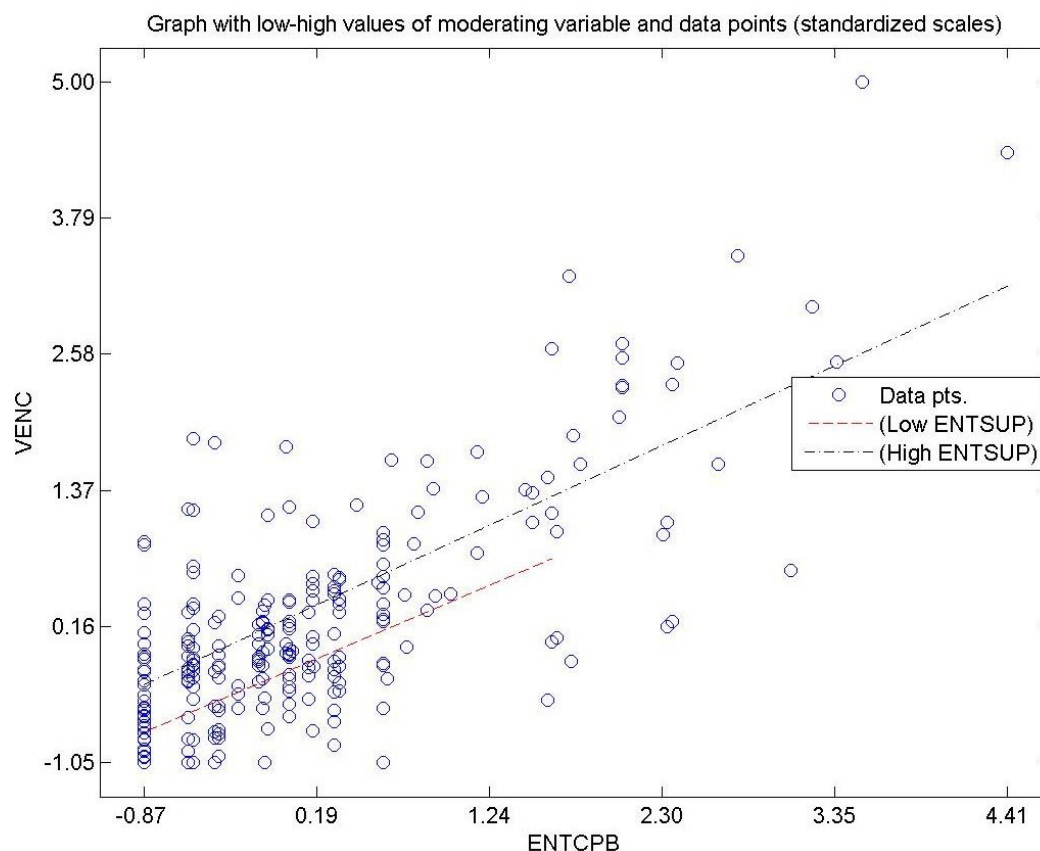


Figure 7. Negative and insignificant moderation plot

Discussion

This study assessed the mechanism and contingency of effects leading to venture creation through the mediating and moderating roles of entrepreneurial capabilities and entrepreneurial support. Some practical evidences were established in line with the methodological breakthrough for hierarchical components specification, modeling and validation that was recommended by Sarstedt et al. (2019). This involves the application of the formative procedure using the reflective-formative type-two method of validation to authenticate the hierarchical components studied. However, a disjointed two-stage approach was used to assess the measurement model while the two stages criteria was employed for the structural model.

The result of the outer research model was analyzed based on loading, reliability, discriminant validity and convergent validity. Therefore, some items (DSC1, DSC2, SBO1, SBO2, SBO3, OUTEX1, ENTIN1, GOALC2, GOALC3, and GOALC6) and indicators 'FGPS' that were unable to meet the criteria for loadings and discriminant validity were removed, respectively. In essence, providing avenue for achieving indicator's reliability and model's fitness as recommended by Hair et al. (2019), Henseler et al. (2016), Kock (2020) and Sarstedt et al. (2019b). A redundancy test was conducted on the higher-order components (VENC $\square$ VENC_glo, PFs PFs_glo) using the criteria of Chin et al. (2013), Kock and Lynn (2012). The regression result presented in Figures 2 and 3, were found to have convergent validities greater than 0.70 that met the criteria in Hair et al. (2019). In addition, it also shows that the research model did not encounter problems of collinearity. This also provided support for validating PFs as reflective-formative type II second-order construct.

The hypothesized path for indirect relationship between PFs and VENC through ENTCPB was found to be positive and significant ($\beta = 0.38, p < 0.05$), while the moderating role of ENTSUP in the relationship between ENTCPB and VENC was found to be negative and not significant ($\beta = -0.08, t = -1.41, p > 0.05$). This means the mediation result was a complementary type when applying the criteria in Hair et al. (2017), and Zhao et al. (2014). Whereas the moderation result can be interpreted as no interaction effect when applying the criteria in Dawson (2014).

By implication, the study revealed that it is not all occasions of PFs that will results into VENC through ENTCPB because PFs can also lead to VENC, and vice-versa. However, the moderating effect (ENTSUP) which was expected to strengthen this positive association only impacted insignificantly and negatively. Therefore, prospective graduates are encouraged to optimize the magnifying roles of ENTCPB and PFs as basis of implementing the VENC activities, while stakeholders through the intervention programs, should design an effective ENTSUP programs that will be covering both financial, non-financial and incubation resources. This will help address some of the obstacles noticed between support programs and the venture creation activities, which is consistent with the recommendations in some previous literatures like Bezeau et al. (2021), Li et al. (2020), Nakku et al. (2020), Neneh (2020), Otache (2019), Weiss et al. (2019) etc.

However, the result of mediation in this study corroborated some past researches like Martin et al. (2020), Pang et al. (2022), and Rodrigo-alarc et al. (2017), and also contradicted some evidences in Anwar et al. (2018), Naz et al. (2020), Rahman et al. (2019) among others. Similarly, the evidence in moderation conformed with the likes of Weiss et al. (2019) which is distinct from some evidences in Guo et al. (2017), and Li et al. (2020) among others. Therefore, this indicates need for additional line of research in this perspective. So, as suggested by Dawson (2014), Spector and Brannick (2011), future research can address some of the inconsistencies by adding some intervening/control variables to the research model. Because it can serve as one of the bases of improving the interaction effect in the moderated path e.g., $ENTSUP \times ENTCPB \rightarrow VENC$.

Conclusion

This study explores graduates' start-up activities in venture creation (VENC), which was determined through the predictive role of Social Cognitive Career Theory (SCCT). In essence, it was designed to develop a framework that will guide the younger generation of students on activities leading to venture creation, which is one of the bases of attaining self-reliance. Therefore, the SCCT was proxied in this context as perceptual factors (PFs). This relationship was examined through the mediating and moderating roles of entrepreneurial capabilities (ENTCPB) and entrepreneurial support (ENTSUP). Therefore, by conducting the research using the formative procedure, it found support for validating the PFs and VENC as reflective-formative type-II second-order constructs. Accordingly, the research finding showed that possessing attributes of ENTCPB are essential components required for undertaking VENC activities. This is because the ENTCPB was found to have a complementary mediating effect on the relationship between PFs and VENC undertaken among graduates that were surveyed. Therefore, prospective entrepreneurs (e.g., students/graduates) opting to pursue self-reliance upon graduation are advised to optimize the magnifying role of ENTCPB when carrying out the VENC activities (e.g., Hunjra et al., 2011; Rideout & Gray, 2019).

However, the moderating role of ENTSUP on the relationship between ENTCPB and VENC was found to be negative and not significant. This implies that the interacting effect of ENTSUP which was expected to enhance the positive relation between ENTCPB and VENC only impacted negatively. So, based on this evidence, the researchers suggested re-analyzing the research model in a different context using additional intervening/control variables. However, intervention agencies such as BOI, CBN, etc., are advised to integrate the components of ENTSUP covering both financial, non-financial and incubation resources into the schemes of support designed for training graduates. This will go a long way to strengthen their nascent processes related to the VENC activities (e.g., Bezeau et al., 2021; Li et al., 2020; Nakku et al., 2020; Neneh, 2020; Otache, 2019; Weiss et al., 2019). However, even as the study enhances the understanding of VENC through the cognitive attributes of some selected graduates' entrepreneurs, it is also accompanied with some limitations that paved way for future studies.

Limitation and Recommendation

One major limitation associated to the study is related to the chosen method of conducting the research. This affected the possibilities of generalizing the research findings. However, future researchers can overcome this dilemma using a longitudinal survey method. This will help enhance understanding of the phenomena especially when data are collected from the respondents during the incubation training and also after completion of training. Some studies like McGee et al. (2019), Weiss et al. (2019) etc., used similar approach and were able to generalize findings.

In addition, the study uncovers that VENC activities among school graduates are informed based on their perceptual factors in the SCCT (self-efficacy, outcome expectation, goal choice and vocational interest) through the magnifying role of entrepreneurial capabilities; given that entrepreneurial support interacted negatively and insignificantly on the moderated relationship. Therefore, graduates should maximize the use of ENTCPB skills when carrying out the VENC activities, while stakeholders responsible for training graduates are advised to merge the three components of ENTSUP (financial, non-financial, incubation facilities) so as to strengthen effective support mechanisms that are required to enhance graduates' VENC activities.

References

- Agbim, C. K., Oriemgbe Oriarewo, G., & Owocho, M. (2013). Factors influencing entrepreneurial intentions among graduates of Nigerian tertiary institutions. In *International Journal of Business and Management Invention ISSN* (Vol. 2). Online. www.ijbmi.org
- Agency Report, N. A. of N. (2020). *Nigeria's unemployment rate hits 33.5 per cent by 2020 –Minister* | *Premium Times Nigeria*. Premium Times. <https://www.premiumtimesng.com/news/top-news/328137-nigerias-unemployment-rate-hits-33-5-per-cent-by-2020-minister.html>
- Aguinis, H., Edwards, J. R., & Bradley, K. J. (2017). Improving Our Understanding of Moderation and Mediation in Strategic Management Research. *Organizational Research Methods*, 20(4), 665–685. <https://doi.org/10.1177/1094428115627498>
- Ahmed, T., Chandran, V. G. R., Klobas, J. E., Liñán, F., & Kokkalis, P. (2020). Entrepreneurship education programmes: How learning, inspiration and resources affect intentions for new venture creation in a developing economy. *International Journal of Management Education*, 18(1), 100327. <https://doi.org/10.1016/j.ijme.2019.100327>
- Aidelunuoghene, S. O. (2013). Entrepreneurship Education In Nigeria : A Panacea For Youth. *Journal of Education and Practice*, 4(6), 61–67. https://dlwqtxts1xzle7.cloudfront.net/49692376/4814-6887-1-PB.pdf?1476806768=&response-content-disposition=inline%3B+filename%3DEntrepreneurship_Education_In_Nigeria_A.pdf&Expires=1593589888&Signature=GGk5Seuas~4yNJ4uulmhpxj6aqlBBiUFha1XTz~CaA3mgcj sFt~1af
- Al-Awbathani, R., & Malek, M. M. (2019). The Effect Of Entrepreneurial Passion And Entrepreneurial Outcome Expectations On Entrepreneurial Career Choice By Utilizing The Social Cognitive Career Theory (Scct) Among *International Journal of Small Business and Entrepreneurship Research*, 7(5), 1–16. https://www.researchgate.net/profile/Rabea_Al-Awbathani/publication/340952789_THE_EFFECT_OF_ENTREPRENEURIAL_PASSION_AND_ENTREPRENEURIAL_OUTCOME_EXPECTATIONS_ON_ENTREPRENEURIAL_CAREER_CHOICE_BY_UTILIZING_THE_SOCIAL_COGNITIVE_CAREER_THEORY_SCCT_AMONGST_STUD
- Alarape, A. (2008). On the road to institutionalising entrepreneurship education in Nigerian universities. *International Journal of Management Education*, 7(2), 81–87. <https://doi.org/10.3794/ijme.72.174>
- Ali, F., Rasoolimanesh, S. M., Sarstedt, M., Ringle, C. M., & Ryu, K. (2018). An assessment of the use of partial least squares structural equation modeling (PLS-SEM) in hospitality research. *International Journal of Contemporary Hospitality Management*, 30(1), 514–538. <https://doi.org/10.1108/IJCHM-10-2016-0568>
- Aminu, A. (2019). Characterising Graduate Unemployment in Nigeria as Education-job Mismatch Problem. *African Journal of Economic Review*, VII(2), 113–130.
- Amos, A., & Alex, K. (2014). Theory of Planned Behaviour, Contextual Elements, Demographic Factors and Entrepreneurial Intentions of Students in Kenya. In *European Journal of Business and Management* www.iiste.org ISSN (Vol. 6, Issue 15). Online. www.iiste.org
- Antoniades, N., & Haan, P. (2019). Government capabilities as drivers of performance : path to prosperity. *Heliyon*, 5(September 2018), e01180. <https://doi.org/10.1016/j.heliyon.2019.e01180>

- Anwar, M., Khan, S. Z., & Khan, N. U. (2018). Intellectual Capital, Entrepreneurial Strategy and New Ventures Performance: Mediating Role of Competitive Advantage. *Business & Economic Review*, 10(1), 63–94. <https://doi.org/10.22547/BER/10.1.3>
- Anyebe, A. A. (2017). Entrepreneurship Education and Employment in Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 7(3), 739–747. <https://doi.org/10.6007/IJARBS/v7-i3/2789>
- Baron, R. A. (2007). BEHAVIORAL AND COGNITIVE FACTORS IN ENTREPRENEURSHIP: ENTREPRENEURS AS THE ACTIVE ELEMENT IN NEW VENTURE CREATION. *Strategic Entrepreneurship Journal Strat. Entrepreneurship J*, 1, 167–182. <https://doi.org/10.1002/sej.12>
- Baughn, C. C., Cao, J. S. R., Le, L. T. M., Lim, V. A., & Neupert, K. E. (2006). NORMATIVE, SOCIAL AND COGNITIVE PREDICTORS OF ENTREPRENEURIAL INTEREST IN CHINA, VIETNAM AND THE PHILIPPINES. *International Library Review*, 11(1), 57–77. <https://doi.org/10.1142/S108494670600026X>
- BBC, E. (2020). *BBC - Earth - Attenborough's Story of Life*. Explore the BBC. <http://www.bbc.com/earth/columns/attenboroughs-story-of-life>
- Becker, J., Klein, K., & Wetzels, M. (2012). Hierarchical Latent Variable Models in PLS-SEM : Guidelines for Using Reflective-Formative Type Models. *Long Range Planning*, 45(5–6), 359–394. <https://doi.org/10.1016/j.lrp.2012.10.001>
- Bezeau, A., Rabelo, C., Garavini, F., Guillo, A., Abdelmoumen, A., Lawal, T., Santoyo, N., Alalaakkola, H., Akrash, T. Bin, & Depelssemaker, M. (2021). Non-Financial support for SMEs in Times Of Crisis. *The Montreal Group, March*, 1–48. https://www.themontrealgroup.org/DATA/DOCUMENTATION/27_en~v~non-financial-support-for-smes-in-times-of-crisis.pdf
- Cadenas, G. A., Cantú, E. A., Lynn, N., Spence, T., & Ruth, A. (2020). A programmatic intervention to promote entrepreneurial self-efficacy, critical behavior, and technology readiness among underrepresented college students. *Journal of Vocational Behavior*, 116(January 2019), 103350. <https://doi.org/10.1016/j.jvb.2019.103350>
- Caines, V., Earl, J. K., & Bordia, P. (2019). Self-employment in Later Life: How Future Time Perspective and Social Support Influence Self-Employment Interest. *Frontiers in Psychology*, 10(448), 1–13. <https://www.frontiersin.org/articles/10.3389/fpsyg.2019.00448/full>
- Chin, W. W., Thatcher, J. B., Wright, R. T., & Steel, D. (2013). *Controlling for Common Method Variance in PLS Analysis : The Measured Latent Marker Variable Approach*. Springer Proceedings in Mathematics & Statistics. <https://doi.org/10.1007/978-1-4614-8283-3>
- Cho, Y. H., & Lee, J.-H. (2018). Entrepreneurial orientation, entrepreneurial education and performance. *Asia Pacific Journal of Innovation and Entrepreneurship*, 12(2), 124–134. <https://doi.org/10.1108/apjie-05-2018-0028>
- Clin, L. U. O., & Hope, C. (2014). *Contemporary Issues on Entrepreneurship in Information Science and Business Education Professions : Implications to Education of Nigeria Tertiary Institutions*. 6(33), 46–51.
- Cohen, J. (1992). A Power Primer. *Psychological Bulletin*, 112(1), 1–8.
- Dahlqvist, J., & Wiklund, J. (2012). Measuring the market newness of new ventures. *Journal of Business Venturing*, 27(2), 185–196. <https://doi.org/10.1016/j.jbusvent.2010.12.001>

- Daneshjoovash, S. K., & Hosseini, M. H. (2019). Evaluating impact of entrepreneurship education programs. *Emerald Publishing*, 61(7), 781–796. <https://doi.org/10.1108/ET-08-2017-0128>
- Dawson, J. F. (2014). Moderation in Management Research : What , Why , When , and How. *Journal of Business Psychology*, 29, 1–19. <https://doi.org/10.1007/s10869-013-9308-7>
- Dias, Á. L., & Santos, José Manuel Brás dos Pereira, R. T. de F. B. (2020). The role of entrepreneurship on the foundations of dynamic capabilities. *International Journal of Entrepreneurial Venturing*, 12(2), 208–227. <https://doi.org/doi/abs/10.1504/IJEV.2020.105570>
- Ebiringa, T. (2012). Perspectives: Entrepreneurship Development & Growth of Enterprises in Nigeria. *Entrepreneurial Practice Review*, 2(2), 31–35. <https://doi.org/10.5901/ajis.2012.v2n5p25>
- Egwu, I. L. (2014). Entrepreneurship Development in Nigeria: A Review. *IOSR Journal of Business and Management*, 16(1), 01–07. <https://doi.org/10.9790/487x-16140107>
- Ertuna, Z. I., & Gurel, E. (2011). The moderating role of higher education on entrepreneurship. *Education and Training*, 53(5), 387–402. <https://doi.org/10.1108/00400911111147703>
- Fosu, G. A. (2021). *Dear graduates are you still after white-collar jobs?* | Daily Trust. <https://dailytrust.com/dear-graduates-are-you-still-after-white-collar-jobs>
- Fuller, C. M., Simmering, M. J., Atinc, G., Atinc, Y., & Babin, B. J. (2015). Common methods variance detection in business research ☆. *Journal of Business Research*, 1–7. <https://doi.org/10.1016/j.jbusres.2015.12.008>
- Gatewood, E. J., Shaver, K. G., & Gartner, W. B. (1995). A longitudinal study of cognitive factors influencing start-up behaviors and success at venture creation. *Journal of Business Venturing*, 10(5), 371–391. [https://doi.org/10.1016/0883-9026\(95\)00035-7](https://doi.org/10.1016/0883-9026(95)00035-7)
- GEF, B. of I. N. (2020). *Graduate Entrepreneurship Fund* | Bank of Industry, Nigeria . Bank of Industry. <https://www.boi.ng/graduate-entrepreneurship-fund/>
- Guo, L., Susan, Y., Sharma, R., & Rong, K. (2017). Investigating e-business models ' value retention for start-ups : The moderating role of venture capital investment intensity. *Intern. Journal of Production Economics*, 186(July 2016), 33–45. <https://doi.org/10.1016/j.ijpe.2017.01.021>
- Gutiérrez, P. I. R., Pérez, M. del P. P., & Galicia, P. E. A. (2018). University entrepreneurship : how to trigger entrepreneurial intent of undergraduate students. *Journal of Science and Technology Policy Management*, 10(4), 927–950. <https://doi.org/10.1108/JSTPM-04-2018-0037>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (K. DeRosa (ed.); Second). SAGE Publications Ltd.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hayes, A. F., & Rockwood, N. J. (2017). Behaviour Research and Therapy Regression -based statistical mediation and moderation analysis in clinical research : Observations , recommendations , and implementation. *Behaviour Research and Therapy*, 98, 39–57. <https://doi.org/10.1016/j.brat.2016.11.001>
- Hayes, A. F., & Scharkow, M. (2013). The Relative Trustworthiness of Inferential Tests of the Indirect Effect in Statistical Mediation Analysis: Does Method Really Matter? *Psychological Science*, 1–10. <https://doi.org/10.1177/0956797613480187>

- Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: Updated guidelines. *Industrial Management & Data Systems*, 116(1), 2–20. <https://doi.org/10.1108/IMDS-09-2015-0382>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). *A new criterion for assessing discriminant validity in variance-based structural equation modeling*. Springer. <https://doi.org/10.1007/s11747-014-0403-8>
- Hopp, C., & Sonderegger, R. (2015). Understanding the Dynamics of Nascent Entrepreneurship- Prestart-Up Experience, Intentions, and Entrepreneurial Success. *Journal of Small Business Management*, 53(4), 1076–1096. <https://doi.org/10.1111/jsbm.12107>
- Hoque, A. S. M. M. (2018). Does Government Support Policy Moderate the Relationship Between Entrepreneurial Orientation and Bangladeshi SME Performance ? A SEM Approach. *International Journal of Business Economics and Management Studies*, 6(3), 37–59. https://www.researchgate.net/profile/A_S_M_M_Hoque2/publication/326440382_Does_Government_Support_Policy_Moderate_the_Relationship_Between_Entrepreneurial_Orientation_and_Bangladeshi_SME_Performance_A_SEM_Approach/links/5b4db4c7aca27217ff9b5f63/Does-Gover
- Hu, W., Liu, H., Tian, Y., Zhang, X., & Mao, Y. (2022). Entrepreneurial Capability, Career Development, and Entrepreneurial Intention: Evidence From China's HR Survey Data. *Organizational Psychology*, 13(April), 1–12. <https://doi.org/10.3389/fpsyg.2022.870706>
- Hunjra, A. I., Ahmad, M. H., Ur-Rehman, K., & Safwan, N. (2011). Factors influencing intention to create new venture among young graduates. *Africa Journal of Business Management*, 5(1), 121–127. <https://doi.org/10.5897/AJBM10.879>
- Kannadhasan, M., Parikshit, C., Pankaj, S., & Sivasankaran, N. (2018). Relationships among social capital, self-efficacy, and new venture creations. *Management Decision*, 56(1), 204–218. <https://doi.org/https://doi.org/10.1108/MD-04-2017-0304>
- Kazumi, T., & Kawai, N. (2017). Institutional support and women's entrepreneurial self-efficacy. *Asia Pacific Journal of Innovation and Entrepreneurship*, 11(3), 345–365. <https://doi.org/10.1108/apjie-12-2017-041>
- Kock, N. (2019). Factor-based structural equation modeling with WarpPLS. *Australasian Marketing Journal (AMJ)*, 27(1), 57–63. <https://doi.org/10.1016/j.ausmj.2019.02.002>
- Kock, N. (2020). *WarpPLS User Manual : Version 7. 0* (Patent No. WarpPLS User Manual: Version 7.0). Ned Knock. https://www.scriptwarp.com/warppls/UserManual_v_7_0.pdf
- Kock, N. (2022). *WarpPLS user manual : Version 8.0*. ScriptWarp Systems. https://scriptwarp.com/warppls/UserManual_v_8_0.pdf
- Kock, N., & Hadaya, P. (2018). Minimum sample size estimation in PLS-SEM : The inverse square root and gamma-exponential methods. *Information Systems Journal*, 28, 227–261. <https://doi.org/10.1111/isj.12131>
- Kock, N., & Lynn, G. S. (2012). Lateral Collinearity and Misleading Results in Variance-Based SEM : An Illustration and Recommendations Lateral Collinearity and Misleading Results in Variance-. *Journal of the Association for Information Systems*, 13(7), 546–580.
- Kolade, O. (2018). Venturing under fire: Entrepreneurship education, venture creation, and poverty reduction in conflict-ridden Maiduguri, Nigeria. *Education and Training*, 60(7–8), 749–766. <https://doi.org/10.1108/ET-08-2017-0124>
- Lent, R., Brown, S. D., & Hackett, G. (1994). Toward a unifying scct and academic interest, choice and performance. In *Journal of Vocational Behavior* (Vol. 45, pp. 79–122).

- Lent, R. W., & Brown, S. D. (2008). Social cognitive career theory and subjective well-being in the context of work. *Journal of Career Assessment*, 16(1), 6–21. <https://doi.org/10.1177/1069072707305769>
- Lent, R. W., & Brown, S. D. (2013). Social cognitive model of career self -management: Towarda unifying view of adaptive career behavior across the life span. *Journal of Counseling Psychology*, 60(4), 557–568. <https://doi.org/10.1037/a0033446>
- Lent, R. W., & Brown, S. D. (2019). Social cognitive career theory at 25 : Empirical status of the interest , choice , and performance models. *Journal of Vocational Behavior*, 115(April), 1– 14. <https://doi.org/10.1016/j.jvb.2019.06.004>
- Li, C., Ahmed, N., Qalati, S. A., Khan, A., & Naz, S. (2020). Role of Business Incubators as a Tool for Entrepreneurship Development : The Mediating and Moderating Role of Business Start-Up and Government Regulations. *Sustainability*, 12(4), 1–23. <https://www.mdpi.com/2071-1050/12/5/1822>
- Li, J., Qu, J., & Huang, Q. (2018). Why are some graduate entrepreneurs more innovative than others ? The effect of human capital , psychological factor and entrepreneurial rewards on entrepreneurial innovativeness. *Entrepreneurship & Regional Development*, 5626(5–6), 479–501. <https://doi.org/10.1080/08985626.2017.1406540>
- Liguori, E. W. (2012). *Extending Social Cognitive Career Theory into the Entrepreneurship Domain: Entrepreneurial Self-Efficacy's Mediating Role Between Inputs, Outcome Expectations, and Intentions* [Louisiana State University and Agricultural and Mechanical College]. https://digitalcommons.lsu.edu/cgi/viewcontent.cgi?article=3523&context=gradschool_dissertations
- Liguori, E. W., Bendickson, J. S., & McDowell, W. C. (2017). Revisiting entrepreneurial intentions : a social cognitive career theory approach. *International Entrepreneurship and Management Journal*, 1–12. <https://doi.org/10.1007/s11365-017-0462-7>
- Liguori, E., Winkler, C., Vanevenhoven, J., Winkel, D., James, M., Winkler, C., Vanevenhoven, J., Winkel, D., & James, M. (2020). Entrepreneurship as a career choice : intentions , attitudes , and outcome expectations. *Journal of Small Business & Entrepreneurship*, 32(4), 311–331. <https://doi.org/10.1080/08276331.2019.1600857>
- Malebana, M. J. (2014). The effect of knowledge of entrepreneurial support on entrepreneurial intention. *Mediterranean Journal of Social Sciences*, 5(20), 1020–1028. <https://doi.org/10.5901/mjss.2014.v5n20p1020>
- Martin, S. L., Javalgi, R. R. G., & Ciravegna, L. (2020). Marketing capabilities and international new venture performance: The mediation role of marketing communication and the moderation effect of technological turbulence. *Journal of Business Research*, 107(November2019), 25–37. <https://doi.org/10.1016/j.jbusres.2019.09.044>
- Mcgee, J. E., Peterson, M., Mcgee, J. E., & Peterson, M. (2019). The Long-Term Impact of Entrepreneurial Self-Efficacy and Entrepreneurial Orientation on Venture Performance The Long-Term Impact of Entrepreneurial Self-Efficacy and Entrepreneurial Orientation on Venture Performance. *Journal of Small Business Management*, 57(3), 720–733. <https://doi.org/10.1111/jsbm.12324>
- Meoli, A., Fini, R., Sobrero, M., & Wiklund, J. (2020). *How entrepreneurial intentions in fl uenceentrepreneurial career choices : The moderating in fl uence of social context*. 35(September2019). <https://doi.org/10.1016/j.jbusvent.2019.105982>
- Mushtaq, A. H., Ahmed Imran Hunjra, G. S. K. Naizi, Kashif -Ur-Rehman, & Rauf I. Azam. (2011). PLANNED BEHAVIOR ENTREPRENEURSHIP AND INTENTION TO CREATEA NEW VENTURE AMONG YOUNG GRADUATES Kashif-Ur-REHMAN. *Management*

- & *Marketing Challenges for the Knowledge Society*, 6(3), 437–456.
- Mwiya, B., Wang, Y., Shikaputo, C., Kaulungombe, B., & Kayekesi, M. (2017). Predicting the Entrepreneurial Intentions of University Students: Applying the Theory of Planned Behaviour in Zambia, Africa. *Open Journal of Business and Management*, 05(04), 592–610. <https://doi.org/10.4236/ojbm.2017.54051>
- Nakku, V. B., Agbola, F. W., Miles, M. P., & Mahmood, A. (2020). The interrelationship between SME government support programs, entrepreneurial orientation, and performance: A developing economy perspective. *Journal of Small Business Management*, 58(1), 2–31. <https://doi.org/10.1080/00472778.2019.1659671>
- Naz, S., Li, C., Umer, Z., & Rafiq, M. (2020). Linking Proactive Personality and Entrepreneurial Intentions: A Serial Mediation Model Involving Broader and Specific Self-Efficacy. *Journal of Innovation: Technology, Market, and Complexity*, 6, 1–21. <https://doi.org/10.3390/joitmc6040166>
- Neneh, B. N. (2019). From entrepreneurial alertness to entrepreneurial behavior : The role of trait competitiveness and proactive personality. *Personality and Individual Differences*, 138(October 2018), 273–279. <https://doi.org/10.1016/j.paid.2018.10.020>
- Neneh, B. N. (2020). Entrepreneurial passion and entrepreneurial intention : the role of social support and entrepreneurial self-efficacy. *Studies in Higher Education*, 0(0), 1–17. <https://doi.org/10.1080/03075079.2020.1770716>
- Newman, A., Obschonka, M., Schwarz, S., Cohen, M., & Nielsen, I. (2019). Entrepreneurial self-efficacy: A systematic review of the literature on its theoretical foundations, measurement, antecedents, and outcomes, and an agenda for future research. *Journal of Vocational Behavior*, 110(October 2017), 403–419. <https://doi.org/10.1016/j.jvb.2018.05.012>
- Nkechi, A., Ej, E. I., & Okechukwu, U. F. (2012). Entrepreneurship development and employment generation in Nigeria: Problems and prospects. *Universal Journal of Education and General Studies*, 1(4), 88–102.
- Olaniran, S. O., & Mncube, D. (2018). Barriers To Effective Youth Entrepreneurship And Vocational Barriers To Effective Youth Entrepreneurship And Vocational Education. *Academy of Entrepreneurship Journal*, 24(4), 1–10. https://www.researchgate.net/profile/Sunday_Olaniran/publication/330760549_BARRIERS_TO_EFFECTIVE_YOUTH_ENTREPRENEURSHIP_AND_VOCATIONAL_EDUCATION/links/5c52f140a6fdccd6b5d746c6/BARRIERS-TO-EFFECTIVE-YOUTH-ENTREPRENEURSHIP-AND-VOCATIONAL-EDUCATION.pdf
- Onimole, S. O., & Olaiya, S. A. (2018). Harnessing Full Employment Strategy For Nigeria. Entrepreneurship Imperatives, Prospects And Challenges. *Journal of Business and Organizational Development*, 10(1), 27–58. <http://www.cenresinournals.com/wp-content/uploads/2020/01/Page-27-58-431.pdf>
- Onuma, N. (2016). Entrepreneurship Education In Nigerian Tertiary Institutions: A Remedy To Graduates Unemployment. *British Journal of Education*, 4(5), 16–28. <https://dlwqtxtslxzle7.cloudfront.net/51371959/>
- Otache, I. (2019). Enhancing the effectiveness of entrepreneurship education : the role of entrepreneurial lecturers. *Education + Training*, 61(7/8), 918–939. <https://doi.org/10.1108/ET-06-2018-0127>
- Owoeye, F. (2021). NBS: Nigeria's unemployment rate hits 33.3% -- highest ever | TheCable. TheCable. <https://www.thecable.ng/nbs-nigerias-unemployment-rate-hits-33-3-highest-ever>

- Pang, C., Wang, Q., & Wu, S. (2022). Influence of dynamic capabilities on novelty -centered business model design : a moderated mediating effect analysis. *European Journal of Innovation Management*, 21, 1–23. <https://doi.org/10.1108/EJIM-09-2021-0465>
- Pérez-lópez, M. C., González-lópez, M. J., & Rodríguez-ariza, L. (2019). Applying the social cognitive model of career self-management to the entrepreneurial career decision : The role of exploratory and coping adaptive behaviours. *Journal of Vocational Behavior*, 112(July 2018), 255–269. <https://doi.org/10.1016/j.jvb.2019.03.005>
- Pham, Y. K., Hirano, K. A., Lindstrom, L., & Degarmo, D. S. (2020). Future Aspirations of Young Women With Disabilities : An Examination of Social Cognitive Career Theory. *Career Development and Transition for Exceptional Individuals*, 43(3), 169–179. <https://doi.org/10.1177/2165143420920168>
- Rahman, S., Saeed, I., & Afridi, F. (2019). A Multiple Mediation Analysis of the Growth in New Ventures. *Global Social Sciences Review (GSSR)*, IV(III), 264–270. [https://doi.org/10.31703/gssr.2019\(IV-III\).34](https://doi.org/10.31703/gssr.2019(IV-III).34)
- Ramayah, T., Cheah, J., Chuah, F., Ting, H., & Memon, M. A. (2018). *Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 3.0: An updated guide and practical guide to statistical analysis (2nd ed.)*. Pearson. <https://www.researchgate.net/publication/341357609%0APLS-SEM>
- Razmdoost, K., Alinaghian, L., & Linder, C. (2020). New venture formation: A capability configurational approach. *Journal of Business Research*, 113(April 2019), 290–302. <https://doi.org/10.1016/j.jbusres.2019.09.047>
- Rideout, E. C., & Gray, D. O. (2019). Does Entrepreneurship Education Really Work ? A Review and Methodological Critique of the Empirical Literature on the Effects of University - Based Entrepreneurship Education Does Entrepreneurship Education Really Work ? A Review and Methodological Critiq. *Journal of Small Business Management*, 51(3), 329–351. <https://doi.org/10.1111/jsbm.12021>
- Rodrigo-alarc, J., García-villaverde, P. M., Ruiz-ortega, M. J., & Parra-requena, G. (2017). From social capital to entrepreneurial orientation : The mediating role of dynamic capabilities. *European Management Journal*, 1–15. <https://doi.org/10.1016/j.emj.2017.02.006>
- Rogers, M. E., Creed, P. A., & Searle, J. (2009). The development and initial validation of social cognitive career theory instruments to measure choice of medical specialty and practice location. *Journal of Career Assessment*, 17(3), 324–337. <https://doi.org/10.1177/1069072708330676>
- Rungtusanatham, M., Miller, J. W., & Boyer, K. K. (2014). Theorizing, testing, and concluding for mediation in SCM research: Tutorial and procedural recommendations. *Journal of Operations Management*, 32(3), 99–113. <https://doi.org/10.1016/j.jom.2014.01.002>
- Saanyol, T. (2021). *Youths represent 64 per cent of unemployed population in Nigeria — Atiku*. Nigerian Tribune. https://tribuneonline.ng.com/youths-represent-64-per-cent-of-unemployed-population-in-nigeria---atiku/?utm_term=Autofeed&utm_medium=Social&utm_source=Facebook&fbclid=IwAR2cCZSNZrfqGZoktYhNz5wL4KEj510I4DhW3C2D4vDWILx86PPvls8Egbw#Echobox=1617947376
- Sanyaolu, A. (2019). *26m job seekers apply for positions as NNPC closes recruitment portal – The Sun Nigeria*. The Sun News Paper. <https://www.sunnewsonline.com/26m-job-seekers-apply-for-positions-as-nnpc-closes-recruitment-portal/>

- Sarstedt, M., Hair, J. F., Cheah, J., Becker, J., & Ringle, C. M. (2019a). How to specify , estimate, and validate higher-order constructs in. *Australasian Marketing Journal (AMJ)*, 27(3), 197–211. <https://doi.org/10.1016/j.ausmj.2019.05.003>
- Segal, G., Borgia, D., & Schoenfeld, J. (2002). Using Social Cognitive Career Theory to Predict Self-Employment Goals. *New England Journal of Entrepreneurship* , 5(2), 46–55. <https://www.emerald.com/insight/content/doi/10.1108/NEJE-05-02-2002-B007/full/html>
- Sekaran, U. (2003). *Research Methods for Business* (J. Marshal & P. McFadden (eds.); Fouth). John Wiley & Sons Inc.
- Seo, Y. W., & Lee, Y. H. (2019). Effects of internal and external factors on business performance of start-ups in South Korea: The engine of new market dynamics. *International Journal of Engineering Business Management*, 11, 1–12. <https://doi.org/10.1177/1847979018824231>
- Sharma, G. (2017). Pros and cons of different sampling techniques. *International Journal of Applied Research*, 3(7), 749–752. https://dlwqtxts1xzle7.cloudfront.net/58765080/Pros_and_cons_of_sampling-with-cover-page-v2.pdf?Expires=1651859892&Signature=RMUy9vbmd2Z~XxL~XF5xbQIy20bEGS1NE7pBEP4db7EIPBL1ytpb~eeZ9Pd9TfKk-ikHIIy-9lDgoQVqobYRrHyZ170fnzQMqFfUuW8FtrhKrFoiZPKMyBpr~7VjZipSWd
- Shehu, N.-A. R., & Ahmad, N. H. (2022). Entrepreneurial Orientation and Venture Creation in Nigerian Context : Assessing Mediating and Moderating Roles of Self -Efficacy and Entrepreneurial Support among Graduates. *Sustainability*, 14(9), 1–25. <https://doi.org/10.3390/su14094904>
- Shinnar, R. S., Hsu, D. K., & Powell, B. C. (2014). Self -efficacy, entrepreneurial intentions, and gender: Assessing the impact of entrepreneurship education longitudinally. *International Journal of Management Education*, 12(3), 561–570. <https://doi.org/10.1016/j.ijme.2014.09.005>
- Shirokova, G., Tsukanova, T., & Morris, M. H. (2019). The Moderating Role of National Culturein the Relationship Between University Entrepreneurship Offerings and Student Start - Up Activity : An Embeddedness Perspective The Moderating Role of National Culture in the Relationship Between University Entrepre. *Journal of Small Business Managemen*, 56(1), 103–130. <https://doi.org/10.1111/jsbm.12363>
- Simmering, M. J., Fuller, C. M., Richardson, H. A., Ocal, Y., & Atinc, G. M. (2015). Marker Variable Choice , Reporting , and Interpretation in the Detection of Common Method Variance : A Review and Demonstration. *Organizational Research Methods*, 18(3), 473–511. <https://doi.org/10.1177/1094428114560023>
- Spector, P. E., & Brannick, M. T. (2011). Methodological Urban Legends : The Misuse of Statistical Control Variables. *Organizational Research Mthods*, 14(2), 287–305. <https://doi.org/10.1177/1094428110369842>
- Stephen, I. (2019). *Confronting Nigeria's unemployment crisis - Punch Newspapers*. Punch Newspaper. <https://punchng.com/confronting-nigerias-unemployment-crisis/>
- Stockemer, D. (2019). Quantitative methods for the social sciences: A practical introduction withexamples in SPSS and Stata. In *Quantitative Methods for the Social Sciences*. <https://doi.org/10.1007/978-3-319-99118-4>
- Szeli, L., Gilmartin, S. K., Chen, H. L., & Sheppard, S. (2018). The entrepreneurial engineer: A quantitative analysis of personality factors in the social cognitive career theory. *ASEE AnnualConference and Exposition, Conference Proceedings, 2018-June*(June).
- Weiss, J., Anisimova, T., & Shirokova, G. (2019). The translation of entrepreneurial intention intostart-up behaviour : The moderating role of regional social capital. *International*

- Small Business Journal: Researching Entrepreneurship*, 37(5), 473–501.
<https://doi.org/10.1177/0266242619831170>
- Wendling, E., & Sagas, M. (2020). An Application of the Social Cognitive Career Theory Model of Career Self-Management to College Athletes' Career Planning for Life After Sport. *Frontiers in Psychology*, 11(January). <https://doi.org/10.3389/fpsyg.2020.00009>
- Wright, M., & Marlow, S. (2012). Entrepreneurial activity in the venture creation and development process. *International Small Business Journal*, 30(2), 107–114.
<https://doi.org/10.1177/0266242611432793>
- Yazeed, M., Ringim, K. J., & Kura, M. K. (2020). Moderating Role of Perceived Social Support on the Relationship Between Entrepreneurship Education and Entrepreneurial Intention. *Journal of Entrepreneurship and Business*, 8(1), 104–119.
<https://doi.org/10.17687/JEB.0801.09>
- Zhao, X., JR, L. J. G., & Chen, Q. (2014). Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis. *Journal of Consumer Research, Inc.*, 37(2), 197–206.
<https://doi.org/10.1086/651257>

Alliance Portfolio Diversity: Weathering Exogenous Shock for SMEs in an emerging market economy

Noor Hasvenda Abd Rahim & Hasliza Abdul Halim

School of Management, Universiti Sains Malaysia, Malaysia

Abstract

Small and medium-sized enterprises (SMEs) are pivotal agents of change as they are accounted for significant roles and economic contributions in an emerging market economy. Given their importance, facilitating their development is crucial despite changes in the business ecosystem and climate due to the impact of environmental forces worldwide. The sudden and radical changes in the current and future economic situations, institutional, political, socio and technological discontinuities have spread their impact, leaving small firms to respond to the adversities by switching angles beyond their respective firm. With only little room to manoeuvre, maintaining performance in the altered environment is particularly challenging for SMEs considering their newness and smallness conditions. Against the background of pervasive environmental situations, various aspects were observed concerning their ability to withstand the impact of shock caused by external factors termed exogenous shock. Literature established strong hints about how potential diversities in partners, functional activities, and governance of their interorganisational relationship could lead to collaborative advantages and superior performance. The concept of diversities would broaden the current resource pool, aiding in combating exogenous shock. To date, relatively little research has examined how exogenous shocks affect alliances or alliance portfolios and their relationship with the performance of SMEs. Given the context of SMEs' performance under pressure, which has been the central premise in strategy and organisational studies, this study investigates the relationship between alliance portfolio diversity and its performance outcomes.

Keywords: alliance portfolio diversity; emerging market economies; exogenous shock; SMEs performance.

Introduction

The dynamic of the business environment is changing, with no advantages that seem to last forever. SMEs operating in an emerging market economy are often exposed to the uncertainty surrounding the ecosystem they are operating. Notwithstanding the limitations, there have been gaps in their competitive positioning compared to firms in more developed economies, forcing them to adapt while maintaining a state of sustainable competitive advantages (Thomason et al., 2013). Consequently, in coping with the enduring current and potential industry changes, alliances-related strategies have become more of a routine where firms must cope in order for their firms to survive and thrive (Harrigan, 2018).

Exogenous shock refers to conditions with sudden, radical changes that significantly alter the firm's environment (Haveman, 1992). Compared to developed markets, exogenous shocks such as economic crises, technological discontinuities, institutional reformations, and socio-political changes are often revealed in a less sophisticated economic environment known as emerging markets such as Malaysia. Given the indispensable contribution of SMEs to the economy, the ability to withstand the impact of exogenous shock needs to be nurtured as the world is expected to experience one of the most challenging global economic recessions in the near future. A comprehensive study by Guenette et al. (2022) revealed that the world may be edging toward a global recession in 2023 due to the simultaneous hike in interest rates and how

it affects inflation. The study has implied financial crises in emerging markets and developing economies that would do them lasting harm.

The purpose of forming strategic alliances in diverse forms, such as in portfolios, can cushion various competitive demands in terms of resources and capabilities in the event of exogenous shock. Literature suggests that firms manage their alliances with a portfolio perspective along their value chain activities while minimizing managerial costs with proper governance structures (Jiang et al., 2010). Given these concerns, there are profound reasons to believe that SMEs may propel more with synergistic efforts among their allies to endure the leaps and bounds of the economic consequences.

Throughout the dynamic environmental challenges phase in emerging economies, SMEs face challenges over peculiarities such as "institutional readiness" in establishing and performing their alliances-related strategy. Despite being integral, alliances in this environment are always associated with political and economic risk as the regulatory environment created by the systems of laws of the SME's country does impact both the choice to form an alliance and the formation of multiple alliances over time (Dickson & Weaver, 2011). Thus far, relatively little research has examined how alliance portfolios in consideration of exogenous shock affect the performance outcomes of a firm. Some of the recent investigations of inter-organisational relationships (Argyres et al., 2020; Ghisi & Martinelli, 2006; Parmigiani & Rivera-Santos, 2011), alliance performance (Prabhudesai et al., 2022), alliance capabilities (Priyono et al., 2019; Wang & Rajagopalan, 2015), and alliance portfolios (Lichtenthaler, 2016; Wassmer, 2010) only indirectly discussed the impact of general external change on alliances and did not consider the impact of exogenous shocks. As a result, the alliance literature offers a limited answer to the question, what is the relationship between alliances given exogenous shocks and performance outcome of SMEs? A better understanding of the potential value of the diversities in their alliance portfolio build-up and its relationship to performance outcome will help firms withstand exogenous shock using relational-specific assets.

Framing literature towards theories used to explain alliances business strategies

Strategising towards performance from an "inside-out" view by building up using companies' internal resources and capabilities is a common theme in the study of performance (Vorhies & Morgan, 2005). There have been assumptions of theory such as in resource-based view (RBV) discards the idea of outside involvements (e.g., alliances, collaborations, coopetition) in defining competitive advantages to the firm (J. Barney, 1991; J. B. Barney, 2001; Wernerfelt, 1984). Kilduff et al. (2016) added to this context by suggesting that intense rivalries and hyper-competitive impede the inter-organisational relationship. The concerns are due to the potential unethical joint behaviour such as the practice of deceptions, unethical negotiation tactics and unsportsmanlike behaviour when competing against their rivals. However, these are among the drawbacks from one side of the coin, which may not be entirely unmanageable. Some managerial approaches and structural adjustments were introduced to manage seemingly the paradox and ambiguities in the inter-organisational relationship (Das & Kumar, 2010; Kumar, 2014; Wilhelm & Sydow, 2018).

Nowadays, the fiercely competitive business environment has forced business entities to move beyond traditional ways of firm management and strategy to improve their competitive positioning. Notwithstanding the premise of RBV, external engagement as a means to complement a firm's resources and competitive advantages is complemented by other theories, such as the relational view (Dyer et al., 2018; Dyer & Singh, 1998). This theory interprets competitive advantages from an angle of relational rents. It advances the firm's approach to improving performance by integrating joint efforts such as in knowledge-sharing routines, learning, relation-specific and effective governance (Dussauge et al., 2000; Wasiuzzaman, 2019; Zhu et al., 2020) through alliances among members of networks and industries. The

theory assumes that alternative in procuring a firm's complementary resources and capability beyond a single firm is embedded in idiosyncratic interfirm resources and routines. The theory offers propositions around the interplay of individual, dyads, and networks in support of the attainment of relational rents that leads to collaborative advantages and hence, superior SMEs performance. Figure 1 shows the determinants of inter-organisational related pursues that lead to relational rents.

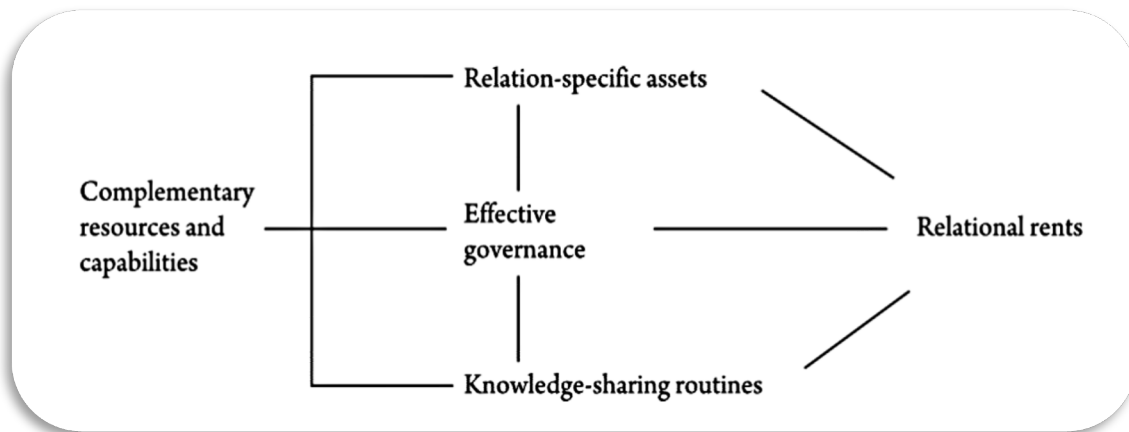


Figure 1. The determinants of inter-organisational related pursues that lead to relational rents. Source: Adapted from Dyer et al., (2018)

Concept of SMEs and the assessments of their performance

Literature has established various conceptualisations, operationalisation, and measures in explaining the variations of SME performances. Unlike larger firms, performance among SMEs is distinctly represented because their organisational structure is not a miniaturised version of a larger firm (Welsh & White, 1981). In most cases, a broader conceptualisation of business performance would include operational or non-financial performance indicators other than financial-related indicators (Neely et al., 2000). Given this, strategic management and entrepreneurship research commonly finds indicators geared towards business growth (Ahmad et al., 2011; Short et al., 2009). Additionally, performance-related studies are often guided by the principal premise of the theory in performance measurements. RBV researchers generally use sustainable competitive advantages as a proxy for performance outcomes (Barney, 1991; Girod & Whittington, 2017). Meanwhile, Christoffersen et al. (2014) classified performance measures based on the mode of assessment (e.g., the measurement being used) and how the construct related are being studied (e.g., level of analysis such as firm-level or alliance-level) when it comes to alliance-related outcomes. Four categories of measures are suggested: subjective, accounting, stability, and cumulative abnormal returns (CAR). A broader view of SMEs performance has been assessed through collaborative advantages, namely, the: duration, objectives, and financial performance of alliance-related business strategies (Kanter, 1994). Participation in collaborative strategies offers mutually beneficial performance outcomes when collaborating with network members (Dyer et al., 2018). It is observably critical for SMEs operating in emerging market economies where economic adversities can be severe to them individually to maintain a resource pool to withstand intense environmental and business demand. Subsequently, the relational view and RBV guided the review in this article is conceptualised under the outcomes set by "firm-specific" or "collaboration-specific" (Khanna et al., 1998) that coincides where benefits accrue to a focal firm helps in their performance. The viewpoint is on the application of learning and benefiting alliances to its operations which helped the firm attain sustainable competitive advantages, which aligns with the principal premise of RBV and the relational view.

Alliance Portfolio Diversity and SMEs Performance

The emerging body of knowledge, such as in strategic management, inter-organisational relationship, and small business-related literature, recognises resources and capabilities limitations for SMEs (Kallmuenzer et al., 2021). Subsequently, the urge has been to champion resource diversity rather than depending solely on internal strength to attain better organisational goals (Street & Cameron, 2007). In the reflection of a small firm's dilemma, alliance-related strategies are among the path to achieving managers' objectives by leaning more on collaborative advantages as a means to competitive advantages. Compared with other types of collaborative strategies involving operational matters (e.g., mergers and acquisitions), alliances bring more flexibility in changing environments because they are easier to form or disband (Gulati, 1998). Maintaining alliance portfolios with simultaneous engagement with different partners has become a global phenomenon in today's business landscape, and it is conducive for firms to complement their resource requirements (Contractor & Reuer, 2019). Although traditional alliance research has primarily focused on single alliances, researchers have warranted further scholarly research due to the need for a diverse alliance portfolio based on the unanticipated complexities of today's business environment (Khanna et al., 1998; Lavie, 2006).

Alliance portfolio diversity can be defined as the degree of variance in partners, functional purposes, and governance structure (Jiang et al., 2010). Diversity in the context of this study is reviewed as the range of activities where SME firms use alliance-related strategies to maintain performance in exogenous shock. This "shock" concerns sudden changes in the environment where broad issues such as economic crises that impact spreads beyond specific firms or industries are disruptive to multiple sectors of an economy. These unexpected events, such as rapid changes, natural disasters, disrupted supply chains, and terrorist attacks, shock the public and paralyze financial markets. Other than that, industrial accidents have significant ecological and economic consequences that flow through supply chains affecting the logistics of raw materials to transportation. Some firms are more successful in responding to (or even surviving) the 'extreme' events than others under similar circumstances (Fiksel et al., 2015). However, SMEs operating in an emerging market is vulnerable to economic slowdowns. The harming factors to their performance are reduced demand, limited access to resources, and disruptive supply and distribution channels (Singh & Yip, 2000).

Partners Diversity and SMEs Performance

Partners diversity covers the dimensions of industry, national and organisational partners in a portfolio of alliances. Firstly, SME firms and their alliances with industry players benefit each other, either related partners in upstream and downstream of the supply chain (e.g., complementary resources and learning) or unrelated partners of other industries (e.g., entry into market and innovations) (Kogut, 1988). Cohen and Levinthal (1990) pointed to the overlapping structure of the same industry's partners, such as in the nature of business, backgrounds, and technological bases, as a medium offering the most significant learning and imitating opportunities. On the other hand, a diverse portfolio from non-related industries also brings opportunities in terms of broadened search options and access to deeper resource pools that drive added value creation and capability development opportunities. However, scholars emphasise that this type of partnership must surpass some hurdles at the beginning to find synergy to solve conflicts, coordination issues and managerial costs among them (Goerzen & Beamish, 2005).

Other than that, diversity with diverse partners from different nations, such as in cross-border alliances, offers a path to market entry and complementary capabilities and enhances knowledge bases and learning (Lubatkin et al., 2001; Glaister & Buckley, 1996; Lane et al., 2001). Economic crises often challenge firms to look for market diversification to compensate

for lesser business opportunities. The cross-border engagement provides SMEs in emerging market economies opportunities to maintain this type of diversity in their portfolios to hedge against limited domestic market challenges.

Between public-private, profit-orientated, and non-profit-oriented, each of these entities offers individual strength to a deeper pool of resources and capabilities (Harrison et al., 2001). It is an efficient way to cope with uncertain conditions related to more extensive and complex adaptation surrounding an adjusted environment and improving their performance. Firms are believed to have developed the core competencies independently but often rely on external sources to supplement the non-core or ad-hoc resources (Santoro & Chakrabarti, 2002). Therefore, this study proposes the following:

Proposition 1: Partners diversity has a linear (positive) relationship with SMEs performance.

The more that SMEs maintaining diverse partnership within industries, national and organisational in their alliance portfolio, there is a greater chance of improving their business performance in the event of exogenous shock.

Functional diversity and SMEs performance

Functional diversity refers to alliances involving functional activities such as marketing, manufacturing, and distribution to expand market reach, enhance value creation, and further exploit core competencies (Prahalad & Hamel, 1990). As a firm increases the functional diversity of its alliance portfolio, it builds a more balanced portfolio that incorporates both short-term and long terms planning to gain access to supplementary and complementary assets and expand its knowledge base (March, 1991). Exogenous shock may render firms adaptive to a pervasive environment and innovate with their business model. The threats of abrupt changes within the ecosystem often require small firms to manoeuvre in both explorative and exploitative quests to better their competitive positioning (Kauppila, 2015; Volery et al., 2015). Unlike larger firms, SMEs are generally challenged by competitive pressure beyond their resource capability, which paves their way towards the joint effort in pursuing exploitation and exploration activities (Lubatkin et al., 2006). Their nature of limited resources forces them to explore to be as different as possible and exploit to be as effective as possible, which would have a performance impact on them. Observably, maintaining the alliance portfolio diversity extends the range of value-creation activities, increases flexibility, and enhances overall performance. Resource-constrained firms like them are said to be ambidextrous through searching and accessing external knowledge and learning through internal interactions (Tian & Dogbe, 2020). This situation reflects in the alliance functional activities, where many vertical and horizontal interactions occur across the value chain (Yu et al., 2019). Following this reasoning, this study therefore propose:

Proposition 2: Functional diversity has a linear (positive) relationship with SMEs' performance.

The more SMEs maintain a diverse functional exploration and exploitation in their alliance portfolio, the greater the chance they can improve their business performance in the event of exogenous shock.

Governance diversity and SMEs performance

Governance diversity refers to the range of governance types used in an alliance's relationship. Commonly, structure in nonequity or various equity-ownership arrangements have different governance and subsequently has implications on the level of commitment, degree of integration, and learning (Kogut, 1988). A study by Parkhe (1991) has classified two types of governance pattern, namely Type 1 and Type 11, where both provides different logic individually and collectively in explaining the performance of firms. Accordingly, Type 1 offers angles on familiar interfirm differences (interdependencies) that bring reciprocal

strengths and complementary resources (e.g., coopetition, same partners within industries). Though their differences are inevitable due to individual characteristics, they can still facilitate the formulation, development, and collaborative effectiveness relationship.

In contrast, Type 11 brings apparent differences in cross-sectors and intra-cultural alliances, where characteristics result in minimal longevity due to frustrations and unsolved dissimilarities. Both types indicated risk from "differences" where a familiar and focused governance structure plays a crucial role in solving dissimilarities. Given the exogenous shock, firms face numerous challenges forcing them to be adaptive by forming alliances for various purposes beyond their state of familiarity. In an intensified environment, maintaining numerous governance structures can burden the firms as it challenges them to find appropriate balance and matching between all aspects of value creation and value appropriation (Lavie, 2007). Scholar established that "a repeated and more focus governance structure" in their alliance implementation help firms accumulate information and better institutionalize mutual understanding in alliance relationships (Sampson, 2005). Experimenting with various governance structures can result in organizational complexities, increased operational costs and failure to obtain institutional learning opportunities. Following this reason, this study propose:

Proposition 3: Governance diversity has a negative relationship with SMEs' performance. The more SMEs preserve a diverse governance structure in their alliance portfolio, the lower the chance of improving their business performance in exogenous shock.

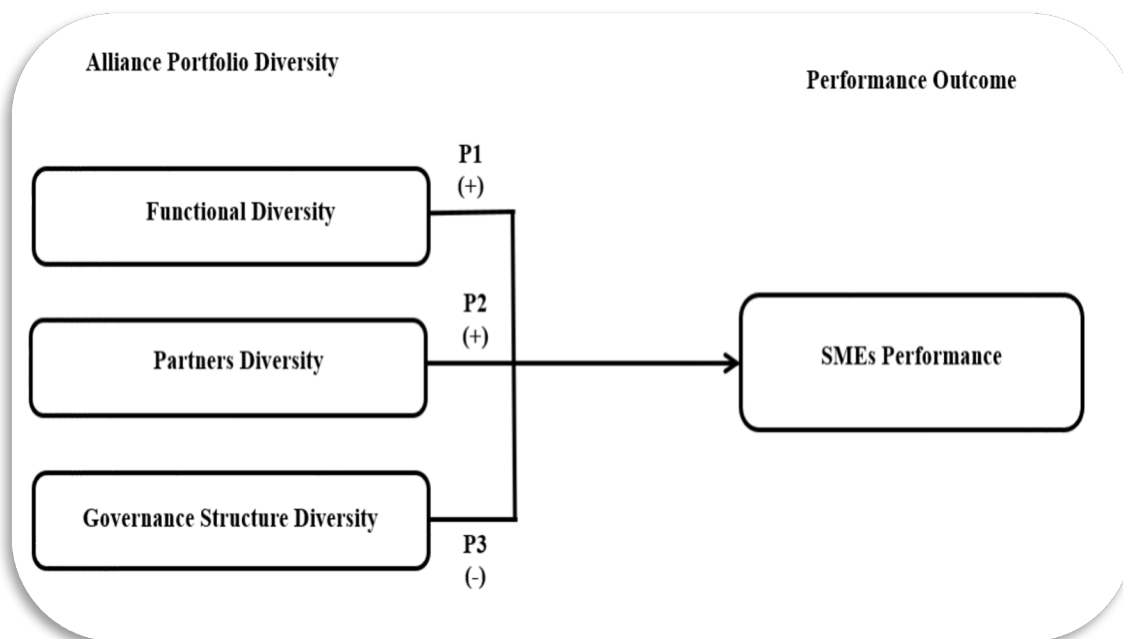


Figure 2. Conceptual Framework
Source: Own elaborations

Conclusions

This study argues on the strength of diversifications in alliance portfolios and how a deeper understanding of such strategy would help combat the adversities in the event of exogenous shock in an emerging market economy. Grounding this work primarily with the RBV and relational view, increased diversity in partners' industry, organisational, and national backgrounds will benefit from broadened resources and learning advantages from a diverse alliance relationship. Essentially, increased functional diversity in exploration and exploitation activities expands the firm's knowledge base, enabling them to absorb the pressure from

"hypercompetition" (Volberda, 1996) that can be hostile and discouraging. While this indication may strengthen the SMEs' competitive positioning, firms must be mindful of increased complexity and coordination costs that potentially occur throughout the life cycle of alliances (Russo & Cesarani, 2017). Demand and dynamism of the "new normal," such as in digitalisation, the industrial revolution, the changing nature of work, demographics changes, and the intense economy, require revision of the current strategies, often with less institutional support. Consequently, a diverse functional diversity and partners offer perspectives on collaborative advantages in facing the aggressive market demand.

On the other hand, governance structure diversity contrasts the above premise is adversely impacted performance. Too diverse governance structure portfolios may not help in the longevity of their relationship. SMEs are associated with an informal approach, such as informal managerial ties, personal networking, bonding, and tacit agreements. Such context-specific revealed distinguish characteristics of "reactive, fire-fighting mentality, resource limitations, informal strategies, and flexible structures" (Terziovski, 2010, p892). Diversities by nature of SMEs structural foundations and characteristics may not be agreeable to high formality and multiple governance structures involving their alliance; hence are believed to be inversely related to performance. More focused and familiar governance is needed to reap the benefit that an alliance can offer without risking the possible consequence of an unsuccessful relationship. A careful deliberation between the effect of Type 1 and Type 11 can justify longevity and focused governance as opposed to governance structure diversity in an alliance relationship.

Practical and Managerial Implications

This study suggests that SME firms manage their alliances with a diverse portfolio perspective to maximise resource and learning benefits to weather the adversities of a disruptive ecosystem. Integrating the view of collaborative advantages as a means to achieve competitive advantages through alliance strategy across value chain activities while minimising managerial costs through a focused set of governance structures should be the way to combat exogenous shock. The complex relationship between organising myriad (e.g., firms' sizes and capacities) structures and firm performance needs to be aligned with the management of governance structure. While partners and functional portfolios are deemed beneficial, governance structure may need more careful consideration by the management. Practising managers would benefit from the highlighted strategic importance in advancing a multidimensional construct firm-level alliance strategy regarding the structure of governance they could employ. However, insights from the study prompted SMEs to avoid having too many unfamiliar forms and under-practised governance structures. It will create unnecessary, unjustifiable complexities which impede the optimum learning and benefit opportunities in alliance relationships.

Limitations and Avenues for Future Research

One of the critical contributions is advancing our multidimensional alliance portfolio diversity construct that extends prior work, which focused solely on partner attributes in a general form. While SMEs are characteristically distinct with unique orientations, strengths and weaknesses, future work could build upon these dimensions of alliance portfolio diversity to test them empirically. Additionally, using the quantitative method would be beneficial in investigating how widely firms use alliances for various learning and value chain activities and gauging their linkage to different governance forms. Additionally, future research could tap into how firms can optimize the learning and resource benefits while limiting the complexity and coordination costs of managing a diverse alliance portfolio, especially for small businesses.

References

- Alegre, J., Lapiedra, R. and Chiva, R. (2006). A measurement scale for product innovation performance. *European Journal of Innovation Management*, 9(4), 333-346. <https://doi.org/10.1002/smj.3095>
- Argyres, N., Bercovitz, J., & Zanarone, G. (2020). The role of relationship scope in sustaining relational contracts in interfirm networks. *Strategic Management Journal*, 41(2), 222–245. <https://doi.org/10.1002/smj.3095>
- Barney, J. (1991). Special Theory Forum the Resource-Based Model of the Firm: Origins, Implications, and Prospects. *Journal of Management*. <https://doi.org/10.1177/014920639101700107>
- Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*. [https://doi.org/10.1016/S0149-2063\(01\)00115-5](https://doi.org/10.1016/S0149-2063(01)00115-5)
- Dickson, P. H., & Weaver, K. M. (2011). Institutional Readiness and Small to Medium-Sized Enterprise Alliance Formation. *Journal of Small Business Management*, 49(1), 126–148. <https://doi.org/10.1111/j.1540-627X.2010.00318.x>
- Christoffersen, J., Plenborg, T. and Robson, M.J. (2014), Measures of strategic alliance performance, classified and assessed, *International Business Review*, Vol. 23 No. 3, pp. 479-489.
- Cohen WM, Levinthal DA. (1990). Absorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly* 35(1): 128–152.
- Contractor, F. J., & Reuer, J. J. (2019). *Frontiers of Alliance Research : Negotiating, Structuring and Governing Partnerships*. In Cambridge University Press.
- Das, T. K., & Kumar, R. (2010). Interpartner sensemaking in strategic alliances: Managing cultural differences and internal tensions. *Management Decision*, 48(1), 17–36. <https://doi.org/10.1108/00251741011014436>
- Dussauge, P., Garrette, B., & Mitchell, W. (2000). Learning from competing partners: Outcomes and durations of scale and link alliances in Europe, North America and Asia. *Strategic Management Journal*, 21(2), 99–126. [https://doi.org/10.1002/\(SICI\)1097-0266\(200002\)21:2<99::AID-SMJ80>3.0.CO;2-G](https://doi.org/10.1002/(SICI)1097-0266(200002)21:2<99::AID-SMJ80>3.0.CO;2-G)
- Dyer, J. H., & Singh, H. (1998). The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage. *The Academy of Management Review*, 23(4), 660. <https://doi.org/10.2307/259056>
- Dyer, J. H., Singh, H., & Hesterly, W. S. (2018). The relational view revisited: A dynamic perspective on value creation and value capture. *Strategic Management Journal*, 39(12), 3140–3162. <https://doi.org/10.1002/smj.2785>
- Dyer, J. H., Singh, H., & Hesterly, W. S. (2018). The relational view revisited: A dynamic perspective on value creation and value capture. *Strategic Management Journal*, 39(12), 3140–3162. <https://doi.org/10.1002/smj.2785>
- Fiksel, J., Polyviou, M., Croxton, K.L. and Pettit, T.J. (2015). From risk to resilience: Learning to deal with disruption. *MITSloan Management Review*, 56, pp. 79–86.
- Ghisi, F. A., & Martinelli, D. P. (2006). Systemic view of interorganisational relationships: An analysis of business networks. *Systemic Practice and Action Research*, 19(5), 461–473. <https://doi.org/10.1007/s11213-006-9036-2>
- Girod, S.J.G. and Whittington, R. (2017), Reconfiguration, restructuring and firm performance: dynamic capabilities and environmental dynamism, *Strategic Management Journal*, Vol. 38, No. 5, pp. 1121-1133.
- Goerzen A, Beamish PW. 2005. The effect of alliance network diversity on multinational enterprise performance. *Strategic Management Journal* 26(4): 333–354.

- Guénette, J. D., Kose, M. A., & Sugawara, N. (2022). Is a Global Recession Imminent? EFI Policy Note 4 (Issue September).
- Gulati, R. (1998). Alliances and networks. *Strategic Management Journal*, 19, 293–317. [https://doi.org/10.1002/\(SICI\)1097-0266\(199804\)19:4<293::AID-SMJ982>3.0.CO;2-M](https://doi.org/10.1002/(SICI)1097-0266(199804)19:4<293::AID-SMJ982>3.0.CO;2-M)
- Harrigan, K. R. (2018). Strategic alliances as agents of competitive change. In *Collaborative strategy: Critical issues for alliances and networks* (pp. 13–19). Edward Elgar Publishing Ltd. <https://doi.org/10.4337/9781783479580>
- Harrison JS, Hitt MA, Hoskisson RE, Ireland RD. (2001). Resource complementary in business combinations: extending the logic to organizational alliances. *Journal of Management* 27(6): 679–690.
- Haveman Heather A (1992), Between a rock and a hard place: Organizational change and performance under conditions of fundamental environmental transformation. *Administrative Science Quarterly* 37(1): 48–75.
- Jiang, R. J., Tao, Q. T., & Santoro, M. D. (2010). Alliance portfolio diversity and firm performance. *Strategic Management Journal*, 31(10), 1136–1144. <https://doi.org/10.1002/smj.869>
- Kanter, R. (1994). Collaborative advantage: The art of alliances. *Harvard Business Review*, 72(4), 96–108.
- Kauppila, O. P. (2015). Alliance Management Capability and Firm Performance: Using Resource-based Theory to Look Inside the Process Black Box. *Long Range Planning*, 48(3), 151–167. <https://doi.org/10.1016/j.lrp.2013.08.006>
- Khanna, T., Gulati, R., & Nohria, N. (1998). The Dynamics of Learning Alliances: Competition, Cooperation, And Relative Scope. *Strategic Management Journal*, 19(3), 193–210.
- Kilduff, G.J., Galinsky, A.D., Gallo, E. and Reade, J.J. (2016), Whatever it takes to win: rivalry increases unethical behavior, *Academy of Management Journal*, Vol. 59 No. 5, pp. 1508-1534.
- Kogut B. 1988. Joint ventures: theoretical and empirical perspectives. *Strategic Management Journal* 9(4): 319–332.
- Kumar, R. (2014). Managing ambiguity in strategic alliances. *California Management Review*, 56(4), 82–102. <https://doi.org/10.1525/cmr.2014.56.4.82>
- Lavie, D. (2006). The Competitive Advantage of Interconnected Firm: An Extension of The Resource-Based View. *Academy of Management Review*, 31(3), 638–658. <https://doi.org/10.1145/2611286.2611321>
- Lavie, D. (2007). Alliance portfolios and firm performance: A study of value creation and appropriation in the U.S. software industry. *Strategic Management Journal*, 28(12), 1187–1212. <https://doi.org/10.1002/smj.637>
- Lichtenthaler, U. (2016). Alliance portfolio capability: A conceptual framework for the role of exploration or exploitation alliances. *Journal of Strategy and Management*, 9(3), 281–301. <https://doi.org/10.1108/JSMA-05-2015-0035>
- Lubatkin, M. H., Simsek, Z., Ling, Y., & Veiga, J. F. (2006). Ambidexterity and performance in small-to medium-sized firms: The pivotal role of top management team behavioural integration. *Journal of Management*, 32(5), 646–672. <https://doi.org/10.1177/0149206306290712>
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2(1), 71–87. <https://doi.org/10.3280/so2008-002006>
- Neely, A., Mills, J., Platts, K., Richards, H., Gregory, M., Bourne, M., and Kennerley, M. (2000). Performance measurement system design: developing and testing a process-

- based approach. *International Journal of Operations & Production Management*, 20(10), 1119–1145. <https://doi.org/10.1108/01443570010343708>
- Parkhe, A. (1991). Interfirm Diversity, Organisational Learning, and Longevity in Global Strategic Alliances. *Journal of International Business Studies*, 22(4), 579–601.
- Parmigiani, A., & Rivera-Santos, M. (2011). Clearing a path through the forest: A meta-review of interorganizational relationships. *Journal of Management*, 37(4), 1108–1136. <https://doi.org/10.1177/0149206311407507>
- Prabhudesai, R., Pangarkar, N., & Prasad, C. V. V. S. N. V. (2022). Resource type and SME alliance formation: the contingent role of perceived environmental uncertainty. *Journal of Small Business and Enterprise Development*, <https://doi.org/10.1108/jsbed-02-2021-0046>
- Prahalad, C. K., & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68(3): 79–87.
- Priyono, A., Dewi, E. I., & Lim, S. A. H. (2019). Alliances as Dynamic Capability to Support Organizational Transformation: Empirical Findings from a State-Owned Enterprise. *Foundations of Management*, 11(1), 93–102. <https://doi.org/10.2478/fman-2019-0008>
- Russo, M., & Cesarani, M. (2017). Strategic Alliance Success Factors: A Literature Review on Alliance Lifecycle. *International Journal of Business Administration*, 8(3), 1. <https://doi.org/10.5430/ijba.v8n3p1>
- Sampson RC. (2005). Experience effects and collaborative returns in R&D alliances. *Strategic Management Journal* 26(11): 1009–1031.
- Santoro MD, Chakrabarti A. (2002). Firm size and technology centrality in industry-university interactions. *Research Policy* 31(7): 1163–1180.
- Short, J. C., McKelvie, A., Ketchen, D. J., & Chandler, G. N. (2009). Firm and industry effects on firm performance: A generalization and extension for new ventures. *Strategic Entrepreneurship Journal*, 3(1), 47–65.
- Singh Kulwant, Yip George S (2000), Strategic lessons from the Asian crisis. *Long Range Planning* 33(5): 706–729.
- Terziovski, M. (2010). Innovation Practice and Its Performance Implications in Small and Medium Enterprise (SMEs) in The Manufacturing Sector : A Resource-Based View. *Strategic Management Journal*, 31, 892–902. <https://doi.org/10.1002/smj>
- Terziovski, M. (2010). Innovation Practice and Its Performance Implications in Small and Medium Enterprise (SMEs) in The Manufacturing Sector : A Resource-Based View. *Strategic Management Journal*, 31, 892–902. <https://doi.org/10.1002/smj>
- Thomason, S. J., Simendinger, E., & Kiernan, D. (2013). Journal of Small Business & Entrepreneurship Several determinants of successful coopetition in small business. *Journal of Small Business & Entrepreneurship*.
- Tian, H., Dogbe, C. S. K., Pomegbe, W. W. K., Sarsah, S. A., & Otoo, C. O. A. (2020). Organizational learning ambidexterity and openness, as determinants of SMEs' innovation performance. *European Journal of Innovation Management*, 24.
- Volberda, H. W. (1996). Toward the Flexible Form: How to Remain Vital in Hypercompetitive Environments. *Organization Science*, 7(4), 359–374. <https://doi.org/10.1287/orsc.7.4.359>
- Volberda, H. W. (1996). Toward the Flexible Form: How to Remain Vital in Hypercompetitive Environments. *Organization Science*, 7(4), 359–374. <https://doi.org/10.1287/orsc.7.4.359>
- Volery, T., Mueller, S., & von Siemens, B. (2015). Entrepreneur ambidexterity: A study of entrepreneur behaviours and competencies in growth-oriented small and medium-sized enterprises. *International Small Business Journal: Researching Entrepreneurship*, 33(2), 109–129. <https://doi.org/10.1177/0266242613484777>

- Vorhies, D.W. and Morgan, N.A. (2005), Benchmarking marketing capabilities for sustainable competitive advantage, *Journal of Marketing*, Vol. 69No. 1, pp. 80-94.
- Wang, Y., & Rajagopalan, N. (2015). Alliance Capabilities: Review and Research Agenda. *Journal of Management*, 41(1), 236–260. <https://doi.org/10.1177/0149206314557157>
- Wasiuzzaman, S. (2019). Resource sharing in interfirm alliances between SMEs and large firms and SME access to finance: A study of Malaysian SMEs. *Management Research Review*, 42(12), 1375–1399. <https://doi.org/10.1108/MRR-10-2018-0369>
- Wassmer, U. (2010). Alliance portfolios: A review and research Agenda. In *Journal of Management* (Vol. 36, Issue 1). <https://doi.org/10.1177/0149206308328484>
- Welsh, A. J., & White, F. J. (1981). A Small Business is not a Little Big Business. *Harvard Business Review*, 59(4), 18–32.
- Welsh, A. J., & White, F. J. (1981). A Small Business is not a Little Big Business. *Harvard Business Review*, 59(4), 18–32.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180. <https://doi.org/10.1002/smj.4250050207>
- Wilhelm, M., & Sydow, J. (2018). Managing Coopetition in Supplier Networks – A Paradox Perspective. *Journal of Supply Chain Management*, 54(3). <https://doi.org/10.1111/jscm.12167>
- Yu, P. L. (2019). Interfirm coopetition, trust, and opportunism: a mediated moderation model. *Review of Managerial Science*, 13(5), 1069–1092. <https://doi.org/10.1007/s11846-018-0279-y>
- Zhu, Y., Lynette Wang, V., Wang, Y. J., & Nastos, J. (2020). Business-to-business referral as digital coopetition strategy: Insights from an industry-wise digital business network. *European Journal of Marketing*. <https://doi.org/10.1108/EJM-01-2019-0011>

Perspective on Mental Health Issue Among Twitter Users by Using Sentiment Analysis

Eliza Mohd Rasid, Nur Aalia Mohd Nasir, Ooi Boon Hin, Syarifah Nur Nadhirah Syed Jaafar, & Nor Hasliza Md. Saad

School of Management, Universiti Sains Malaysia, Malaysia

Introduction

What is Sentiment Analysis

Sentiment Analysis is referred to as opinion mining, is an approach to natural language processing (NLP) that identifies the emotional tone behind a body of text. Sentiment analysis studies the subjective information in an expression, that is, the opinions, emotions, or attitudes towards a topic, person, or entity. Expressions can be classified as positive, negative, or neutral. (Gupta, 2018)

Why Is It Worth Doing?

51% of social media users have ‘called out’ a company on social media, which explains why brands are changing the way they engage with their audiences. They need to respond quickly and effectively to turn bad situations into positive experiences. (Mohsin, 2021)

Sentiment Analysis is a popular way for organizations to determine and categories opinions about a product, service, or idea. With sentiment analysis tools, restaurants, retail stores, internet providers, and airlines, which are often the most called-out industries on social media. They can quickly detect dissatisfied customers, categories issues by urgency, and priorities responses. (Pyoneer, 2020).

Problem Statement

Mental health issues are already on the rise and have been significantly impacted especially during the COVID-19 pandemic. The COVID-19 crisis has heightened the risk factors generally associated with poor mental health such as depression. In this research, we are trying to understand the perception of people about depression as a part of mental health by using RapidMiner as a tool for data extraction from twitter.

Research Objectives

This study is aimed to investigate the utility of sentiment analysis using RapidMiner in data extraction from Twitter to analyses the mental health issue specifically in depression among users and to discuss about. Q1: To define the perception that the users are positive, negative, or neutral about depression. Q2: To define is it the positive perception more than negative among the users.

Literature Review

The usage of the Internet is increasing rapidly from time to time nowadays and it can be said that it will keep increasing in the future. The usage of the Internet especially in Social Media Platforms, there is some few reasons such as to communicate with each other, to get latest news by updated by the official sites or others, to share or receive information, to increase the business profit and even to express their perspective in something either it is about product or services that they have experience with currently or before.

Mental health includes our emotional, psychological, and social well-being. It affects how we think, feel, and act. It also helps determine how we handle stress, relate to others, and make choices. Mental health is important at every stage of life, from childhood and adolescence

through adulthood. Over the course of your life, if you experience mental health problems, your thinking, mood, and behavior could be affected. Many factors contribute to mental health problems, including biological factors, life experiences, family history of mental health problems, etc. (U.S. Department of Health & Human Services, 2022)

There are actually many different causes of depression and that it is not always preventable. Factors that can contribute to depression include genetics, brain chemistry, certain medical conditions, substance use, stress, and poor nutrition. Depression does not have a single cause. There are many factors that play a role in increasing the risk that a person will develop the condition. Women experience depression at higher rates than men (10.5% of women vs. 6.2% of men),² which experts suggest may be due to hormonal factors. (U.S. Department of Health & Human Services, 2022)

Many mental health conditions can be effectively treated at relatively low cost, yet the gap between people needing care and those with access to care remains substantial. Effective treatment coverage remains extremely low. Depression is a common and serious medical illness that negatively affects how you feel, the way you think and how you act. Depression causes feelings of sadness and/or a loss of interest in activities you once enjoyed. It can lead to a variety of emotional and physical problems and can decrease your ability to function at work and at home. (Debjit, 2012)

This research will be using Lexicon-Based Approach, with RapidMiner as a tool to mark the words from tweets which also include hashtag “#”, to determine scoring for positive, negative, or neutral from the tweets that are shared by social media users. The word hashtag is really important for Twitter. On Twitter, adding a “#” to the beginning of an unbroken word or phrase creates a hashtag. When you use a hashtag in a Tweet, it becomes linked to all of the other Tweets that include it. Including a hashtag gives your Tweet context and allows people to easily follow topics that they’re interested in. (Dorney, 2021)

Research Methodology

Data Source and Data Set

In this project of sentiment analysis, all the data was extracted on 11th June 2022. RapidMiner Studio was using as a main tool in data extraction data from twitter and total raw data are 2000. Before data extraction, we had chosen depression as our keyword due to the heightened mental issue in our society.

Research Design

In conducted this sentiment analysis, the process flow is available in Figure 1.

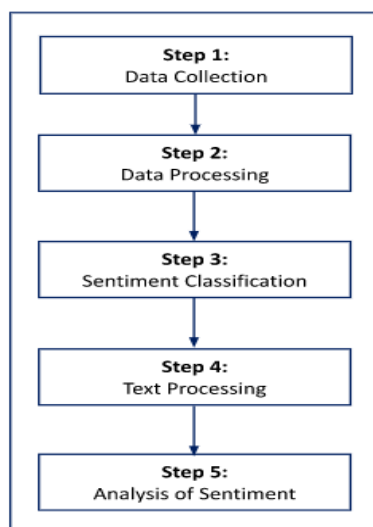


Figure 1. The process of Sentiment Analysis

Step 1: Data Collection

In this process, as mentioned before, 2,000 tweets were selected by using keyword #depression and all text was setup in English. The process of data extracted will show as in Figure 1 while in Figure 2 is the list of dataset from twitter after running the process of extraction using RapidMiner Studio.

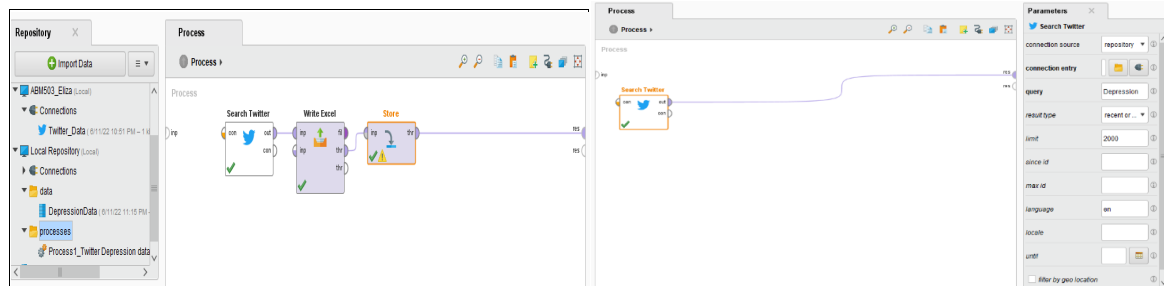
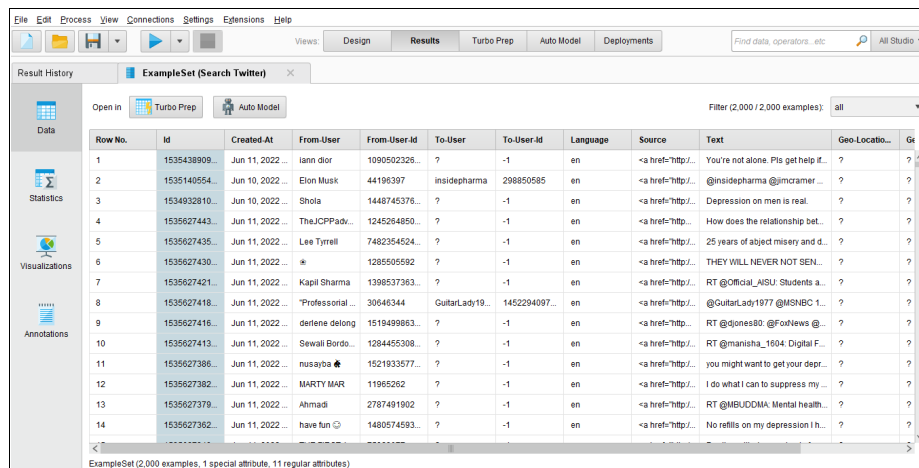


Figure 1. Process of Data Collection from Twitter



Row No.	Id	Created At	From User	From User Id	To User	To User Id	Language	Source	Text	Geo-Location
1	1535438909...	Jun 11, 2022	Iann dior	1090502326...	?	-1	en	<a href="http/...	You're not alone. Pts get help it...	?
2	1535140554...	Jun 10, 2022	Elon Musk	44196397	insidepharma	298850585	en	<a href="http/...	@insidepharma @jmcramer ...	?
3	1534932810...	Jun 10, 2022	Shola	1448745376...	?	-1	en	<a href="http/...	Depression on men is real.	?
4	1535627443...	Jun 11, 2022	TheJCPPadv...	1245264850...	?	-1	en	<a href="http/...	How does the relationship bet...	?
5	1535627435...	Jun 11, 2022	Lee Tyrrell	7482354524...	?	-1	en	<a href="http/...	25 years of abject misery and d...	?
6	1535627430...	Jun 11, 2022	*	1285505592...	?	-1	en	<a href="http/...	THEY WILL NEVER NOT SEN...	?
7	1535627421...	Jun 11, 2022	Kapil Sharma	139657363...	?	-1	en	<a href="http/...	RT @Official_ASU: Students a...	?
8	1535627418...	Jun 11, 2022	"Professional ...	30646344	GuitarLady19...	1452294097...	en	<a href="http/...	@GuitarLady1977 @MSNBC 1...	?
9	1535627416...	Jun 11, 2022	derlene delong	1519499863...	?	-1	en	<a href="http/...	RT @djones80: @FoxNews @...	?
10	1535627413...	Jun 11, 2022	Sewall Bordo...	1284455308...	?	-1	en	<a href="http/...	RT @manisha_1904: Digital F...	?
11	1535627386...	Jun 11, 2022	nusayba	1521933577...	?	-1	en	<a href="http/...	you might want to get your depr...	?
12	1535627382...	Jun 11, 2022	MARTY MAR	11965262	?	-1	en	<a href="http/...	I do what I can to suppress my ...	?
13	1535627379...	Jun 11, 2022	Ahmadi	2787491902...	?	-1	en	<a href="http/...	RT @MBUDDOMA: Mental health...	?
14	1535627362...	Jun 11, 2022	have fun ☺	1480574593...	?	-1	en	<a href="http/...	No refills on my depression I h...	?

Figure 2. List of Raw Tweets

Step 2: Data Processing

Eliminate the unwanted column

Eliminate the unwanted column by select attributes in the process and defined in parameters as shown in Figure 3.

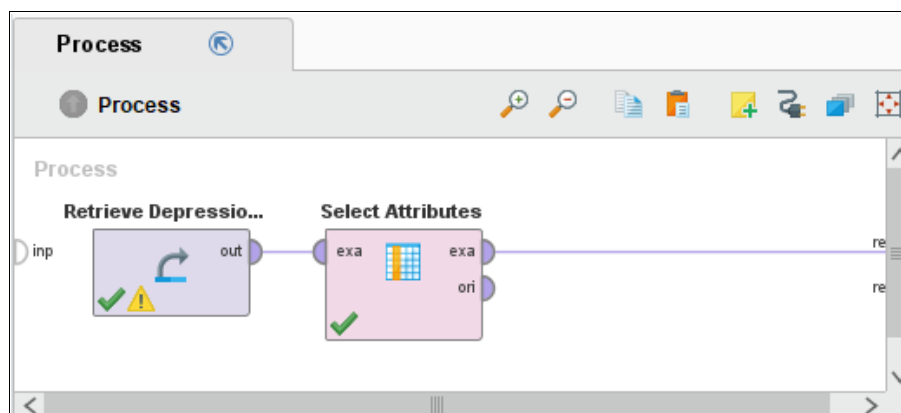


Figure 3. Process of Selection of Attributes

Next, a total number of column imported from Twitter are eight (8) and for this Sentiment Analysis purpose, in selected attributes box choose only four (4) meaningful attributes such as created-at, From-User, Id and Text as shown in Figure 4 and click apply to execute the process.

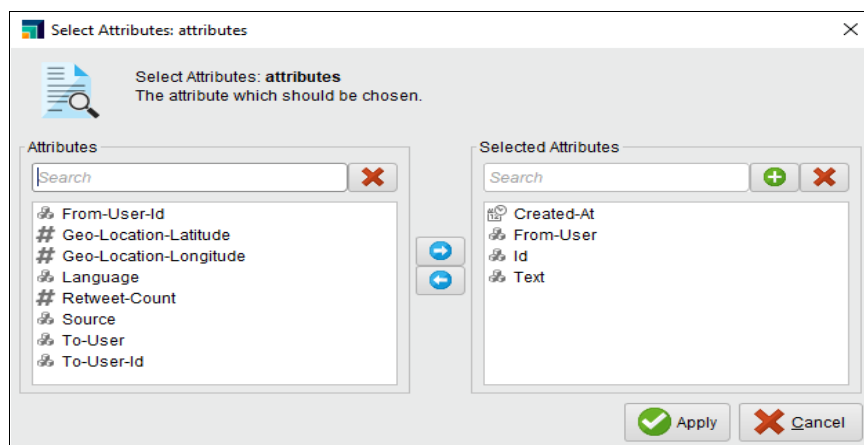


Figure 4. Process of Selection of Attributes

After running the process in Figure 3, as a result, only four columns or attributes remain as in Figure 5.

ExampleSet (Select Attributes)				
Open in: Turbo Prep Auto Model				
Row No.	Id	Created-At	From-User	Text
1	1535438909...	Jun 11, 2022 ...	iann dior	You're not alo...
2	1535140554...	Jun 10, 2022 ...	Elon Musk	@insidephar...
3	1534932810...	Jun 10, 2022 ...	Shola	Depression o...
4	1535641667...	Jun 11, 2022 ...	Mani RCF	RT @upasan...
5	1535641657...	Jun 11, 2022 ...	Sean Chiploc...	Sonic: What d...
6	1535641631...	Jun 11, 2022 ...	@joseph717	The Pretty Re...
7	1535641626...	Jun 11, 2022 ...	W&G TOUR 2...	@chi_yenum ...
8	1535641625...	Jun 11, 2022 ...	FancyEX, ma...	RT @PlaEnte...
9	1535641624...	Jun 11, 2022 ...	One Jelly...	RT @urlocalf...
10	1535641623...	Jun 11, 2022 ...	Maggie Lucas	Instead of pa...
11	1535641619...	Jun 11, 2022 ...	Peter Spiliakos	Yeah, the stor...
12	1535641616...	Jun 11, 2022 ...	janasena pra...	RT @upasan...
13	1535641613...	Jun 11, 2022 ...	T Grant Belga...	@mattyglesia...
14	1535641592...	Jun 11, 2022 ...	Omenyi Of Eb...	RT @firstdoct...
15	1535641586...	Jun 11, 2022 ...	□□□□□□ □□...	RT @upasan...

ExampleSet (2,000 examples, 1 special attribute, 3 regular attributes)

Figure 5. New List of Raw Tweets

Eliminate the unwanted words and characters

Subsequently, select subprocess in operators to eliminate or remove the unwanted or useful words as exhibit in Figure 6.

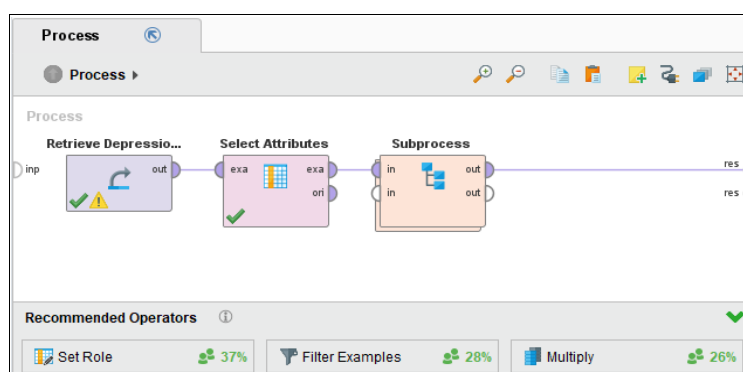


Figure 6. Process to Remove Words

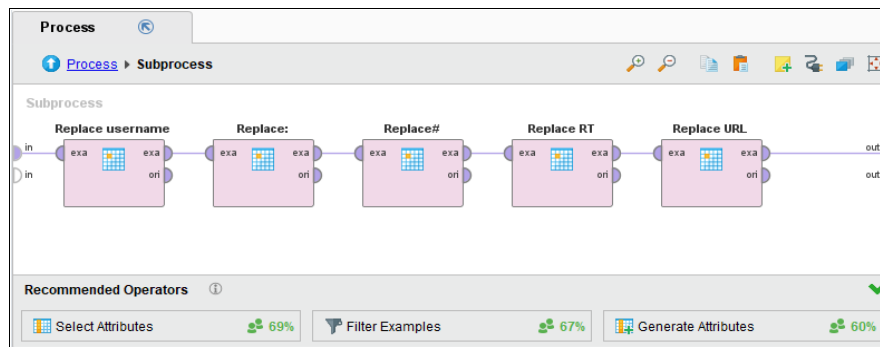


Figure 7. Subprocess of Eliminating the Unwanted Word

As illustrated in Figure 6, in the subprocess box, here we had to determine which unnecessary column need to be removed by replaced each parameter accordingly and filled in the information as below.

Replace username= @(\w+)
 Replace colon=
 Replace hashtag= #
 Replace retweets= RT
 Replace URL= (https|http)(.*)

After this process finish, followed by process of trimming to trim the empty space in the text or every tweets. This subprocess exhibited in Figure 7.

Remove the Duplicates

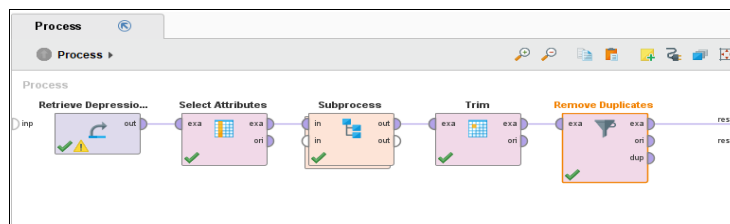


Figure 8. Process of Removing the Duplicates

At the first of extraction, the original data from Twitter contains 2,000 tweets and after a process of removing duplicates was executed, total of 800 duplicates tweets was removed. Only 1,200 tweets as in Figure 9, remain to be analyses soon. All the process to remove the duplicates was illustrated in Figure 8.

Row No.	Id	Text ↑	Created-At	From-User
781	1534924374...	"...examined 474 couples reporting mutual violence drawn from the Na...	Jun 9, 2022 1...	tessa✓
995	1534921317...	"Data from more than a dozen studies...show that access to gender-aff...	Jun 9, 2022 1...	pawgchamp
804	1534924031...	"Even if we believed kids suffered"?! Try asking parents of kids who co...	Jun 9, 2022 1...	Nikki Gallier
1138	1534919556...	"Family sues Meta over daughter's depression, eating disorder	Jun 9, 2022 1...	LFT411
1087	1534920143...	"Happiness is a choice."	Jun 9, 2022 1...	wortholomew
1070	1534920410...	"I was in tears, just picturing where he was ... That parkrun script really...	Jun 9, 2022 1...	Karina Hamilt...
439	1534928369...	"It has caused mental health issues, depression & anxiety...this charg...	Jun 10, 2022 ...	HMRC-debun...
7	1535641626...	"Keep up appearance to cover shame" What shame exactly? Who nev...	Jun 11, 2022 ...	W&G TOUR 2...
25	1535641475...	"Psilocybin will make us more intelligent, and better citizens." Sat dow...	Jun 11, 2022 ...	BlairV
166	1534931633...	"Something must surely be going wrong if our treatments are so good ...	Jun 10, 2022 ...	Tom Swiss #...
463	1534928274...	"The financial crisis in 2008 plunged the world into deflation, or falling ...	Jun 9, 2022 1...	Steve Stine
791	1534924253...	"The most well-known disadvantage of social media is that it can lead ...	Jun 9, 2022 1...	Sue Scheff
127	1534932100...	"They always call depression the 'Blues,' but I would have been happy ...	Jun 10, 2022 ...	□□□□□ •□□...
418	1534928558...	"Tips for Dealing with Depression"	Jun 10, 2022 ...	Al Levin, M.Ed...
289	1534930136...	"What we're trying to say is that compared to the Great Depression..."	Jun 10, 2022 ...	Sharon McSh...

ExampleSet (1,200 examples, 1 special attribute, 3 regular attributes)

Figure 9. The Listing of Cleaning Tweets

Checking for Missing Value

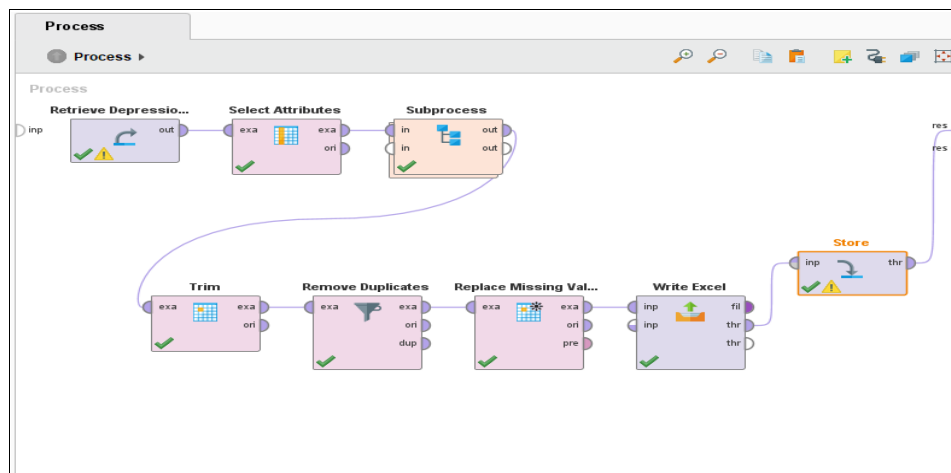


Figure 10. Process of Replace Missing Values

Exhibited in Figure 10, in the process, dragged a “replace missing values” from operator in order to check whether there is a missing value in data set. Execute the current process with write the excel and store the by selection of repository and the result shown as in the Figure 11. As a result, there is no missing value by looking at zero (0) in the missing column.

Result History

ExampleSet (Replace Missing Values)

Data

Statistics

Visualizations

Annotations

Name	Type	Missing	Statistics		
Id	Nominal	0	Least 1535641616324886528...	Most 1534918668127088642...	Values 1534918668127088642 (1), 1534918684367589382 (1), ...[1]
Text	Nominal	0	Least □ Paren [...] ♀In... (1)	Most "...exam [...] men." (1)	Values "...exam [...] r women." (1), "Data fr [...] alth out... (1), ...[1198
Created-At	Date time	0	Earliest date Jun 9, 2022 11:21 PM	Latest date Jun 11, 2022 11:14 PM	Duration 1d 23h 52m 57s
From-User	Nominal	0	Least □ Pa i l g e □ (0)	Most enviedecrever (6)	Values enviedecrever (6), Ashie ❤️❤️ Yaguuuu (4), ...[1865 more]

Figure 11. Result of Missing Values

Sentiment Classification

VADER or Valance Aware Dictionary for Sentiment Reasoning is a lexicon and rule-based based sentiment analysis tools that is specifically attuned to sentiment expressed in social media. In this project, VADER will be used as a model in sentiment extraction.

Name	Type	Missing	Statistics
Id	Nominal	0	Least: 1535641616324886528... Most: 1534918668127088642... Values: 1534918668127088642 (1), 1534918664367589382 (1), ... [16]
Text	Nominal	0	Least: ☹️ Paren [] ☹️ In ... (1) Most: "... exam [] men" (1) Values: "... exam [] r women." (1), "Data fr [] alth out... (1), ... [1198 r
Created-At	Date-time	0	Earliest date: Jun 9, 2022 11:21 PM Latest date: Jun 11, 2022 11:14 PM Duration: 1d 23h 52m 57s
From-User	Nominal	0	Least: ☹️ P a i g e ☹️ (0) Most: envidecreaver (6) Values: envidecreaver (6), Ashie ☹️ Yaguuuu (4), ... [1865 more]

Figure 12. Results after Data Processing

As in Figure 12, as we can see, type of the data is nominal and a condition to perform a Sentiment Analysis, all the data type must be in text. If this condition cannot be fulfilled, this data type will be changed to a text by selecting VADER as a model in parameters for extract the sentiment. This process shown in Figure 13.

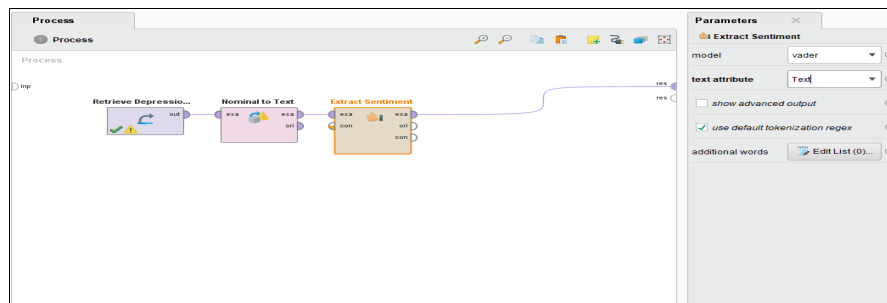


Figure 13. Extract Sentiment

Row No.	Id	Score	Text	Created-At	From-User
1	1535438909...	0.385	You're not alo...	Jun 11, 2022 ...	iann dior
2	1535140554...	-0.872	Psychedelics...	Jun 10, 2022 ...	Elon Musk
3	1534932810...	-2.513	Depression o...	Jun 10, 2022 ...	Shola
4	1535641667...	0.821	My bestie my ...	Jun 11, 2022 ...	Mani RCF
5	1535641657...	-0.692	Sonic What di...	Jun 11, 2022 ...	Sean Chiploc...
6	1535641631...	-0.974	The Pretty Re...	Jun 11, 2022 ...	@joseph717
7	1535641626...	-1.795	"Keep up app...	Jun 11, 2022 ...	W&G TOUR 2...
8	1535641625...	-0.692	This clip was ...	Jun 11, 2022 ...	FancyEX, ma...
9	1535641624...	1.359	AAA this. The b...	Jun 11, 2022 ...	☹️☹️☹️ Jelly...
10	1535641623...	0.718	Instead of pa...	Jun 11, 2022 ...	Maggie Lucas
11	1535641619...	0.410	Yeah, the stor...	Jun 11, 2022 ...	Peter Spiliakos
12	1535641613...	-2.256	As another d...	Jun 11, 2022 ...	T Grant Belga...
13	1535641592...	-1.538	Female genit...	Jun 11, 2022 ...	Omenyi OfEb...
14	1535641584...	-0.436	Shocking ne...	Jun 11, 2022 ...	Information
15	1535641584...	-2.795	Lockdowns I...	Jun 11, 2022 ...	dnodland

Figure 14. Score for each Data Set after using VADER as Model

Run the process as in Figure 13 and the result will be displayed as in Figure 14. As seen in column score, if the score closer to positive 1 (+1), it is mean the higher the positivity of the text. To prove this statement, let's run the next process as in figure 15 with added generate attributes to complete the process.

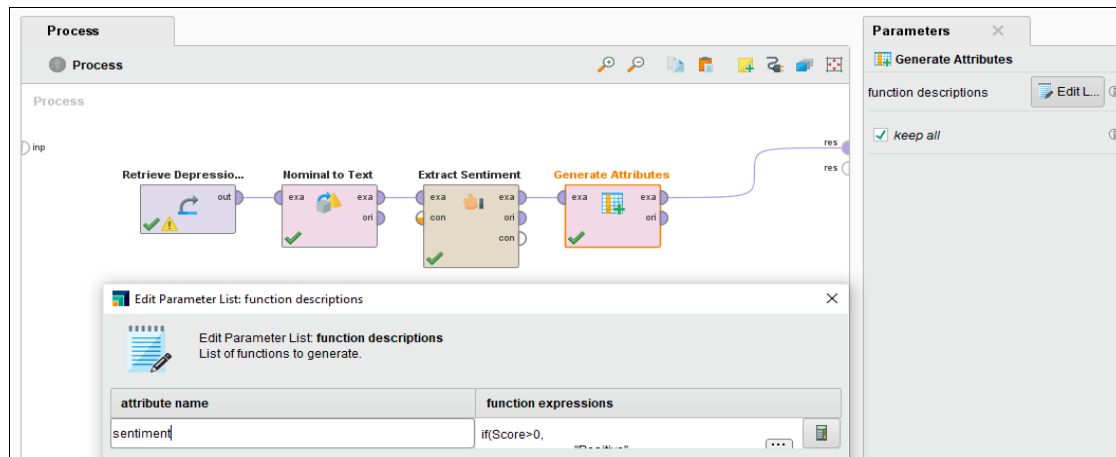


Figure 15. Process to Extract Sentiment

To examine the sentiment either the score is negative, neutral or positive, click generate attributes by write the function expression as below.

```

Expression
1 if(Score>0,
2   "Positive",
3   if(Score==0,
4     "Neutral",
5     "Negative"
6   )
7 )

```

An Explanation from the expression is, if the score more than zero (0), the sentiment will be positive, if the score equal to zero (0), the sentiment will be classified as neutral and if other than, it will classify as negative sentiment.

Row No.	Id	Score	Scoring Stri...	Negativity	Positivity	Uncovered T...	Total Tokens	Text	Created-At	From-User	sentiment
1	1535438909...	0.385	alone (-0.26) ...	0.949	1.333	21	26	You're not alo...	Jun 11, 2022 ...	Iann dior	Positive
2	1535140554...	-0.872	depression (-...	0.872	0	22	24	Psychedelics...	Jun 10, 2022 ...	Elon Musk	Negative
3	1534932810...	-2.513	depression (-...	3.513	1	47	55	Depression o...	Jun 10, 2022 ...	Shola	Negative
4	1535641667...	0.821	dearest (0.67...	1.769	2.590	25	32	My bestie my ...	Jun 11, 2022 ...	Mani RCF	Positive
5	1535641657...	-0.692	depression (-...	0.692	0	17	18	Sonic What di...	Jun 11, 2022 ...	Sean Chiploc...	Negative
6	1535641631...	-0.974	pretty (0.56) r...	1.538	0.564	9	13	The Pretty Re...	Jun 11, 2022 ...	@joseph717	Negative
7	1535641626...	-1.795	shame (-0.54...	2.231	0.436	52	58	*Keep up app...	Jun 11, 2022 ...	W&G TOUR 2...	Negative
8	1535641625...	-0.692	depression (-...	0.692	0	23	24	This clip was ...	Jun 11, 2022 ...	FancyEX, ma...	Negative
9	1535641624...	1.359	solution (0.33...	0	1.359	12	15	^^^ this. The b...	Jun 11, 2022 ...	Qee CJelly...	Positive
10	1535641623...	0.718	promoting (0...	0.872	1.590	36	42	Instead of pa...	Jun 11, 2022 ...	Maggie Lucas	Positive
11	1535641619...	0.410	yeah (0.31) ...	1.385	1.795	47	53	Yeah, the stor...	Jun 11, 2022 ...	Peter Spiliakos	Positive
12	1535641613...	-2.256	unemployme...	2.256	0	27	31	As another d...	Jun 11, 2022 ...	T Grant Belga...	Negative
13	1535641592...	-1.538	pain (-0.59) ...	1.538	0	25	28	Female genit...	Jun 11, 2022 ...	Omenji Of Eb...	Negative
14	1535641584...	-0.436	shocking (-0...	0.436	0	8	9	Shocking ne...	Jun 11, 2022 ...	Information	Negative
15	1535641584...	-2.795	isolation (-0.4...	3.410	0.615	44	52	Lockdowns I...	Jun 11, 2022 ...	dnodiand	Negative

ExampleSet (1,200 examples, 7 special attributes, 4 regular attributes)

Figure 16. The Output of Sentiment Analysis

The output or result in Figure 16, shown all the data or each row has been categorized by sentiment either positive, negative, or neutral based on the score.

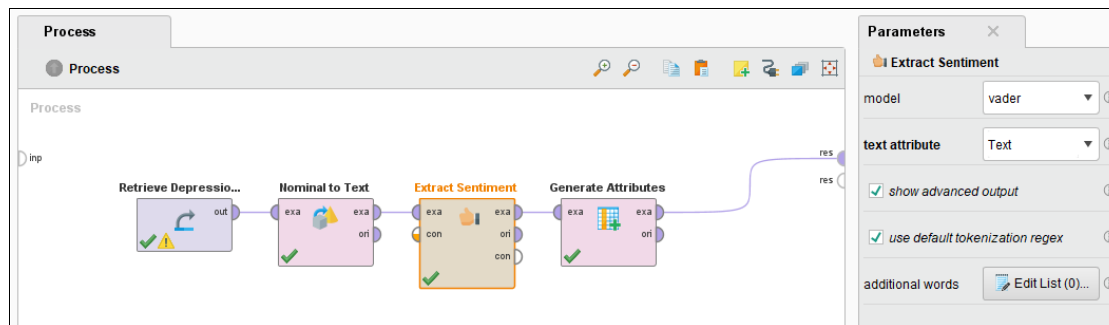


Figure 17. Complete Process for Sentiment Classification

Briefly, Figure 12 to Figure 17 had shown the complete process of Sentiment Classification to get the analysis of sentiment for keyword of depression in Twitter.

Text Processing

In this part of text processing or tokenize, the aimed is to generate word list to determine either a text leave a positive, negative, or neutral impression. Therefore, to achieve that, tokenization will be used in this process to find out occurrence of each word in a document and the scoring of each word. The text processing will support several text formats including plain text, HTML or PDF as well as other data sources.

Let's start the process as in Figure 18 by used retrieve depression connected with select attributes, nominal to text and process documents. Inside the Process Documents from data operator, we will have a few step in subprocess as in Figure 19.

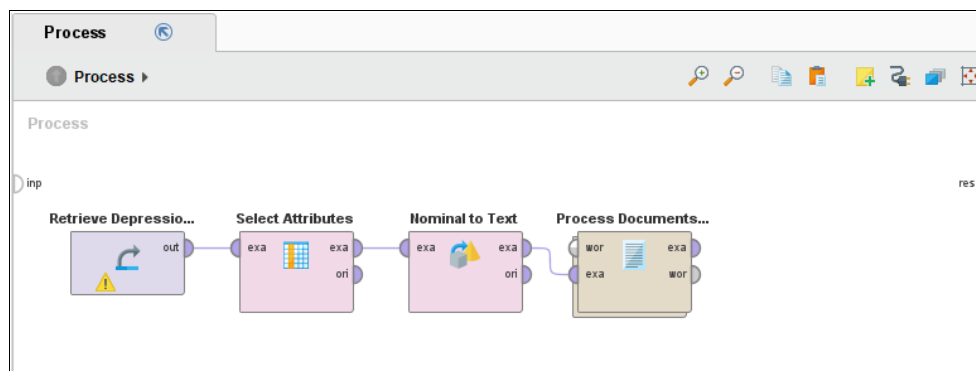


Figure 18. The Process of Tokenization

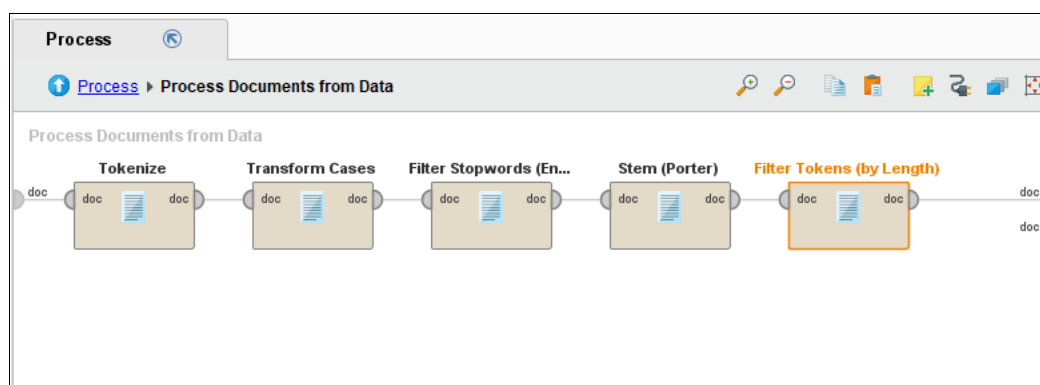


Figure 19. The Sub-Process of Tokenization

Add tokenize to splits the text of documents into a sequence of tokens followed by transform cases to standardize word to lower case. The functions of filter stopwords is removes English stopwords such as “the”, “is”, “and” from a document. Add on stem (Porter) to reduce

the length of the words until a minimum length is reached and last sub process is filter token for filtering tokens based on their length. A minimum length is four (4) and maximum characters are 25. Single character as “”, “s” will not consider in this process.

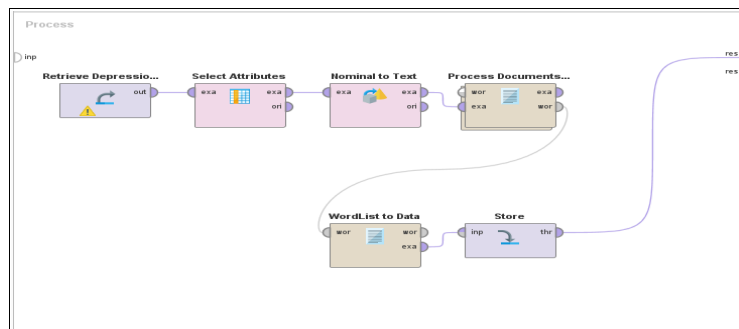


Figure 20. The Sub-Process of Tokenization

Continue the process with connected process documents with wordlist to data and finally store the data by determined to store the data in repository. Figure 20 shown the complete process involved in this part.

Analysis of Sentiment

Moving to perform second part of frequency analysis and word cloud, used the new process and did the process as below.

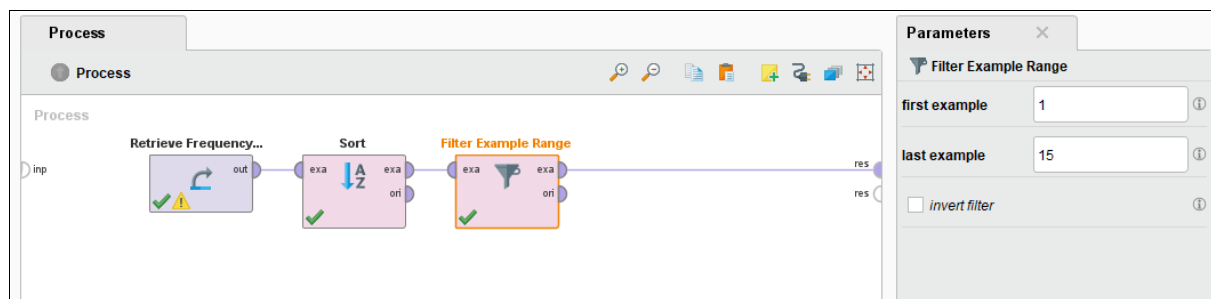


Figure 21. Second Part of Frequency Analysis and Word Cloud

This process was executed to Filter 20 most common word using in Twitter and generate word cloud this 20 words. The details or output will be discussed in next Chapter 4.0 - Findings.

Findings

The raw data that were used in this paper is 2000 rows data and after data cleaning had been done for the keyword mental health 1200 data. After completing the Sentiment Analysis, that is text mining, two types of results were generated: sentiment overview and word overview. Results are presented in Figure 22 and 23.

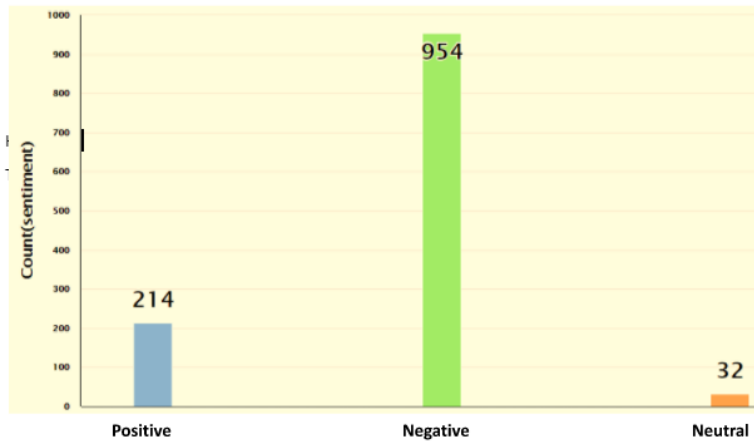


Figure 22. Histogram: Total Number according to the Sentiment

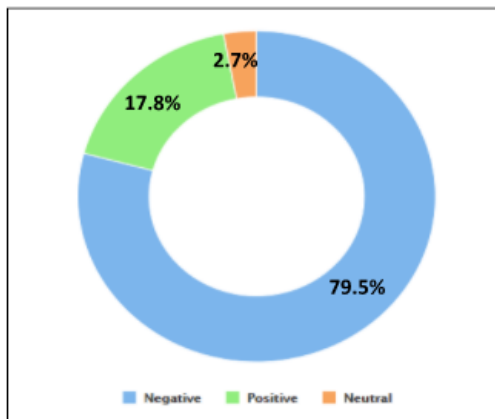


Figure 23. Percentage of Sentiment

The histogram above shows the overview of sentiment that is given by the users of Twitter about mental health. From 1200 data that complete the sentiment analysis for mental health, the highest sentiment towards the keyword is Negative with 954 count (79.5%), while having Positive sentiment with scoring 214 (17.8%) and 32 (2.7%) negative.

Table 1. 20 most common words found in a user's tweet related to mental health

Row No.	Word	In Documents	Total
1	depress	1082	1151
2	anxieti	160	164
3	peopl	92	101
4	feel	72	86
5	mental	72	85
6	caus	69	73
7	time	66	71
8	health	59	69
9	make	64	67
10	help	60	62
11	know	61	62
12	Life	58	62
13	great	60	61
14	suicid	42	52
15	love	41	50

Row No.	Word	In Documents	Total
16	think	48	50
17	suffer	42	45
18	thing	40	43
20	take	39	40

The table 1 shows 20 most common words found in a user's tweet related to mental health. The highest word generated for “mental health” sentiment itself is “depress” with occurrences 1151 times in 1082 documents followed by anxiety and people. In addition, the words “feel” and “mental” are mentioned a lot by the user’s tweet which occur 86 and 85 times in 72 documents respectively. Followed by some other words which are cause, time, and health.



Figure 24. Word Cloud

By analyzing the word cloud in Figure 24, we can determine the most used words by twitter users are depress, anxiety and people. The difference in size between depress and the other 2 words shows how common the words are being used in twitter and the range of frequency of depression and anxiety is really large which does explain something here. More explanation will be done in the next section. While this analysis does not substitute for a formal assessment of the user’s underlying message, it does provide a quick look as a whole on the user's most common issue with mental health.

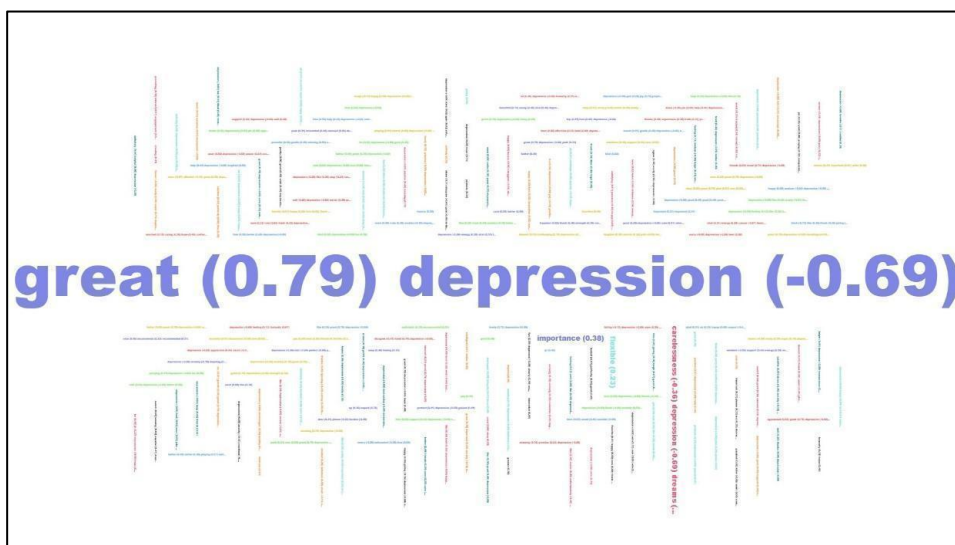


Figure 24. positive sentiment and negative sentiment for the keyword “mental health”

Figure 24 shows positive sentiment and negative sentiment for the keyword “mental health”. Above figure shows a positive sentiment of “great”. Besides that, it also shows the

negative sentiment to express the most common word relating to mental health which is “depression”.

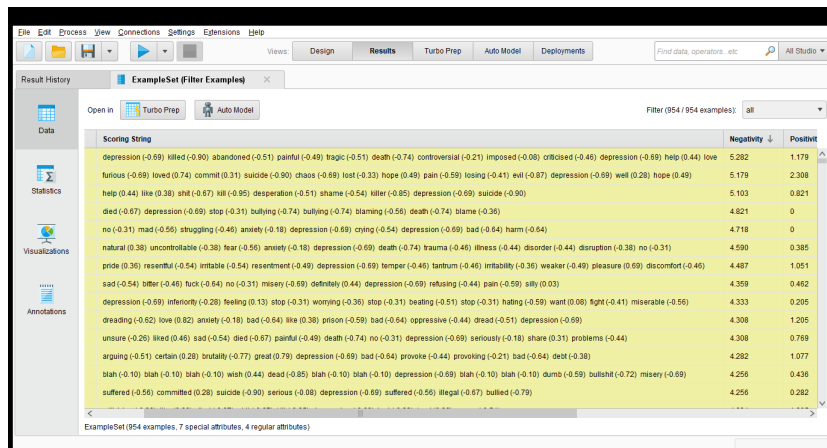


Figure 25. The Scoring String from the Example Set

The Word Cloud in RapidMiner cannot be displayed as more than 500 words. However, the Scoring String from the Example Set in Figure 25 shows the highest frequency of negative word used is “killed” and “suicide” which are both with the string (-0.90). “Depression” is also stated as (-0.69) in the scoring string.

Discussions

Based on the 4.0 Finding, we will discuss further and answer the two-research questions of this study which are: Q1: What is the significant of negative sentiment? Q2: What is the significant of positive sentiment? Figure 26 shown that generally the users of Twitter through their Tweet about Mental Health have the perspective to be negative; positive is the second highest while neutral is lowest among the sentiment analysis.

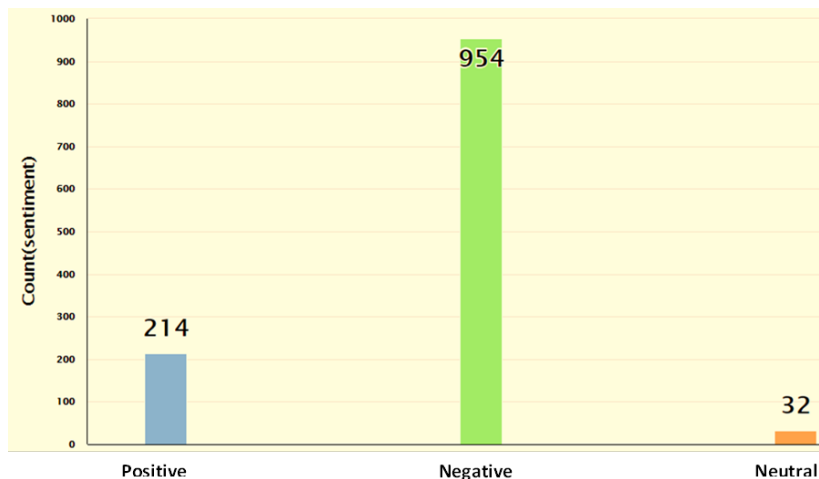


Figure 26. Tweet about Mental Health

Negative Sentiment

Based on Figure 19, a majority of Twitter users about 79.5% tend to be negative in their post related to the mental health to express their feeling, get attention and validation. A person who has persistent, extreme, or disturbing attention-seeking behaviors might be experiencing a mental health disorder. Many tweets that could be classified as a mental health joke most of them contained negative words and sometimes they also included negative emojis. Therefore,

many of those tweets were associated with a negative sentiment. Example of the negative post related to the mental health in the Twitter is available in Figure 27.



Figure 27. Example of the negative post related to the mental health in the Twitter

Positive Sentiment

Meanwhile only 17.8% of the Twitter users spread a positivity in their post related to the mental health to share awareness and provide support. Those tweet about positivity related to the mental health is mostly from the non-profit organization, user that has knowledge or experience with mental health etc. With the positive words spread about the mental health, twitter user can help many people to recover from the mental health issue. Example, the non-profit organization provide free and private consultancy for those who need and advertised about the service in the Twitter. Example of the positive post related to the mental health in the Twitter is available in Figure 28.



Figure 28. Example of the positive post related to the mental health in the Twitter

Table 2 shows the top 20 occurrences words both positive and negative in the generated word list. Word frequency, the number of times used in the tweet by the user, or how frequently the word is being used in the given data are shown below in the following word frequency graph in Table 3. From the word list, the word “depress” has the highest count. This is one of the evident that people exhibit a negative attitude towards the pandemic during the COVID-19 lockdown and post-pandemic financial crisis. With restrictions on socializing many people spend their time playing games or watching videos during the lockdown. This may plant the thoughts of loneliness and depression in individuals.

Table 2. Top 20 Mental Health Words List

Row No.	Word	In Documents	Total
1	depress	1082	1151
2	anxieti	160	164
3	peopl	92	101
4	feel	72	86
5	mental	72	85
6	caus	69	73
7	time	66	71
8	health	59	69
9	make	64	67
10	help	60	62
11	know	61	62
12	Life	58	62
13	great	60	61
14	suicid	42	52
15	love	41	50
16	think	48	50
17	suffer	42	45
18	thing	40	43
20	take	39	40

References

- Debjit, B. (2012, January 01). *Depression - Symptoms, Causes, Medications and Therapies*. THE PHARMA INNOVATION. https://www.researchgate.net/publication/284651508_Depression-symptoms_causes_medications_and_therapies
- Dorney, H. (2021, September 14). *How to create and use hashtags*. Twitter for Business. <https://business.twitter.com/en/blog/how-to-create-and-use-hashtags.html>
- Gupta, S. (2018, January 8). *Sentiment Analysis: Concept, Analysis and Applications* | by Shashank Gupta. Towards Data Science. <https://towardsdatascience.com/sentiment-analysis-concept-analysis-and-applications-6c94d6f58c17>
- Mohsin, M. (2021, April 5). *10 Social Media Statistics You Need to Know in 2021 [Infographic]*. Oberlo. <https://my.oberlo.com/blog/social-media-marketing-statistics>
- Pyoneer, T. (2020, October 26). *5 Reasons Why Sentiment Analysis is Important*. Pyoneer. https://www.pyoneer.io/post/5-reasons-why-sentiment-analysis-is-important/?utm_campaign=realreasonwhyisentiment&utm_medium=linkedinarticle&utm_source=linkedinstefan
- Tanu Verma, Renu , Deepti Gaur. Tokenization and Filtering Process in RapidMiner. (2014). International Journal of Applied Information Systems, 7(2), 16–18.
- U.S. Department of Health & Human Services. (2022, February 28). *What Is Mental Health?* | MentalHealth.gov. Mental Health.gov. <https://www.mentalhealth.gov/basics/what-is-mental-health>

Based on the Perception of Ethics in Social Commerce Platforms: Adopting SEM and MCDM Approaches for Benchmarking Customers in Rural Communities

Abdullah Mohammed Sadaa¹, Yuvaraj Ganesan¹, Khai Wah Khaw², Alhamzah Alnoor², Sammar Abbas³, XinYing Chew⁴, Gül Erkol Bayram⁵

Graduate School of Business, Universiti Sains Malaysia, Malaysia¹

School of Management, Universiti Sains Malaysia, Malaysia²

Institute of Business Studies, Kohat University of Science and Technology, Pakistan³

School of Computer Sciences, Universiti Sains Malaysia, Malaysia⁴

School of Tourism and Hospitality Management Department of Tour Guiding, Sinop University, Turkey⁵

Corresponding email: alhamzah.malik@stu.edu.iq

Abstract

The study aims to determine customers' perceptions of the ethics of social commerce platforms by investigating the role of the impact of information quality, information credibility, website quality, innovativeness, altruism, sense of belonging, self-enhancement, social support, and attitude towards eWOM on the perception of ethics of social commerce platforms. In addition, the strength of the relationship between these factors and the perception of ethics of social commerce platforms was determined by the mediating role of the perceived risk of ethical violations. To this end, this study complements the academic literature by integrating SEM and MCDM techniques. Hence, to complete the strategic decisive solution, this study uses a survey to collect data from customers of rural communities in Malaysia and Turkey. The results demonstrate that perceived risk of ethical violations has a partial mediating role in the relationship between dependent variables and the perception of ethics of social commerce platforms for Malaysia and Turkey. Benchmarking and ranking customers from best to worst based on the perception of ethics of social commerce would identify customers with a high perception of the ethics of social commerce platforms and motivate them as opinion leaders of such platforms. However, with the worst-ranked customers, social commerce platforms can treat them with caution and strive to turn a negative perception into a positive towards the ethics of such platforms. Besides, the cross-cluster study at the level of Asia and Europe would contribute to the literature to identify insights into the differences and similarities between the Asian and European contexts based on multiple and diverse cultures regarding social commerce ethics of rural communities.

Keyword: ethics of social commerce; multi-criteria decision making; perceived risk of ethical violations; rural communities; social support.

Introduction

The development of social media and transformation of digital technologies have created a quantum leap in commercial exchanges. Social commerce is the virtual world of business and also the exchange of products and services (Biucky et al., 2017). Therefore, social commerce has replaced electronic commerce (e-commerce). Social commerce is considered an innovative channel for consumers to improve purchasing decisions and shopping experiences because

social commerce channels increase the interactions of customers and eWOM content (e.g., Abdullah et al., 2022; Busalim & Hussin, 2016; Cheng et al., 2021; Curty & Zhang, 2013; Handarkho, 2021; Shanmugam et al., 2016; Soleimani et al., 2017). Through consumer participation in social platforms such as Etsy, Pinterest, Facebook and Twitter, social commerce provides an innovative and incredible customer experience that would support firms in establishing brand loyalty (Liang et al., 2011; Liébana-Cabanillas & Alonso-Dos-Santos, 2017; Phua et al., 2017). From now on, social commerce is considered a worldwide phenomenon (Gvili & Levy, 2021). Hence, online shopping motivates customers to engage in social commerce activities such as purchasing and eWOM regarding products (Chen et al., 2018; Cho et al., 2014; Farivar et al., 2018).

Furthermore, the major ongoing growth of Web 2.0 technology has heralded the possibility of altering the way customers engage online (Cova & White, 2010). Web 2.0 technology supports customers to create and manage social networks online and foster presence and social support (Chen & Shen, 2015). Web 2.0 technology has given customers the ability to create content and offers interaction amongst users (Jiménez-Barreto & Campo-Martínez, 2018; Lin et al., 2019). Customers frequently create social commerce content via rankings, voting and recommendations on social commerce platforms (Biucky et al., 2017; Cheung & Lee, 2012). Literature has shared that the intentions of potential customers towards online purchases are influenced by the eWOM of previous customers (Yan et al., 2018). Previous research has claimed various factors related to social commerce platforms, with a stream of research having investigated trust, privacy, education, perceived quality, time savings, discount pricing, convenience, competitive pricing, expert advice, increased access to information, quality of credibility, website quality, perceived risk, failure to handle complaints, inefficiency of product repair, and inadequate response to customer complaints (Bugshan & Attar, 2020; Chen & Shen, 2015; Hajli et al., 2015; Khaw et al., 2022; Lee, 2009; Tariq et al., 2021; Xu et al., 2020). In addition, most previous research investigated customer intentions towards social commerce. Moreover, previous research streams have predicted the determinants of customer intentions and trust towards social commerce platforms (Alnoor et al., 2022; Lo et al., 2022; Ng et al., 2022; Wang et al., 2022). However, according to Mangold and Faulds (2009), many Internet users think online buying is fraught with danger and uncertainty. The risks are higher in an online shopping environment than in a physical shopping environment because clients cannot examine the products in person when shopping online; there is a lack of tangible evidence of product quality, and security and privacy concerns also are also raised in this situation (Pelaez et al., 2019; Regner & Riener, 2017; Stouthuysen et al., 2018). The negative consequences of increasing perceived risk include decreased sales (Lee, 2014) and low purchase and repurchase intentions (Chiu et al., 2018; Yang et al., 2019). Customers are more likely to purchase low-value products and services due to reduced trust in social commerce (Maia et al., 2018). Furthermore, two major concerns had been identified in previous literature, including theoretical, practical and methodologically issues.

Theoretically, most previous literature focused on customer intention towards social commerce platforms (Alnoor et al., 2022; Lo et al., 2022; Ng et al., 2022; Wang et al., 2022). In addition, it also stressed on predicting the determinants of social commerce (Aw et al., 2022; Francisco Liébana-Cabanillas et al., 2021; Loh et al., 2022). However, perceptions of the ethics of customers toward social commerce platforms are seldom studied. The present research provides a paradigm for investigating the ethics of social commerce platforms. To this end, this study completes previous studies by investigating customer perceptions of ethics in social commerce platforms. Practically, many attempts in literature have centered on addressing linear issues of the SEM approach by adopting the dual stage of SEM and artificial neural network (ANN) in order to cover the antecedents of customer intention to use social commerce (Alnoor et al., 2022; Aw et al., 2022; Loh et al., 2022; Ng et al., 2022; Wang et al., 2022).

However, there is a paucity of literature ranking customers based on a perception of the ethics of social commerce platforms. As mentioned previously, benchmarking and ranking customers from best to worst, based on the perception of ethics of social commerce platforms would enable the determination and identification of identify customers with high perceptions of the ethics of social commerce platforms, and motivate them to be opinion leaders of such platforms. However, with worst-ranked customers, social commerce platforms can treat them with caution and strive to turn negative perceptions into positive ones. Methodologically, the attempts of literature reviews to capture linear and nonlinear interaction between determinants of social commerce, remain within the context of developed communities and within A certain or single community, be it Asian or European (Hew et al., 2019; Leong et al., 2019, 2020). Furthermore, there is a huge gap in previous studies that needs thorough investigation. Hence, a cross-cluster study at a higher level of Asia and Europe will contribute to literature which identify the insights into the differences and similarities between Asia and Europe based on multiple and diverse cultures regarding social commerce ethics of rural communities.

Such a complex issue needs a novel approach, and MCDM provides a comprehensive solution. Additionally, MCDM supports policymakers in determining customers who have positive perceptions of social commerce ethics, and identifies the negative perceptions of customers in rural communities towards social commerce ethics (Djenadic et al., 2022). Therefore, the use of a hybrid analytical approach SEM-MCDM contributes to developing linear relationships, developing social commerce ethics, confirming the validity of SEM results, and providing insight to practitioners and academics on the issue of customer perception of commerce trade ethics in rural communities. This study complements existing literature by using a dual stage PLS-SEM and MCDM approach to capture causal relationships and benchmark customers of rural communities, based on their perceptions of the ethics of social commerce platforms. Using the SEM and MCDM approaches address the shortcomings of previous studies in terms of multivariate assumptions.

Literature Review

Information Quality

Information quality is a vital variable to the performance of the information system model, and is described as the suitability of information features for information consumers (Wang & Strong, 1996). According to this definition, information quality relates to user evaluation of whether the information features suit their needs and intended usage. In online buying, studies have identified information quality as the characteristics of the content quality of customer reviews (Park et al., 2007). In this respect, the centre of focus in most prior studies has been primarily on the variables that inspire consumers to embrace social commerce platforms. Among them is information availability (Grabner-Kräuter & Breitenecker, 2011; Jalal et al., 2011; Safeena et al., 2013). Information is a means for improved purchase decision-making to lower perceived risk (Chaouali et al., 2016). Perceived risk is about customer emotions with regards to probability and unpleasant outcomes, which are vital and pivotal in the process of decision making (Cunningham et al., 2005). People strive to regulate perceived impacts before combating their anxieties. At the same time, with substantial replacements or alternatives, customers seek information from diverse sources to lower anticipated risk and form better judgments of products (Zhang et al., 2012). Therefore, high-quality information enables consumers to obtain information related to a specific issue and helps customers avoid spending excessive effort digesting meaningless information (Zheng et al., 2013). Additionally, information quality might alter interaction with perceived risk in product assessment (Park & Lee, 2008)), website evaluation (Awad & Ragowsky, 2008), and purchase prediction (Park et al., 2007). Because of this fundamental relationship between information quality and perceived

risk, various articles have sought to characterize information quality as a multi-dimensional notion (Chen et al., 2017; Cheng et al., 2021).

Information Credibility

Another aspect determining the acceptance of social commerce platforms services is trustworthiness. Credibility is defined as the trust ability of a system in transmitting and completing transactions (Erdem & Swait, 2004). Bhattacharjee and Clive (2006) mentioned information credibility is the level at which information is deemed to be credible, competent, and trustworthy (Bhattacharjee & Clive, 2006; Ying et al., 2021). Information credibility is a crucial predictor of the efficacy of information, and is regarded as the message recipient's judgment of the credibility of advocacy (Baber et al., 2016). According to Wu and Wang (2011), credibility reveals is a critical aspect in decision making of social commerce purchasing. Hence, information credibility is considered importance factor in online context (Mak et al., 1997), because the positive character of the information promotes the recipient's acceptance of the information (Ohanian, 1990). A firm or brand's reputation may minimise projected expenses and perceived risk, and enhance brand choice (Erdem & Swait, 2004). Many studies have claimed that trustworthiness and expertise are essential components of source credibility (Erdem & Swait, 2004; Wu & Wang, 2011). On the topic of credibility, trust and expertise are firm basics of gauging credibility. Therefore, information credibility is raising the trustworthiness of social commerce platforms (Ohanian, 1990). In this regard, experience plays an important role in increasing information credibility and enabling customers to solve problems efficiently (Wu & Wang, 2011).

Furthermore, the advancement of online communication technology has enabled customers to increase content creation on social commerce website and platforms. As a result, consumers may provide more accurate descriptions of the actual experiences with social commerce platforms (Abdullah et al., 2022; Alnoor et al., 2022). On the other hand, negative content creation is increasing in social commerce platforms that provide poor services (Kang & Namkung, 2019). As a result, the adoption of social commerce is strongly linked to information trustworthiness. In other words, a lack of reliability in information reduces the likelihood of adoption.

Website Quality

The idea of website quality is crucial in social commerce since such an concept immediately promotes favorable impressions and attitudes of online transactions (Chang et al., 2012; McCoy et al., 2009). Website quality reduces perceived risks to consumers and encourages online purchase (Liang & Chen, 2009). Aladwani and Palvia (2002) describes customer perceptions of website quality as 'user's judgments of a website's features satisfying user demands and reflecting overall website excellence. The user considers the understanding of the website quality is important. Moreover, website quality has become a priority for companies that intend to use successful online strategies (Beh et al., 2021; Hernández et al., 2009). Because user perceptions of website quality can significantly influence consumer beliefs and intention to use social commerce firms (Hsu et al., 2018).

Social commerce involves using social networking platforms for commercial purposes (Liang et al., 2011). Various studies in online business have shown the relevance of website quality in conducting business online (Liébana-Cabanillas & Alonso-Dos-Santos, 2017). Website quality is a user-friendly system in online commerce that is assessed based on customer views of accessibility, ease of use, service quality, and dependability (Ahn et al., 2007; Lal, 2017; Soleimani et al., 2017; Tzavlopoulos et al., 2019). Heinze et al. (2017), and Lin (2007) argue that user-friendly website specifications may help develop favorable relationships between online vendors and customers. Furthermore, according to Ahn et al.

(2007), website quality impacts customer confidence in online retail and lowering the perceived risk of online purchases. Users rate a website's service quality in terms of problems solving, and treatment of website management for customers. The customer support representative can assist customers in resolving the problem and mitigate confused with technical jargon and procedures. Furthermore, consumer perceived risk would be more significant since a social commerce site is indeed for online transactions. As a result, the website's dependability is necessary to assure users that their personal information and payment information will be secured.

Innovativeness

Agarwal and Prasad (1998) were the first to suggest innovativeness as a factor in technology adoption models. Innovativeness defined as the degree to which a person is receptive to new ideas and freely adopts innovative judgments before others (Singh et al., 2020; Thakur & Srivastava, 2014). Consumers with a high degree of innovativeness are more likely to utilize innovative services. As a result, innovativeness increases user willingness to undertake risks via new services. A user with a higher level of innovation will accept risky innovations. As a result, consumers adapted to innovation have high perceived satisfaction (Jianlin & Qi, 2010; Korea & Park, 2013; Ying Wang et al., 2017). Despite increased degrees of uncertainty and risk, consumer views that social commerce platforms provide new services for purchasing items which may provide benefits such as reduced pricing, convenience, and a wider variety, would likely attract customers. The rank of an individual's views of innovation is a significant factor in adopting new technology (Khaw et al., 2022). An individual's perceived creativity elicits good emotional responses, resulting in more referrals and favorable information about social commerce services (Tokunaga, 2013). Positive comments on social commerce innovations are increasing from consumers as they view innovations as incentives to increase online purchasing intentions (Aransyah et al., 2019). Positive information, comments, and recommendations for social commerce result in more favorable emotional reactions and perceptions of using social commerce platforms.

Altruism

The evidence from sociologists, finance, political science and psychology supports the idea that altruism is an element of human nature (Ali et al., 2020). According to Piliavin and Charng (1990), altruism is defined as a behavior that involves situations related to others. Altruism is defined by Ismagilova et al. (2021) as the drive to enhance the well-being of others without expecting returns. Individuals have an innate urge to support or assist others, regardless of any compensation (Wasko & Faraj, 2005). Researchers claim in the context of social commerce, consumers have a comparable urge to assist others in the online environment (Baethge et al., 2016). Following the purchase of a product or service, customers may be driven to share information of the experience to assist others in making a choice in buying or support the company attract new customers (Beaver & Engel, 1996). The exchange of information in online purchasing portals improves product and service transparency. Customers have a higher regard for information that can be realized. The consequences of assisting others without expecting a return raise confidence in purchasing via social commerce platforms (Ismagilova et al., 2021). Customers' confidence in purchasing online is increased by receiving support and altruism from previous customers and social commerce platforms (Hsieh & Tsao, 2014). Altruism has been identified as an essential element in creating eWOM that supports the intentions of potential customers (Cui et al., 2014; Kim et al., 2017; Luarn et al., 2015). Altruism is a driver of customer intention in online commerce activities (Cheung and Lee, 2012). According to Hennig-Thurau et al. (2004) altruism encourages customers to use social commerce channels. Altruism was discovered as a motivation for promoting positive eWOM

communication by Yusuf et al. (2018). However, there is slight evidence that altruism affects the perceived risk of using social commerce networks. To address this gap in literature, altruism must be adopted to extend the knowledge of the perception of social commerce platform ethics.

Sense of Belonging

The sensation of personal connection in a system or environment that makes people feel like an intrinsic part of the system or environment, is referred to as a sense of belonging (B. M. K. Hagerty et al., 1992). Previous research has identified a sense of belonging as an element of critical success in virtual communities. For example, Hagerty et al. (1996) stated a sense of belonging is a psychological experience combining cognitive and emotional components. Hence, a sense of belonging helps increase customers engagement of using social commerce. A sense of belonging has been shown to influence social media use (Chai & Kim, 2012; Lin et al., 2014). A user's sense of cohesiveness or loyalty to a group or community, is referred to as a sense of belonging (Chu et al., 2019). According to the social identity theory, a sense of belonging is described as user interaction that leads to the user identifying as part of a social circle or group. A sense of belonging is a strong and long-lasting emotional response by users in a social media that reflects user identification and connection to a social community (Lin et al., 2014). Prior social media studies discovered that a customers' sense of belonging represents a useful subjective experience of the interaction with other customers (Zhao et al., 2012).

A sense of belonging is recognized as a significant component impacting user sentiment, stickiness, and future use behaviour in social commerce platforms (Hsu & Liao, 2014; Lin et al., 2014). A sense of belonging is defined in this research as an emotional reaction that explains customers connection and participation on social commerce platforms. The sensation of belonging reveals the using social commerce platforms is essential in the lives of customers. Consequently, customers that have strong sense of belonging will spend further struggle to participate in social media activities, such as reading other customers' comments, exchanging information, making new connections, and preserving current relationships. Lin et al. (2014) identified a sense of belonging as a critical emotional response. Therefore, sense of belonging affects consumers' continuous use of social commerce services. According to Xu and Li (2015), a sense of belonging significantly influences an Internet customers' involvement on Wikipedia. A sense of belonging has been admitted as a significant antecedent of user behaviour on social commerce platforms (Liu et al., 2018). However, previous research has neglected the relationship between a sense of belonging and perceived risk in social commerce (Rosen et al., 2011). This study aims to bridge the gap in the literature by investigating the relationship between a sense of belonging and social commerce perceptions of ethics through the mediating role of perceived risk.

Self-Enhancement

Social platforms have become significant conduits that allow customers to use online channels to increase customer convenience (SChu et al., 2019). Social media offers customers a venue to exchange varied experiences with goods or services (Chang, 2015). Therefore, social media plays a critical role in developing a consumer's identity and articulating self-enhancement (Cui et al., 2020; Moore & McElroy, 2012). In this sense, customers may exchange comments and photographs in a post on social networks. Thus, consumers wisely choose the images of purchased items in order to develop favorable self-enhancement. Self-enhancement was highlighted as a key element that enables Internet users to enhance success (Pitchay et al., 2021; Gershoff & Wooten, 2016). Self-enhancement defines as a strong desire to maintain and increase the positivity of the self-concept. Self-enhancement refers to the circumstances in which customers seek to demonstrate positive attitudes by sharing information (Berger, 2014). By utilizing online feedback, customers may enhance their image

and earn the recognition of others by providing information about products and services (Tong et al., 2013). Self-enhancement is linked with motivation to submit information regarding services and products in online feedback systems (Cui et al., 2020). According to Sundaram et al. (1998) customers discuss exciting experiences online would increase self-enhancement. Positive self-enhancement involves respect and acceptance by peers of a customer for possessing outstanding traits (Milaković & Mihić, 2017; Wu et al., 2021). Thus, positive self-enhancement by customers motivates the use of social commerce platforms and increases content creation around social commerce items and services. Therefore, self-enhancement offers clear and succinct images that may build reasonable opinions of new social commerce users.

Social Support

The social commerce community has been extensively utilized to facilitate online transactions between vendors and customers (Chen & Shen, 2015). Consumers may communicate with other customers to benefit from sharing information, which increases the desire to engage in online commercial activities (Liang et al., 2011). As a result, social values offered by customers, such as information and emotive inclinations associated with a product or service are beneficial in creating customers purchasing decision (Orso et al., 2017; L. Zhou et al., 2013). Social support defines as resources supplied to customers in social commerce platforms to enhance social support and presence. Social support may promote collaboration, reciprocity, and trust among vendors and customers (Oh & Syn, 2015). Social exchange theory argues that the customer is influenced by the presence and social support of previous customers on social commerce platforms (Liang et al., 2011).

Social support is a multifaceted entity that comprises three components: informational, emotional and tangible assistance (Schaefer et al., 1981). Online social support is intangible and is informational and emotional support since interactions in social media occur via technological methods such as computers and smartphones (Jiang et al., 2019; Liang et al., 2011). Informational assistance includes making suggestions, offering advice, and sharing expertise to assist potential customers in solving difficulties. Emotional support conveys emotions such as benevolence, compassion, kindness, understanding, and empathy toward others (Yang, 2021). Customers having strong perceptions of emotional support increases the sense of belonging to the social commerce community (Sheikh et al., 2019). Consumers may obtain social support from their peers on social media networks (Yahia et al., 2018). Peers in online communities may help by providing product or service-related information, shopping experiences, and emotional support (Jiang et al., 2019; Wang et al., 2020). Recommendations, suggestions, and emotional concerns assist customers in reducing the perceived risk (Alnoor et al., 2022; Yahia et al., 2018). Consumer confidence in social commerce increases due to the assistance acquired via social engagement (Hajli, 2014; Liang et al., 2011).

eWOM

Because the Internet is such an essential source of information and online commerce channels, eWOM is a crucial resource for customers to make a purchase decision (Cheung et al., 2008; Hennig-Thurau et al., 2004; Lee, 2014). eWOM, as described by Hennig-Thurau et al. (2004), is positive or negative comment made by prospective, existing, or past consumers about a product or firm, which is made accessible to numerous individuals and institutions for commercial and non-commercial activity. eWOM has grown in popularity since it allows users to create, modify and share information about social commerce products and services. As a result, eWOM has a more substantial persuasive impact on consumers in social commerce and influence customer behavior toward using of online purchasing (Wang & Yu, 2017). The effects of eWOM on several aspects have been extensively studied. Such as eWOM and loyalty

(Gauri et al., 2008; Yoo et al., 2013), eWOM and social media (Teng et al., 2014), and eWOM and social commerce (Q. Yan et al., 2016). Furthermore, prior research has adequately proven the effects of eWOM (Daugherty & Hoffman, 2014; Jalilvand & Samiei, 2012). King et al. (2014), Park and Kim (2008), and Rouibah et al. (2021) suggested the effects of eWOM on social media substantially relate to purchasing intentions. Furthermore, eWOM is seen as a more trustworthy and unbiased source of information that influences pre and post-purchase processes (Luo & Zhong, 2015). Consumers may evaluate options and eliminate ambiguity in the decision-making process using eWOM, which reduces the cost and time (Lee, 2014). Positive eWOM regarding products enhance buyers to be more likely to consider such social commerce channels (Park & Lee, 2008). However, the source legitimacy of the communication determines this favorable effect. Erkan and Evans (2016) advised that attitudes of social media users toward eWOM information may have a good influence on the usability of eWOM details and customer purchasing intentions. The attitude towards eWOM is defined as customers' positive or negative disposition toward eWOM communication (Fu et al., 2015). Attitude towards information is a crucial element that fosters eWOM involvement (Ali et al., 2020).

Perceived Risk

Perceived risk is customers' perception of unsatisfactory outcomes while acquiring a product or service (Dowling & Staelin, 1994; Yang et al., 2016). In social commerce, a perceived risk concept is the consumer's anticipation of loss (Forsythe & Shi, 2003). Many academics recognize perceived risk in the online commerce as a significant aspect of the interaction between customers and social commerce platforms (N. Chung et al., 2015; Razak et al., 2014). Moreover, several studies have revealed perceived risk as a crucial factor in purchasing intention of social commerce (Vainikka, 2013). The idea of perceived risk was initially expanded from psychology by Bauer in 1960. Bauer argues uncertainty of customers' purchase choices would lead to the risk. Perceived risk involves two factors namely the uncertainty of customers' choices and the repercussions of making unsatisfactory judgments (Stigler, 1961). According to Zhang and Hou (2017) perceived risk include two components. The first component is the expected harmful effects of the transaction. The second component is the perceived loss magnitude.

Consumers view internet purchasing as more dangerous than conventional shopping (Bhatnagar & Ghose, 2004; Cho et al., 2014; Featherman & Pavlou, 2003). Greater risk and less trust are expected in the context of social commerce because of the lack of visual indications of product quality, insufficiency of interaction, and security concerns (Hawes & Lumpkin, 1986; Laroche et al., 2005). Accordingly, San Martín and Camarero (2009) indicated significant levels of perceived risk adversely influence online purchasing intention. Previous research has shown the negative relationship between perceived risk and customers' online purchase intention (Lee & Tan, 2003; Pavlou, 2003). Several studies have indicated the influence of perceived risk on online purchasing (Bhatnagar & Ghose, 2004; Forsythe & Shi, 2003). Dowling (1986), Glover and Benbasat (2010), and Rosillo-Díaz et al. (2020) argue that perceived risk to privacy and security is highly characteristic of purchases made through online commerce platforms. The concerns of customers toward inappropriately sharing or losing personal information are increased based on the ethical violations of social commerce platforms.

Perception of the Ethics of Social Commerce Platforms

The term 'social commerce' was used in 2005 (Bugshan & Attar, 2020; Zhou et al., 2013) to describe a new type of online marketplace in which customers may seek advice and suggestions from others, identify products and services, and purchase (Lu, Fan, et al., 2016). Social commerce has evolved as a prominent component of the electronic commerce sector

(Zhang et al., 2016). Social commerce is a form of Web 2.0 technology to enable customer interaction and content creation (Hajli et al., 2017). As a result, social commerce defined as social media and networking methods to purchase and sell goods and services online (Bazi et al., 2020; Bugshan & Attar, 2020; Lin et al., 2019; Wang et al., 2019). The benefit of adopting social media is increasing information sharing activities, improving the effectiveness of managing customer relationship management, advertising, and promotion (Hajli, 2013; Hajli, 2015; Shanmugam et al., 2016; Zhang et al., 2016). In this context, many firms of social commerce are using photographs and videos to encourage social interaction by providing extensive information (Zhang et al., 2016). Therefore, eWOM may be social marketing and promotion strategies that improve information sharing (Yusuf et al., 2018). Furthermore, social commerce firms' information architectures fostered trust between enterprises and customers (Hajli et al., 2017). Customer loyalty, engagement, and purchase intent to the social commerce platform would be increased (Alnoor et al., 2022; Bianchi et al., 2017). The primary characteristics of a social commerce platform are providing guidance and information assistance to the customers (Cross et al., 2001). Previous studies have shown that information-sharing activities on social commerce platforms mitigate the perceived risk of users. However, the information sharing on social commerce platforms is influenced by perceived delight, indifference, and utility (Sharma & Crossler, 2014). Similarly, Olivero and Lunt (2004) confirmed control and trust as crucial characteristics that must be properly incorporated into the social commerce platform. Therefore, the negative perception of ethics of social commerce platforms might lead to negative emotions and loss of faith in accepting information via social commerce platforms (Glover & Benbasat, 2010).

Hypothesis Development

Relationship Between Information Quality and Perceived Risk

In implementing social commerce platforms evaluations, customers' risks link with economic advantages, including product quality and service level (Hussain et al., 2017). Customers that confront high perceived risks and high prices will analyze the relevant information on the chosen items of social commerce platforms attentively to minimize losses (Wang & Chang, 2013). Gu et al. (2007) revealed that consumers prefer high-quality information to minimize information-processing costs, time, and effort. Thus, high-quality information enables users to make better judgments quickly (Kim et al., 2016) and helps lower consumers' perceived risk levels connected to privacy issues (Malhotra et al., 2004). Nicolaou and McKnight (2006) confirmed improving information quality decreases the perception of risk. The high-quality information would mitigate uncertainty and risk connected with the online purchase (Yi et al., 2013). Therefore, information quality is beneficial for consumers to determine the quality of items or services on social commerce platforms. Customers with a perceived high risk require trustworthy and quality information to decrease perceived losses. For that reason, the first research hypothesis is presented:

H1: Higher the quality of information lesser the perceived risk of ethical violation in using social commerce platforms.

Relationship Between Information Credibility and Perceived Risk

Potential consumers must depend on past customers' views and experiences rather than manufacturers' information to achieve high-credibility information. Such information lowers consumers' perceived risk and increases the confidence in social commerce (Lu, Zeng, et al., 2016). On the other hand, the growth of the virtual environment has resulted in unbroken flexibility for consumers to communicate their experiences in the absence of face-to-face encounters. As a consequence, the information credibility of such communication is difficult

to determine (Reichelt et al., 2014). In other words, the credibility and trustworthiness of information in an online environment affect perceived risk of ethical violations (Liu et al., 2020). In the context of online consumer reviews, the information credibility is considered a critical determinant of perceived risk of ethical violations (Sen, 2007). Consumers' confusion and hazards of using online commerce services are increased due to a lack of suitable information trustworthiness on social commerce platforms (Xu et al., 2020). Increased information credibility removes the fear barrier and increased trust in online commerce platforms (Trumbo & McComas, 2003). Adverse responses to adopting social commerce items and services may be mitigated by discussing thoughts and collecting honest feedback from previous consumers (Cheng et al., 2021). As a result, the current study indicates that:

H2: Credibility of information mitigate the perceived risk of ethical violation on social commerce platforms.

Relationship Between Website Quality and Perceived Risk

Websites are critical to the online business's success since social commerce platforms serve as a communication route between the organization and consumers (Chen et al., 2017; Kleinlercher et al., 2018). Di Fatta et al. (2016) conducted a meta-analysis on the user-perceived website quality and concluded the impact of website quality on ease of use, usefulness, and fun. The quality of a website motivates consumers to purchase online. In this context, Qalati et al. (2021) contended that excellent website quality might boost positive perceptions and beliefs about online retail items, lowering the consumer's perceived risk of ethical violations. Caruana (2004) discussed customers having a positive perception of the quality of the website increases confidence in online commerce. With the growing influence of online service quality on customer attitudes and satisfaction, online commerce research has highlighted website quality as critical for lowering levels of perceived risk (Cenfetelli et al., 2008). Further study revealed that the quality of a website is a significant predictor of perceptions of online product quality (Nowak & Newton, 2008). As a result, website quality may impact views about the quality of social commerce services. Consequently, this research anticipates that website quality will mitigate the influence of perceived risk on online purchase. We suggest the following assumes.

H3: Quality of website contents decreases the risk perception of customers while using social commerce platforms.

Relationship Between Innovativeness and Perceived Risk

Theorists of innovation adoption believe that novel social commerce attributes, such as technological sophistication, low price, newness, security, and service quality can create consumers' satisfaction with online commerce (Li et al., 2021; Singh et al., 2020). Innovativeness that corresponds to consumers' perceived beliefs would reduce perceived risk of ethical violations (Chauhan et al., 2019; Zhang & Hou, 2017). Positive customer views of adopting innovations for social commerce platforms decrease perceived risks of desirable and unpleasant consequences of adoption (Thakur & Srivastava, 2014). Thus, the perceived risk resulting from the unexpected adoption results will diminish (Aldás-Manzano et al., 2009; Mathew et al., 2021). Consumer awareness and favorable impression of innovations promote the continuation of usage of social commerce services and mitigate perceived risk of ethical violations (Yang et al., 2019). Besides, acceptance and readiness to embrace new goods and services diminish resistance to adoption and lessen the risk of ambiguity. Therefore, the present research reveals that:

H4: Innovativeness in social commerce platforms reduces the level of perceived risk of using such platforms among customers.

Relationship Between Altruism and Perceived Risk

According to social exchange theory, the individual develops an exchange connection with others by freely offering advantages and expecting rewards, such as trust and pleasure. Altruism reduce the risk of online purchases because customers' deliberate involvement enhances online buying processes for potential customers and reduce the danger of practicing online activities (Liao et al., 2019; Wang et al., 2021). Trust is an essential aspect (Beldad et al., 2010). In addition, the voluntary informational assistance of altruistic individuals in the category of social support offers customers suggestions, knowledge, and helpful advice to lower the perceived risk of making an adoption choice (Liu et al., 2021). Altruistic people's knowledge and recommendations concerning social commerce items promote integrity and minimise ambiguity (Shiau & Chau, 2015). Moreover, discussing altruists' thoughts regarding product purchase and delivery boosts confidence in social commerce platforms. Likewise, altruism promoting positive attitudes about adopting social commerce services (Lal, 2017). As a result, the existing research adopted that:

H5: Presence of altruistic individuals on social commerce platforms lessen the risk perception among social commerce platforms users.

Relationship Between the Sense of Belonging and Perceived Risk

Several studies have studied the sense of belonging as a motivator of eWOM within an online group. In particular, Cheung and Lee (2012) view the sense of belonging as a factor that motivates customers to participate in eWOM. Sense of belonging also significantly impacts consumer eWOM interactions in social commerce. Ali et al. (2020) suggested that customers having a strong sense of belonging increases the tendency to share knowledge on social commerce platforms. Thus, sense of belonging reduces perceived risk. Moreover, information communicated by other customers significantly impacts users' purchasing choices and behaviour (Rosen et al., 2011; Zhou et al., 2019). A modern social commerce user could act and behave depending on the sense of belonging to their group of acquaintances on social commerce platforms. For example, many customers are influenced by the opinions of friends and family about social commerce products and services. Hence, choosing a product or service is related to a sense of belonging. Because sense of belonging reduces perceived risk of ethical violations of social commerce platforms (Liu et al., 2018). Consumers having a sense of belonging for social commerce platforms inspires confidence in online commerce and changes perceived negative risk to positive towards online purchasing. Based on the above, the study suggests that:

H6: The more sense of belonging customers has on social commerce platforms the lower the level of perceived risk of using social commerce platforms.

Relationship Between Self-Enhancement and Perceived Risk

Wojnicki and Godes (2011) indicted customers with positive self-enhancement prefer to share the good, fulfilling results with brands, products, and services. In online reviews, customers express positive feelings, such as trust, delight, and anticipation (Felbermayr & Nanopoulos, 2016). In the context of social commerce platforms, consumer self-enhancement is a powerful catalyst for creating positive perceptions towards social commerce platforms and gaining social standing. Therefore, self-enhancement supports the development of positive customer perceptions and reduces perceived risk of ethical violations (Chung & Darke, 2006; Grange et al., 2020; Vargo et al., 2019). Consumers with high self-enhancement are more likely

to share positive insight into their experiences with social commerce products and services. Additionally, consumers share accurate feedback that can support the users' sense of social interaction (Gremle, 2004; Wang et al., 2020; Yan et al., 2021). Consumers' self-enhancing is sufficient to result in positive adaptive behavior that minimize users' risk perceptions of adopting social commerce goods and services. As a result, the following hypothesis is proposed in this study:

H7: Self-enhancement reduces the level of perceived risk of using social commerce platforms among customers.

Relationship Between Social Support and Perceived Risk

Ratings, reviews, and suggestions are vital for social commerce users since customers cannot obtain firsthand experiences of the items by scent or touch sense (Molinillo et al., 2020; Yang, 2021). As a result, social support offers customers suggestions, information, and helpful advice to assist in making an informed purchasing choice (Liang et al., 2011; Yahia et al., 2018). Ting-Peng Liang et al., 2012). Customer experiences assist potential customers in making purchasing choices and improving social commerce's integrity (Park et al., 2007). Furthermore, confidence in online commerce grows as a result of emotional interactions between consumers (Leong et al., 2020). Consumers' sharing of their product purchase experiences leads to excellent opinions of social commerce products and services by potential customers (Abdullah et al., 2022; Alnoor et al., 2022; Lal, 2017). According to Liang et al. (2011), online social support influences customers' inclinations to engage in social commerce. Hence, social support motivates customers to make excellent and informed purchase decisions. As a result, informational and emotional support will have fantastic attitudes regarding social engagement. As a result, we proposed:

H8: More social support found on social commerce platforms help customers to perceive lower levels of risk in using such platforms.

Relationship Between eWOM and Perceived Risk

According to rational choice theory, customers entertainment based on the opinion leaders in social commerce platforms. Customers' intentions are influenced by the comments and reviews of previous customers, which is called eWOM (Zainal et al., 2017). In social commerce, consumer attitude toward eWOM is a marginally important factor determining customers' intentions (Xu, 2014). eWOM likely affects customers' perceptions of perceived risk of ethical violations. eWOM has significantly impact customer attitudes toward online commerce (Ismagilova et al., 2021; Wu & Wang, 2011). Individuals having a good attitude toward eWOM are likely to be willing to participate in social commerce and purchase goods and services (Ali et al., 2020). eWOM would impact users' desire to purchase online. For instance, Fu et al. (2015) observed that positive sentiments regarding eWOM encouraged customers depend on eWOM as a source of online purchases. Similarly, Chu (2011) discovered that excellent sentiments regarding Facebook might lead to more excellent positive attitudes toward social media and advertising. Therefore, this research argues that:

H9: Positive attitude to and participation in electronic WOM by the customers decreases perceived risk of using social commerce platforms.

Relationship Between Perceived Risk and Ethics of Social Commerce

Despite the apparent advantages of online purchasing, many customers still hesitate to acquire items or services in web-based marketplaces because of the perceived risk of ethical violations for online commerce (Bhatnagar & Ghose, 2004; Chang & Chen, 2008; Cho et al.,

2014). Literature has demonstrated that the perceived risk decreases the propensity to implement social commerce purchases (Bauer et al., 2006). The possibility of loss to the customer is affected by the absence of knowledge and experience in online shopping. Increasing people's sense of risk reduces the willingness to close the deal. Psychologically, customers are concerned about ethical violations of rules and procedures by online commerce companies (Chen et al., 2018; Mitchell, 1999). Hence, perceived risk is regarded as the key hurdle in social commerce purchase choices (Forsythe & Shi, 2003). Prior research found that personal economic risk (Hirunyawipada & Paswan, 2006), perceived product risk (Tzavlopoulos et al., 2019), perceived privacy risk (Mathew et al., 2021), and related to perceived risk (Hsieh & Tsao, 2014) had a negative influence on social commerce (Forsythe & Shi, 2003; Vos et al., 2014). Furthermore, Ye (2004) discovered delivery risk deters online purchases. Um (2019) investigate the effect of social risk on purchase intent. Social risks have a negative impact on online shopping intentions. According to Zhang et al. (2012), sale risk has a detrimental influence on customer purchasing choices. Based on the above explanation, we hypothesize that:

H10: Perceived risk of ethical violations on social commerce platforms significantly influence perception of ethics on social commerce platforms.

The Mediating Role of Perceived Risk

Difficulties in evaluating products and services online increase the risk of ethical violations. Thus, the issue of consumer protection over the Internet weakens. Moreover, there are more risks to customers in online commerce compared to physical shopping. Poor provision of tangible indicators of product quality in online purchases and a lack of interaction would enhance the negative perception of ethics of social commerce platforms (Bölen, 2020; Merhi et al., 2020). Furthermore, security and privacy are particularly significant and effective in consumers' purchase choices (Laroche et al., 2005; San Martín & Camarero, 2009). The perceived risks of social commerce include many components. For example, technical, financial, physiological, personal, emotional, and mental risks. The mentioned risks pose a huge danger to consumers while buying online (Hirunyawipada & Paswan, 2006). Perceived risk has an important role in understanding consumer behavior and purchasing decisions. Previous research found that perceived risk lowered customer desire to the online purchase (San Martín & Camarero, 2009). Previous research in online commerce has investigated the negative influence of perceived risk on virtual customer behavior (Glover & Benbasat, 2010). In social commerce, social media has enabled users to communicate with previous customers in order to mitigate the perceived risk of ethical violations. As a result, consumer behaviour impacted by the culture, ideas, and experiences of other customers. As a consequence, perceived risk in social commerce is an indicator of high trustworthy for online commerce companies (Featherman & Hajli, 2016). Social commerce models reveal the importance of trust and risk to assess the behavior of social media users and reduce online ethical violations (Hajli, 2014; Korea & Park, 2013; Liang et al., 2011). Furthermore, prior research contends that lowering perceived risk promotes purchase processes on social commerce platforms. Hence, lowering perceived risk helps in increasing consumer confidence in social commerce platforms (Chang & Chen, 2008; Marakanon & Panjakajornsak, 2017). Figure 1. illustrated conceptual framework.

H11: Perceived risk of ethical violation mediates the relationship between predictors and outcome variables.

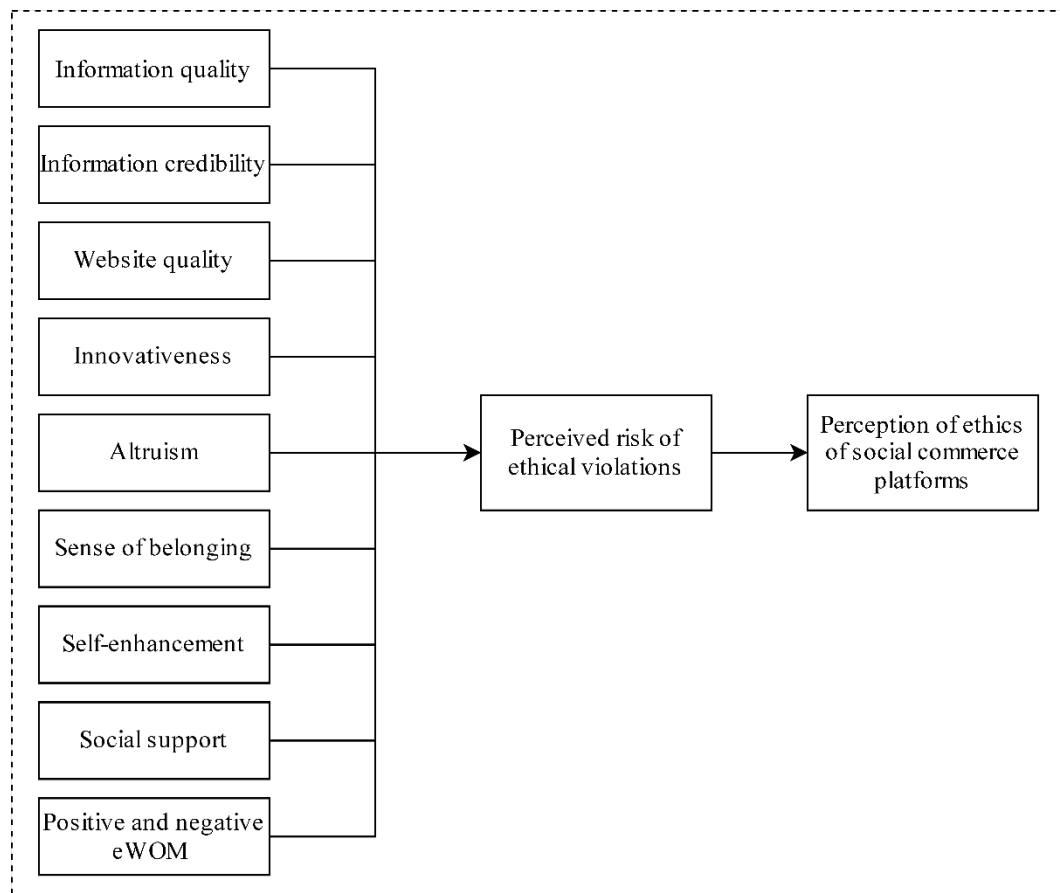


Figure 1. Conceptual framework

Methodology

Sample Size and Measurements

The study population is the users of social commerce in rural communities who have experience purchasing online using social media platforms such as Instagram, Twitter, Facebook, etc. Because of the difficulty in determining the numbers of social commerce users, a non-probability sampling technique was adopted. Similar to Leong et al. (2020), data was collected from five states in Malaysia which are Kedah, Perlis, Perak, Kelantan, and Terengganu. Besides, data were collected from 12 cities in Turkey: Hayriye, Çakırlar, Harbiye, Denizciler, Mordoğan, Cimilli, Limonlu, Selimiye, Marmaris, Dalyan, Ayvalı, Kumbağ and Altıntaş. The cities mentioned in Turkey and Malaysia constitute the largest proportion of social commerce users in rural communities. The reason for conducting the study in Malaysia and Turkey is most of the studies focused on a single country without consideration of the cultural differences between the countries (e.g., Alnoor et al., 2022; Hew et al., 2019; Khaw et al., 2022). The issue of generalizing the results to other countries is still a concern that needs to be resolved. Therefore, the present study opens new horizons for understanding the European and Asian contexts on the basis of an investigation into the ethics of social commerce platforms for rural communities. The literature recommends comparing more than two countries in the context of social commerce. Moreover, the country presents a challenge to literature because such an issue is linked to cultural contexts. It is interesting to analyze the multiple cultural variables that influence the perception of ethics of social commerce platforms. The content validity was confirmed by conducting a preliminary survey of three academic experts in the field of information systems to verify the content validity. Minor modifications have been made. Hence, 20 participants in a large shopping center were targeted. Cronbach's alpha results exceeded 0.70 which indicates adequate construct reliability. The survey was conducted for

two months on participants in Malaysia and Turkey. This study used the market intercept method similar to the previous literature (e.g., Alnoor et al., 2022; Khaw et al., 2022). A filtering question of “Have you ever purchased on social media” was asked to verify that respondents had online purchasing experience before they were recruited.

A total of 500 questionnaires were distributed to each of the social commerce users in Malaysia and Turkey. There were 31 incomplete questionnaires in Malaysia and 17 in Turkey. In this context, the final sample size for Malaysia was 469 and 483 for Turkey. This sample size meets the recommended minimum recommended by Hair et al. (2017) whereby the sample size should be ten times the largest number of formative indicators used in a construct measurement. For Malaysia, the demographics of the respondents include 53% males and 47% females. In addition, 57% of the respondents were aged 15-24 years, 24% were 25-34 years old, 8% were 35-44 years old, 6% were 45-54 years old, and 5% were 55 and 64 years old. 68% of them are unmarried and 32% are married. Among the educational levels, 42% had a diploma, 46% had a bachelor's degree, 11% had a master's degree, and 1% had other qualifications. As for the monthly income, 44% of the respondents got a thousand or less, 29% got between a thousand and 3 thousand, 18% got between 3 and 5 thousand, and 9% got more than 5 thousand in a month. For Turkey, the demographics of the respondents include 49% males and 51% females. In addition, 51% of the respondents were aged 15-24 years, 19% were 25-34 years old, 13% were 35-44 years old, 9% were 45-54 years old, and 8% were 55 and 64 years old. 70% of them are unmarried and 30% are married. Of educational levels, 36% had a diploma, 44% had a bachelor's degree, and 20% had a master's degree. As for the monthly income, 39% of the respondents got a thousand or less, 32% got between a thousand and 3 thousand, 24% got between 3 and 5 thousand, and 5% got more than 5 thousand in a month.

A 5-point Likert scale was used from "strongly agree (5)" to "strongly disagree (1)". Adoption of the 5-point Likert scale is to reduce respondents' confusion about completing the questionnaire. In order to maintain the content validity and construction, the items of the questionnaire were adapted. Information quality was measured with 6 items and information credibility was measured with 4 items adapted from (Filieri et al., 2018). Website quality with 8 items adapted from Liang et al. (2011). Innovativeness is measured using 4 items revised by Sun et al. (2006). Altruism is gauged using 4 items that were revised by Shiau and Chau (2015). A sense of belonging and self-enhancement were measured with 3 and 4 items respectively by Chu et al. (2019). Social support was measured with 4 items adapted from Khaw et al. (2022). Positive and negative eWOM was adapted 9 items from Hennig-Thurau et al. (2004). For the perceived risk of ethical violations, this study adapted 3 items of Limbu et al. (2012)'s work. Finally, this study adapted 13 items from Roman (2007) in order to measure perception of ethics of social commerce platforms.

Statistical Approach

In order to investigate the in-depth perception of ethics of social commerce platforms for the Malaysian and Turkish context Structural Equation Modeling (SEM) was adopted. SEM is a second-generation statistical technology widely used to capture the linear relationship between constructs (Hair et al., 2017). This study adopted SmartPLS software to capture linear relationships between variables. However, the common issue of bias remains and needs to be resolved. To address the common issue of bias, Harman's one-factor test was adopted to examine the common bias method. The results confirm the first factor representing 30% of the variance. In this context, the variance was less than 50%. Therefore, CMB is not a concern in this study (Khaw et al., 2022). As mentioned in the introduction, the issue of classifying customers on the basis of the perception of ethics of social commerce platforms is a complex issue that needs to be resolved. MCDM methods deal with the complex issues of ranking alternatives and assign weight to criteria. Moreover, there are two approaches to MCDM

(Krishnan et al., 2021). The first is to assign the weight, and the second is to rank the alternatives. For weight methods, there are many types, such as Best Worst Method (BWM), Analytic hierarchy process (AHP), Analytic network process (ANP), and Fuzzy Weighted with Zero Inconsistency (FWZIC) (Alsalem et al., 2022). However, the BWM method is commonly used to assign weight to criteria, and many scholars support the use of such a technique Liang et al. (2021). The literature has adopted many methods such as VIKOR, MULTIMOORA, and Fuzzy Decision by Opinion Score Method (FDOSM) to rank the alternatives. Nevertheless, the VIKOR method has been confirmed to outperform existing MCDM ranking techniques (Khaw et al., 2021). The BWM method includes several steps that can be summarized as follows.

Step 1. Determine a set of decision criteria. This step includes defining criteria C1, C2, ..., Cn. The current study adopted the conceptual model variables as criteria for the perception of ethics of social commerce platforms. **Step 2.** Determine the best and worst criteria. The best criteria represent the most desirable criteria. However, the worst criterion is the less important for the decision maker. This step includes determining the best and worst criteria, depending on the decision-maker's perspective. Three experts from academics and practitioners in the field of social commerce ethics were selected to determine the best and worst criteria. **Step 3.** Conduct a pairwise comparison between the best criterion and the other criteria. **Step 4.** Conduct a pairwise comparison between the worst criterion and the other criteria. Steps 3 and 4 include determining the best and worst criteria over all other criteria. The expert should choose a value from 1 to 9 to represent the importance of the worst and best criterion over other criteria. **Step 5.** Elicit the optimal weights ($W^*1, W^*2, \dots, W^*n$). The optimal weight for the criteria is the one where, for each pair of W_B/W_j and W_j/W_w , we have $W_B/W_j = a_{Bj}$ and $W_j/W_w = a_{jw}$.

To fulfil these conditions for all j , we should find a solution where the maximum absolute differences

$$\left| \frac{W_B}{W_j} - a_{Bj} \right| \text{ and } \left| \frac{W_j}{W_w} - a_{jw} \right|$$

for all j are minimized. Considering the non-negativity and sum condition for the weights, the following problem is created:

$$\min \max_j \left\{ \left| \frac{W_B}{W_j} - a_{Bj} \right|, \left| \frac{W_j}{W_w} - a_{jw} \right| \right\}$$

$$W_j \geq 0, \text{ for all } j$$

$$\sum_j W_j = 1$$

Problem the above can be transferred to following problem:

$$\begin{aligned} \min \quad & \xi \\ \text{s.t.} \quad & \end{aligned}$$

$$\begin{aligned} \left| \frac{W_B}{W_j} - a_{Bj} \right| &\leq \xi, \text{ for all } j \\ \left| \frac{W_j}{W_w} - a_{jw} \right| &\leq \xi, \text{ for all } j \end{aligned}$$

$$\sum_j W_j = 1$$

$$W_j \geq 0, \text{ for all } j$$

By solving last problem the optimal weights ($w^*1; w^*2; \dots; w^*n$) and ξ are obtained.

The value for ξ^* reflects the outcomes' reliability, depending on the extent of consistency in the comparisons. A value close to zero represents a high consistency and thus a high reliability. Then, the consistency ratio is calculated using ξ^* and the corresponding consistency index as follows:

$$\text{Consistency Ratio} = \frac{\xi^*}{\text{Consistency Index}}$$

For the benchmarking of social commerce customers based on the perception of ethics of social commerce platforms, this study adopted the VIKOR Method. The following steps describe the customer ranking process.

Step 1. Identify the best f^*i and worst f^-i values of all criterion functions, $i = 1; 2; \dots; n$. If the i th function represents a benefit, then

$$f_i^* = \max_j f_{ij}, f_i^- = \min_j f_{ij}$$

The weights for each criterion are computed based on the BWM method. A set of weights $w = w_1, w_2, w_3, \dots, w_j, \dots, w_n$ from the decision maker is accommodated in the DM; this set is equal to 1. The resulting matrix can also be computed as demonstrated in following equation.

$$WM = w_i * \frac{f^*i - f_{ij}}{f^*i - f^-i}$$

This process will produce a weighted matrix as follows:

$$\begin{bmatrix} w_1(f^*1 - f_{11})/(f^*1 - f^-1) & w_2(f^*2 - f_{12})/(f^*2 - f^-2) & \dots & w_i(f^*i - f_{ij})/(f^*i - f^-i) \\ w_1(f^*1 - f_{21})/(f^*1 - f^-1) & w_2(f^*2 - f_{22})/(f^*2 - f^-2) & \dots & w_i(f^*i - f_{ij})/(f^*i - f^-i) \\ \vdots & \vdots & \vdots & \vdots \\ w_1(f^*1 - f_{31})/(f^*1 - f^-1) & w_2(f^*2 - f_{32})/(f^*2 - f^-2) & \dots & w_i(f^*i - f_{ij})/(f^*i - f^-i) \end{bmatrix}$$

Step 2. Compute the values S_j and R_j , $j=1,2,3,\dots,J$, $i=1,2,3,\dots,n$ by using the following equations:

$$S_j = \sum_{i=1}^n w_i * \frac{f^*i - f_{ij}}{f^*i - f^-i}$$

$$R_j = \max_i w_i * \frac{f^*i - f_{ij}}{f^*i - f^-i}$$

where w_i indicates the criterion weights expressing their relative importance.

Step 3. Compute the values Q_j , $j = (1,2,\dots,J)$ by the following equations:

$$Q_j = \frac{v(S_j - S^*)}{S^- - S^*} + \frac{(1 - v)(R_j - R^*)}{R^- - R^*}$$

where

$$S^* = \min_j S_j, S^- = \max_j S_j$$

$$R^* = \min_j R_j, R^- = \max_j R_j$$

v is introduced as the weight of the strategy of ‘the majority of criteria’ (or ‘the maximum group utility’); here, $v = 0.5$.

Step 4. The set of alternatives can now be ranked by sorting the values S , R and Q in ascending order. The lowest value indicates the optimal performance.

Step 5. Propose as a compromise solution the alternative (a'), which is ranked the best by the measure Q (minimum) if the following two conditions are satisfied:

C1. ‘Acceptable advantage’:

$$Q(a'') - Q(a') \geq DQ$$

where (a'') is the alternative at second position in the ranking list by Q , $DQ = 1/(J-1)$, J is the number of alternatives.

Results and Benchmarking Process

Structural Equation Modeling

To test the proposed hypotheses, the SmartPLS 3.3.3 method was used for structural equation modeling (SEM). (Ringle, Wendy & Baker, 2015). Before starting with the finding of the hypothesis test, the validity of the convergent and discriminant tests was established. For

convergent feasibility testing, factor loading (FL), average variance extracted (AVE), composite reliability (CR), and Cronbach's alpha (CA) were utilised. AVE must surpass 0.5, factor loading should be more than 0.7, CR, and CA must be larger 0.7 (Chen, 2010; Hare et al., 2007). For the Malaysia model, the results in Table 1 indicate that (WQ1, WQ2, WQ5, WQ6, WQ8, eWOM 1, eWOM 2, PE4, PE5, PE8, PE10, PE11, PE12, and PE13) were removed due to their values have been recorded less than 0.7. However, the rest items were more than 0.7. For CR, and CA were above 0.7. Besides, AVE was more than 0.5. Hence, there is no concern regarding convergent validity values. For the Turkey model, convergent validity results confirmed (IQ1, IC1, WQ4, WQ6, WQ8, AL4, SE1, eWOM9, PE1, PE2, PE3, PE4, PE5, PE7, PE10, PE11, PE12, PE13) were removed due to their values have been verified fewer than 0.7. However, the remainder items were more than 0.7. For CR, and CA were above 0.7 and AVE was more than 0.5. In this context, assess construction measurement of Turkey's model variables has sufficient of convergent validity.

Table 1. Convergent validity and model fit for Malaysian and Turkan customers

Malaysia model					Turkey model				
Items	FL	CA	CR	AVE	Items	FL	CA	CR	AVE
IQ1	0.746	0.855	0.892	0.578	IQ1	0.692	0.855	0.892	0.578
IQ2	0.770				IQ2	0.788			
IQ3	0.759				IQ3	0.787			
IQ4	0.735				IQ4	0.740			
IQ5	0.768				IQ5	0.713			
IQ6	0.784	0.745	0.838	0.565	IQ6	0.707	0.745	0.838	0.565
IC1	0.714				IC1	0.682			
IC2	0.761				IC2	0.825			
IC3	0.777				IC3	0.831			
IC4	0.753				IC4	0.788			
WQ1	0.686	0.846	0.882	0.583	WQ1	0.805	0.846	0.882	0.583
WQ2	0.617				WQ2	0.801			
WQ3	0.742				WQ3	0.768			
WQ4	0.775				WQ4	0.673			
WQ5	0.652				WQ5	0.775			
WQ6	0.699	0.750	0.842	0.571	WQ6	0.674	0.750	0.842	0.571
WQ7	0.739				WQ7	0.732			
WQ8	0.636				WQ8	0.598			
IN1	0.745				IN1	0.846			
IN2	0.782				IN2	0.823			
IN3	0.790	0.840	0.892	0.674	IN3	0.729	0.840	0.892	0.674
IN4	0.704				IN4	0.764			
AL1	0.798				AL1	0.811			
AL2	0.806				AL2	0.821			
AL3	0.855				AL3	0.776			
AL4	0.823	0.745	0.837	0.634	AL4	0.686	0.745	0.837	0.634
SB1	0.781				SB1	0.878			
SB2	0.787				SB2	0.857			
SB3	0.905				SB3	0.842			
SE1	0.807				SE1	0.652			
SE2	0.890	0.842	0.893	0.677	SE2	0.845	0.842	0.893	0.677
SE3	0.792				SE3	0.848			
SE4	0.799				SE4	0.784			
SS1	0.796				SS1	0.778			
SS2	0.870				SS2	0.850			
SS3	0.879	0.876	0.915	0.729	SS3	0.823	0.876	0.915	0.729
SS4	0.866				SS4	0.796			
eWOM 1	0.692				eWOM 1	0.701			
eWOM 2	0.750				eWOM 2	0.780			
eWOM 3	0.536				eWOM 3	0.754			

Malaysia model					Turkey model				
Items	FL	CA	CR	AVE	Items	FL	CA	CR	AVE
eWOM 4	0.785				eWOM 4	0.753			
eWOM 5	0.769				eWOM 5	0.723			
eWOM 6	0.804				eWOM 6	0.718			
eWOM 7	0.779				eWOM 7	0.802			
eWOM 8	0.756				eWOM 8	0.778			
eWOM 9	0.734				eWOM 9	0.680			
PR1	0.838				PR1	0.808			
PR2	0.874	0.823	0.894	0.739	PR2	0.853	0.823	0.894	0.739
PR3	0.865				PR3	0.809			
PE1	0.766				PE1	0.657			
PE2	0.757				PE2	0.682			
PE3	0.741				PE3	0.488			
PE4	0.265				PE4	0.437			
PE5	0.272				PE5	0.580			
PE6	0.701				PE6	0.783			
PE7	0.749	0.801	0.835	0.596	PE7	0.624	0.801	0.835	0.596
PE8	0.611				PE8	0.780			
PE9	0.748				PE9	0.740			
PE10	0.536				PE10	0.607			
PE11	0.566				PE11	0.004			
PE12	0.566				PE12	0.081			
PE13	0.522				PE13	0.078			

To assess discriminant validity there are three main methods for assessing discriminant validity: the Fornell and Larcker, heterotrait-monotrait ratio of correlations (HTMT), and cross-loadings method. Many academics consider the HTMT method to be more accurate. Furthermore, the official website of the SmartPLS software recommends the adoption of the HTMT method to assess discriminant validity. Table 2. shows discriminant validity results for the Malaysia and Turkey model.

Table 2. Convergent validity

Variables	1	2	3	4	5	6	7	8	9	10	11
Malaysia model											
1. Altruism											
2. Information Credibility	0.384										
3. Information Quality	0.378	0.758									
4. Innovativeness	0.752	0.690	0.662								
5. Perceived risk	0.558	0.510	0.508	0.675							
6. Perception of ethics	0.547	0.479	0.495	0.608	0.689						
7. eWOM	0.861	0.450	0.452	0.750	0.718	0.596					
8. Self-enhancement	0.756	0.416	0.441	0.691	0.733	0.551	0.506				
9. Sense of belonging	0.745	0.422	0.451	0.756	0.668	0.578	0.773	0.745			
10. Social Support	0.604	0.410	0.419	0.624	0.565	0.515	0.503	0.768	0.709		
11. Website Quality	0.453	0.802	0.779	0.738	0.651	0.468	0.535	0.468	0.502	0.394	
Turkey model											
1. Altruism											
2. Information Credibility	0.740										
3. Information Quality	0.772	0.759									
4. Innovativeness	0.795	0.731	0.738								
5. Perceived risk	0.751	0.789	0.738	0.786							
6. Perception of ethics	0.707	0.733	0.672	0.729	0.756						
7. eWOM	0.794	0.761	0.706	0.787	0.019	0.724					
8. Self-enhancement	0.750	0.758	0.713	0.709	0.700	0.650	0.732				
9. Sense of belonging	0.756	0.779	0.671	0.733	0.721	0.656	0.732	0.770			
10. Social Support	0.794	0.763	0.730	0.700	0.768	0.687	0.784	0.797	0.719		
11. Website Quality	0.784	0.784	0.718	0.723	0.781	0.679	0.769	0.735	0.797	0.726	

The HTMT ratio of correlations was adopted to assess the discriminant validity. According to Henseler et al. (2015) the HTMT 0.85 is suitable threshold based on the HTMT criterion of discriminant validity. Table 2. shows the HTMT values and all constructs for the Malaysia and Turkey model have HTMT below 0.85. Hence, the constructs for this study passed the minimum requirement of the discriminant validity test through HTMT. According to the assessment of measurement model, the model of this study can proceed the assessment of structural model phase.

The structural model describes the causal relations between various constructs (independent, moderating, control, and dependent variables) in order to test the formulated hypotheses of the study. Hair et al. (2017) indicated path analysis (analyzed using a one-tail test) including the beta coefficient, standard error, t-value, p-value, f^2 , R^2 , and Q^2 are important criterion for assessing the structural model in PLS-SEM were used and reported Figure 2.

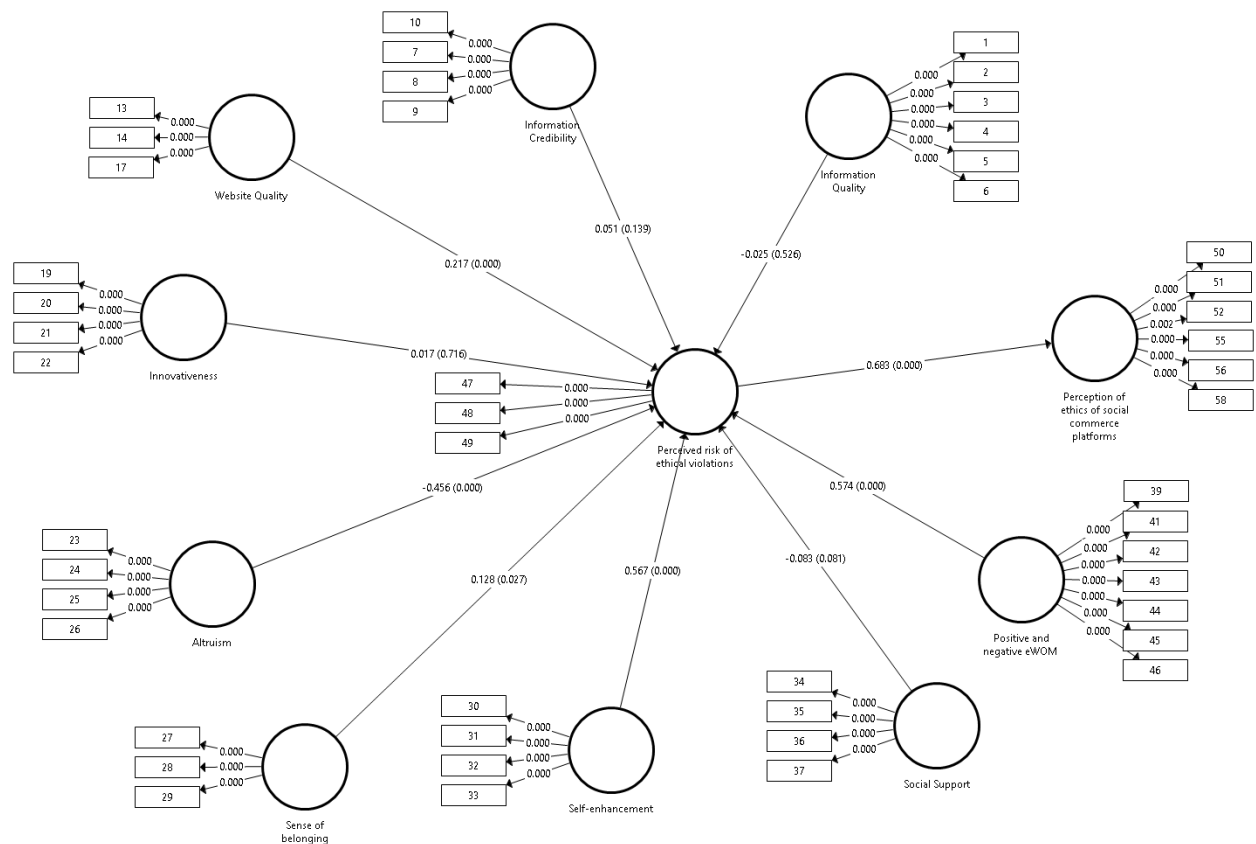


Figure 2. Structural model for Malaysia model

For Malaysia model Table 3. Illustrated 19 direct and indirect hypotheses. For the hypotheses testing, parameter estimates for statistical significance together with the coefficient values were examined through a bootstrapping method based on PLS-SEM (Hair et al., 2017). The bootstrapping method with 1000 (one-tailed, 0.05; 469 case data) bootstrap re-sampling and bias-corrected confidence intervals were utilized to examine the significance of the path coefficients. The t-value for the one-tailed test must be equal to or greater than 1.645 at a 5 % significance level.

Table 3. Structural model assessment for the Malaysia model

Path	(O)	(M)	(STDEV)	T Statistics	P Values	Result
Direct path						
AL -> PR	0.456	0.453	0.062	7.324	0.000	Supported
IC -> PR	0.051	0.057	0.035	1.483	0.139	Unsupported
IQ -> PR	-0.025	-0.026	0.040	0.635	0.526	Unsupported
IN -> PR	0.017	0.014	0.047	0.363	0.716	Unsupported
PR -> PE	0.683	0.686	0.022	30.73	0.000	Supported
eWOM -> PR	0.574	0.574	0.054	10.73	0.000	Supported
SE -> PR	0.567	0.565	0.064	8.837	0.000	Supported
SB -> PR	0.128	0.128	0.058	2.222	0.027	Supported
SS -> PR	-0.083	-0.083	0.048	1.751	0.081	Unsupported
WQ -> PR	0.217	0.215	0.034	6.345	0.000	Supported
Indirect path						
AL -> PR -> PE	0.311	0.311	0.042	7.503	0.000	Supported
IC -> PR -> PE	0.035	0.039	0.024	1.473	0.141	Unsupported
IQ -> PR -> PE	-0.017	-0.018	0.027	0.631	0.528	Unsupported
IN -> PR -> PE	0.012	0.010	0.032	0.361	0.719	Unsupported
eWOM -> PR -> PE	0.392	0.394	0.040	9.887	0.000	Supported
SE -> PR -> PE	0.387	0.388	0.043	8.976	0.000	Supported
SB -> PR -> PE	0.087	0.088	0.039	2.230	0.026	Supported
SS -> PR -> PE	-0.057	-0.057	0.033	1.747	0.081	Unsupported
WQ -> PR -> PE	0.148	0.148	0.024	6.113	0.000	Supported

Note: AL= Altruism, IC= Information credibility, IQ= Information quality, IN= Innovativeness, eWOM= Electronic word of mouth, SE= Self-enhancement, SB= Sense of belonging, SS= Social support, WQ= Website quality, PR= Perceived risk of ethical violations, PE= Perception of ethics of social commerce platforms, O= Original sample, M= Sample mean, STDEV= Standard deviation

The results for Malaysia model indicate the relationship between altruism, positive and negative eWOM, self-enhancement, sense of belonging, website quality, and perceived risk of ethical violations is positive and significant ($\beta = 0.456$, $p < 0.05$; $\beta = 0.574$, $p < 0.05$; $\beta = 0.567$, $p < 0.05$; $\beta = 0.128$, $p < 0.05$; $\beta = 0.217$, $p < 0.05$). Thus, hypotheses 3, 5, 6 and 7 are supported. In addition, the relationship between perceived risk of ethical violations and perception of ethics of social commerce platforms is significant and positive ($\beta = 0.683$, $p < 0.05$). However, the relationships between information credibility, information quality, innovativeness, social support, and perceived risk of ethical violations are not statistically significant. Furthermore, hypotheses 1, 2, 4, and 8 are unsupported. The results demonstrate the perceived risk of ethical violations partially mediates the relationship between the independent variables and the perception of ethics of social commerce platforms. In this context, the perceived risk of ethical violations mediates the relationship between altruism, positive and negative eWOM, sense of belonging, self-enhancement, website quality, and perception of ethics of social commerce platforms ($\beta = 0.311$, $p < 0.05$; $\beta = 0.392$, $p < 0.05$; $\beta = 0.387$, $p < 0.05$; $\beta = 0.087$, $p < 0.05$; $\beta = 0.148$, $p < 0.05$). Besides, the relationships between information quality, information credibility, innovativeness, social support, and perception of ethics of social commerce platforms through the mediator variable perceived risk of ethical violations are not statistically significant and unsupported in Malaysia context. To shed light on the similarities and differences between the Turkish and Malaysian context, Figure 3. Exhibited the results of hypothesis testing for the Turkey model.

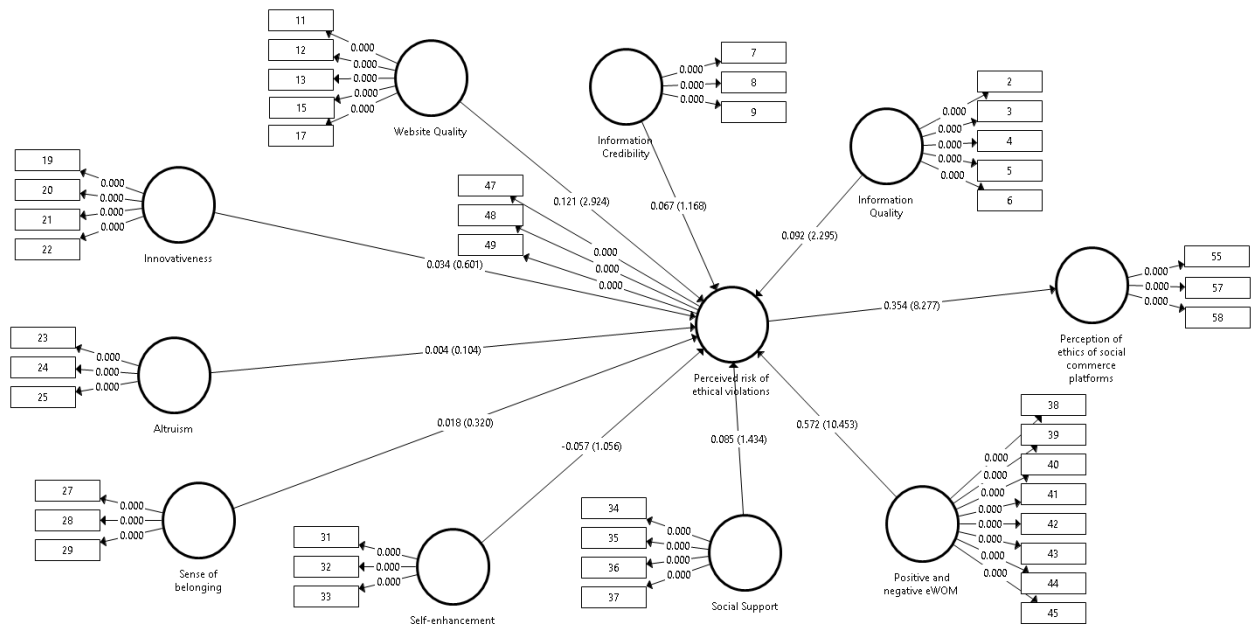


Figure 3. Structural model for Turkey model

For Turkey model Table 4. Illustrated 19 direct and indirect hypotheses. The direct path results indicate the relationships between information quality, positive and negative eWOM, web site quality, and perceived risk of ethical violations are significant and positive ($\beta = 0.092$, $p < 0.05$; $\beta = 0.572$, $p < 0.05$; $\beta = 0.121$, $p < 0.05$). However, the relationships between information credibility, innovativeness, altruism, sense of belonging, self-enhancement, social support, and perceived risk of ethical violations are unsupported. Additionally, there is a positive and significant relationship between perceived risk of ethical violations and perception of ethics of social commerce platforms ($\beta = 0.354$, $p < 0.05$).

Table 4. Structural model assessment for the Turkey model

Path	(O)	(M)	(STDEV)	T Statistics	P Values	Result
Direct path						
AL -> PR	0.004	0.006	0.042	0.104	0.917	Unsupported
IC -> PR	0.067	0.064	0.057	1.168	0.244	Unsupported
IQ -> PR	0.092	0.096	0.040	2.295	0.022	Supported
IN -> PR	0.034	0.030	0.056	0.601	0.548	Unsupported
PR -> PE	0.354	0.357	0.043	8.277	0.000	Supported
eWOM -> PR	0.572	0.571	0.055	10.453	0.000	Supported
SE -> PR	-0.057	-0.059	0.054	1.056	0.292	Unsupported
SB -> PR	0.018	0.022	0.057	0.320	0.749	Unsupported
SS -> PR	0.085	0.087	0.059	1.434	0.152	Unsupported
WQ -> PR	0.121	0.120	0.041	2.924	0.004	Supported
Indirect path						
AL -> PR -> PE	0.002	0.002	0.015	0.102	0.918	Unsupported
IC -> PR -> PE	0.024	0.023	0.021	1.136	0.256	Unsupported
IQ -> PR -> PE	0.033	0.034	0.016	2.095	0.037	Supported
IN -> PR -> PE	0.012	0.011	0.020	0.592	0.554	Unsupported
eWOM -> PR -> PE	0.203	0.204	0.031	6.555	0.000	Supported
SE -> PR -> PE	-0.020	-0.022	0.020	1.012	0.312	Unsupported
SB -> PR -> PE	0.006	0.008	0.021	0.311	0.756	Unsupported
SS -> PR -> PE	0.030	0.031	0.022	1.389	0.165	Unsupported
WQ -> PR -> PE	0.043	0.043	0.016	2.661	0.008	Supported

Note: AL= Altruism, IC= Information credibility, IQ= Information quality, IN= Innovativeness, eWOM= Electronic word of mouth, SE= Self-enhancement, SB= Sense of

belonging, SS= Social support, WQ= Website quality, PR= Perceived risk of ethical violations, PE= Perception of ethics of social commerce platforms, O= Original sample, M= Sample mean, STDEV= Standard deviation

Regarding the mediating effect of perceived risk of ethical violations, the results demonstrate perceived risk has a partially mediating role for the relationship between the independent variables and the perception of ethics of social commerce platforms in the Turkish context. Hence, there are positive and significant relationships between information quality, positive and negative eWOM, web site quality, and perception of ethics of social commerce platforms through the mediator variable perceived risk of ethical violations ($\beta = 0.033$, $p < 0.05$; $\beta = 0.203$, $p < 0.05$; $\beta = 0.043$, $p < 0.05$). Nevertheless, the relationships between information credibility, innovativeness, altruism, sense of belonging, self-enhancement, social support, and perception of ethics of social commerce platforms through the mediator variable perceived risk of ethical violations are unsupported. The SEM results provided insight into the causal relationships between study variables to provide academics and practitioners an in-depth understanding of the most important determinants of the perception of ethics of social commerce platforms in the Turkish and Malaysian context. However, MCDM methods offer a solution to the benchmarking process to provide insight to practitioners and academics by identifying customers with a high perception of the ethics of social commerce platforms. Furthermore, firms can enhance customers that have high perceptions as opinion leaders of social commerce platforms. However, social commerce platforms can treat the worst-ranked customers with caution and strive to turn a negative perception into a positive towards the ethics of such platforms. In this context, the following section describes the benchmarking process for customers in the Turkish and Malaysian context.

Benchmarking Process

As previously mentioned, the BWM method adopted for assign weight criteria and such a method was integrated with VIKOR method for ranking customers based on the perception of ethics of social commerce platforms. Therefore, the BWM method was used by targeting three experts in the field of information technology and business ethics, and a questionnaire was provided to them to determine the best and worst criteria. In addition, the opinions of experts were obtained and applied. Figure 5. provide criteria weights obtained from experts.

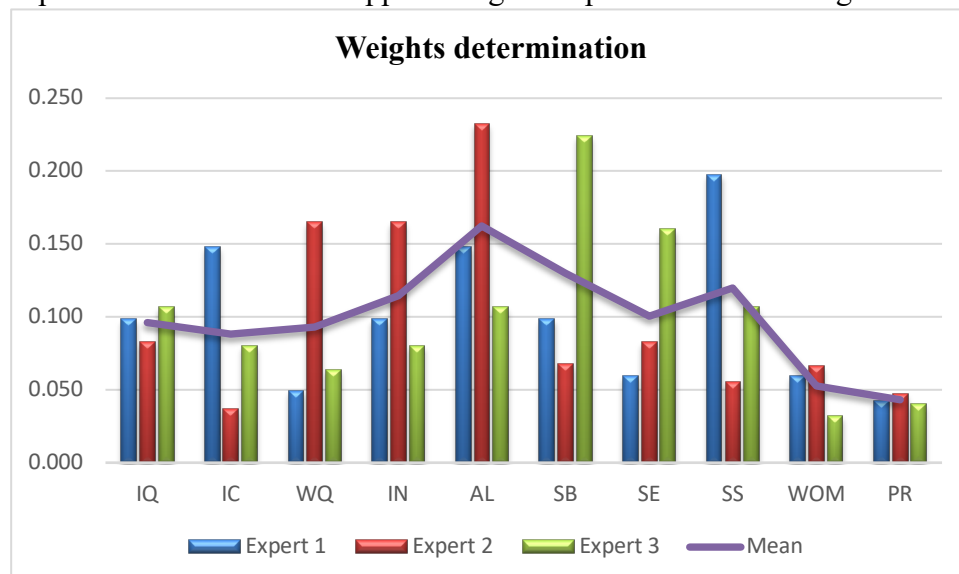


Figure 4. Weights determination utilizing BWM

The results of Figure 4 for the first expert confirm the best criterion was social support, and the worst criterion was perceived risk of ethical violations. The second expert identified

altruism as the best criterion and information credibility as the worst criterion. The third expert confirmed sense of belonging as the best criterion and positive and negative eWOM as the worst criterion. Overall, the results shown the altruism is considered the best criterion and perceived risk of ethical violations is judged the worst criterion.

This part summarizes the results of the benchmarking of social commerce platform customers for the Turkish and Malaysian context by adopting the VIKOR method. The order of customers in the Turkish context is based on the weight of criteria given by three experts. Additionally, the benchmarking was used based on the group, as there is a difference between the benchmarking of customers based on experts. The same was used in the Malaysian context by benchmarking the customers of social commerce companies based on three experts and a group for the reason mentioned in the Turkish context. The results are in the Figure 5 and 6. summarize the benchmarking of customers in the Turkish and Malaysian context.

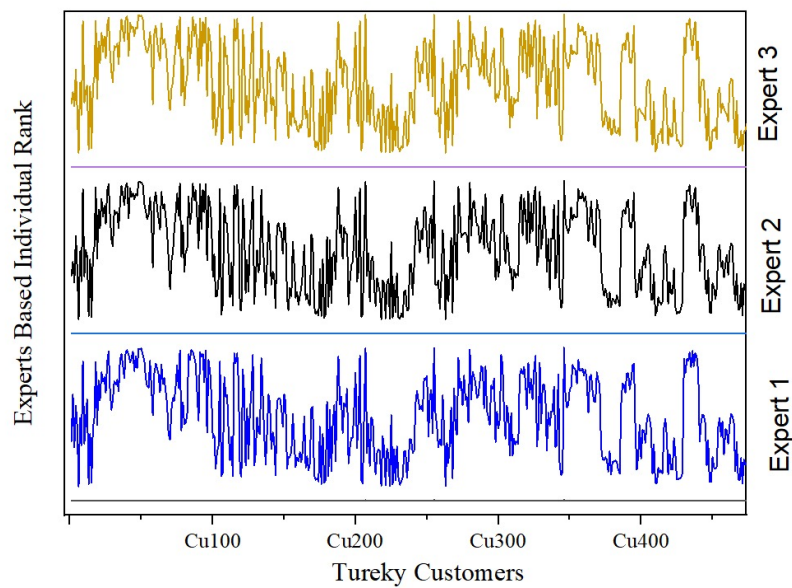


Figure 5. Benchmarking results for Turkish context

For the Turkish context, the results showed Cu6, Cu263, and Cu218 got the best rank. But Cu134, Cu272, and Cu87 got the worst rank for the first expert. Likewise, Cu6, Cu263, and Cu218 got the best rank, and Cu321, Cu433, and Cu26 got the worst rank for the second expert. However, the results of the third expert indicate Cu6, Cu263, and Cu218 got the best rank, and Cu433, Cu105, and Cu88 got the worst rank. For the group rank, the results shown Cu6, Cu263, and Cu218 got the best rank while Cu439, Cu46, and Cu86 got the worst rank, as illustrated in Figure 7.

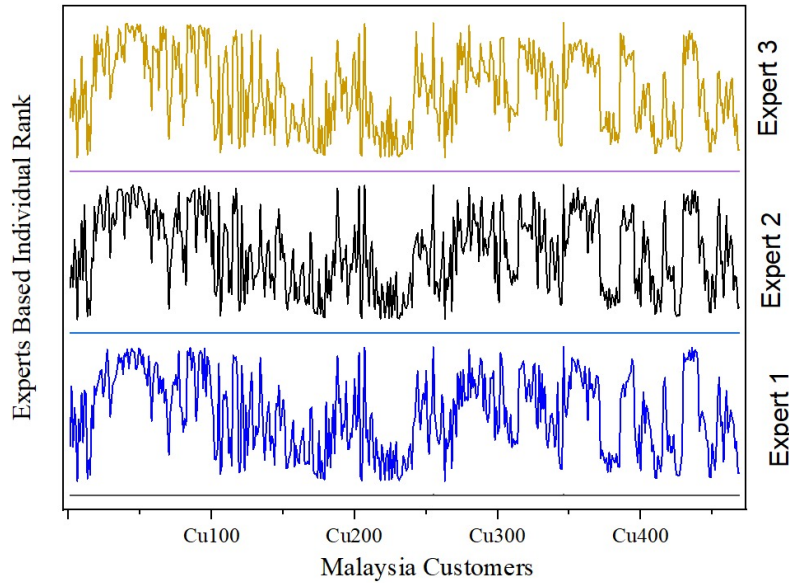


Figure 6. Benchmarking results for Malaysian context

For the Malaysian context, according to each expert's Q and Order, Cu6, Cu263, and Cu205 got the highest rank. Cu45, Cu255, and Cu346 got the worst rank, respectively, for the first expert. For the second expert, Cu6, Cu263, and Cu218 got the best rank. While Cu87, Cu438, and Cu436 got the worst rank. For the third expert, Cu6, Cu263, and Cu218 got the best rank. Cu47, Cu35, and Cu98 got the worst rank. For the group rank, Cu6, Cu263, and Cu218 got the best rank. Cu66, Cu203, and Cu87 got the worst rank, as shown in Figure 7.

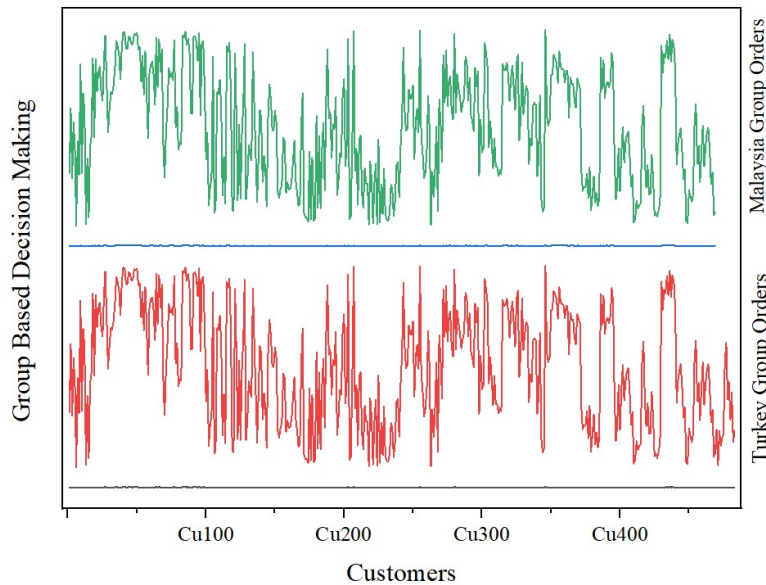


Figure 7. Benchmarking results for decision making country based

To deal with issues of generalization of results, validation is an urgent need. The validation process consists of objective validation, subject validation, sensitivity analysis, spearman's rank correlation, and comparative analysis. This study adopted the objective validation method to guarantee the order of customers for the Turkish and Malaysian context is subject to a systematic classification (Albahri et al., 2021). Objective validation method has been widely used in the context of MCDM (Krishnan et al., 2021). The objective validation method involves compiling opinion matrices to produce a unified opinion matrix and ranking

customers for the Turkish and Malaysian context within the unified opinion matrix. After sorting, customers are separated for the two contexts into three equal groups. Hence, the average of each group is obtained. Based on the comparison results, the results of the arithmetic mean of the first group must be less than or equal to the mean of the second group. Likewise, the results of the second group must be less than or equal to the results of the arithmetic mean of the third group. As shown in Table 5. in this approach, the results of ranking customers are divided into three groups. Each group consists of several customers. The mean for each group is calculated using the following equation.

$$\text{mean} = \frac{1}{n} \sum_{i=1}^n x_i,$$

Table 5. Validation results of group decision making rank

Groups	Group 1	Group 2	Group 3
Malaysian context	0.022	0.062	0.106
Turkish context	0.022	0.059	0.104

Regarding the results of validation of group decision-making for the Malaysian context, the mean in the first group is lower than the mean in the second. The mean in the second group was less than the mean in the third group. The same is for the Turkish context. The mean in the first group was less than the mean in the second group. The mean in the second group was less than the mean in the third group. Accordingly, the first group has a lower value compared to the second group, the second group has a lower value compared to the third group for the Malaysian and Turkish context. Furthermore, ranks are valid and undergoing systematic ranking for Malaysian and Turkish customers.

Discussion

This study has been conducted to determine the major factors of perceived risk of ethical violation and perception of ethics of social commerce platforms in two countries including Malaysia and Turkey. In this regard a number of hypotheses were proposed based on the literature and relevant findings were presented. We found that the quality of information is not relevant to the risk perception of ethical violation on social commerce platforms in Malaysia but were found to be more relevant in the context of Turkey. Our findings are partially in line with the earlier studies that consumers analyze the available online information to evaluate the level of perceived risk and also to avoid the risk of paying higher prices in online buying (Gu et al., 2007; Wang & Chang, 2013). Quality information help consumers to analyze different aspects of product and services and make informed decisions. This benefit consumers to lessen the risk and uncertainty associated with online buying. Our finding to this end support earlier study that high quality information help customers to make better judgement quickly and thus avoid the risk of privacy issues and illegal online access (Kim et al., 2016). For Malaysian customers the quality of online information is not much of interest because they are more concerned with the quality of website contents to make purchase decision. Relevant to quality of information is the concept of information credibility. Information credibility is largely associated with the source of information and customers judge the information credibility through other customers' opinion on product and services. Online social commerce platforms provide customers with any opportunity to share their experiences with the product. A large number of customers' reviews make the information less reliable because such reviews are more from anonymous customers (Reichelt et al., 2014; Sen, 2007). Consequently, potential customers rely less on the credibility of information in an online environment. In this regard our study argue that credibility of information is not considered as relevant risk factor by the customers in both countries because of the above stated reasons. Hence, our findings to this end align with earlier studies (e.g., Jun Liu et al., 2020; Sen, 2007; Xu et al., 2020 etc.). These

earlier studies agree that credibility of customers' review is always doubtful because of customers' hazards and confusion to use online platforms caused by lack of suitable and credible information over there. Relevant to the earlier stated two factors i.e., quality and credibility of information is the quality of website contents. This was found to be equally significant in both contexts of Malaysia and Turkey. Companies need to present themselves on social commerce platforms in a more appropriate way to attract the customers. Website of companies must be easy to access and easy to use. Our findings suggest that quality of website contents is an important determinant of perceived risk of ethical violation on social commerce platforms. Businesses can always improve the quality of website contents to reduce the risk perception. Our findings support the previous studies that websites are much critical for business success in the era of digital age as they serve an important tool of communication between customers and companies (Chen et al., 2017; Kleinlercher et al., 2018). Based on our finding, this study makes an argument that an improved quality of website invites customers' trust and confidence in online buying and mitigates the perceived risk in using social commerce platforms (Caruana, 2004). We are contended that website quality significantly influences customers' decision to use social commerce platforms due to lower level of perceived risk of ethical violation. In this regard this study compensates the earlier studies that with the growing concerns about online services and products quality, the website is important way of presenting and reducing the perceived risk (Cenfetelli et al., 2008).

In order to improve customers' online experience, companies always prefer to bring innovativeness not only to their product and services but also in their policies and procedures. We witness constantly innovativeness in online platforms where companies try to access the distant customers. This is to attract and retain the online customers. We found two different results in the two contexts. For Malaysian customers, the innovativeness in social commerce platform is sufficiently and significantly reduces the perceived risk of ethical violations on social commerce platforms and vice versa for Turkish customers. Consequently, our findings support the earlier studies that innovative attributes in terms of technological sophistication, security, service quality can boost customers confidence in online buying and thus decrease associate perceived risk (Li et al., 2021; Singh et al., 2020; Zhang & Hou, 2017). Similarly, we also argue that innovation in social commerce platforms create a positive impression which ultimately enhance customers trust, facilitate technology adoption, and reduce potential risk perception in using online social commerce platforms. For Turkish customers we did not find evidence that innovativeness in social commerce platforms reduces the perceived risk of ethical violation. This may be due to the reason that do not consider innovativeness an important factor to their online buying decision. This finding also compensates our earlier finding that Turkish customers give less consideration to online information credibility as an important factor to mitigate the perceived risk.

Altruism is an important concept in online buying decision. Altruistic individuals voluntarily offer their opinion to facilitate online purchase by the other customers. We posit that presence of altruistic individuals and altruism on social commerce platforms enrich the other customers online buying experiences and hence add them in making online purchase decision. We found partial agreement to our argument as customers in Malaysia agreed that altruism significantly reduce their perceived risk of ethical violation on social commerce platforms, whereas no such evidence was found in case of Turkish customers. Altruistic individuals offer free advice, knowledge, and suggestion to make an informed online buying decision. This is also helpful to boost customers' trust in online buying. Our finding in the context of Malaysia support earlier studies that altruistic opinion increase integrity of social commerce platforms and reduces ambiguity to use by lowering the risk of adoption to social commerce platforms (Jianfeng Liu et al., 2021; Shiau & Chau, 2015). As far as our findings in the Turkish context is concerned, we can argue that there may be absence or less presence of

altruistic individuals over social commerce platform due to which Turkish customers did not consider it as an important determinant of perceived risk of ethical violation on social commerce platforms.

Sense of belongingness is considered as an important driver to attract and retain customers in online buying. Customers develop a sense of belongingness when they seek a company fulfilling their needs in customized way and offer affordable quality products and services. Customers develop sense of belongingness over a period of time through their long-term standing online experience. Our findings support the hypothesis that more sense of belongingness helps to reduce the perceived risk of ethical violation on social commerce platforms. We found that Malaysian customers consider sense of belongingness an important determinant to reduce the perceived risk, while no such finding surfaced in case of Turkish customers. This may be due to the reason that Turkish customers may not be present on social commerce platforms for the longer period of time to sufficiently develop their sense of belongingness. Our finding in Turkish context supports the earlier argument that sense of belongingness motivates customers and significantly impact online interaction among customers which consequently results into improved online buying experience and thus customers are more intended to engage in online buying. This happens because when customers see more people in their circle to be present on social commerce platforms then this necessarily reduces the perceived risk of ethical violation on social commerce platforms (Liu et al., 2018).

Self-enhancement is another important dimension of perceived risk in online social commerce platform usage. Earlier studies argue that individuals with positive and enhanced levels of self-enhancement are happy to share their online experiences and thus help potential customers to develop positive attitude towards online products and services. Our findings suggest that Malaysian customers attach more importance to self-enhancement and consider it critical to reduce perceived risk of ethical violation on social commerce, while in case of Turkish customers we did not get support of our hypothesis. This finding is in line with our earlier finding in regard to sense of belongingness. It is argued that sense of belongingness and self-enhancement are essentially similar concepts and we put forward the same argument in support of our findings to this end. We further argue that customers with higher levels of self-enhancement and self-esteem are more likely to share their positive social commerce platform experiences which helps to reduce the perceived risk of ethical violation in social commerce platforms. This is aligned with earlier studies that customers are willing to sensationalize their thoughts and online experiences to create favorable perceptions and attain higher social status (Chung & Darke, 2006; Grange et al., 2020; Vargo et al., 2019).

Social support on social commerce platforms is considered as an important predictor of perceived risk in using online platforms. However, we did not find any evidence both in Malaysian and Turkish context to support our hypothesis in this regard. Though social support offers greater help in terms of ratings, reviews, suggestions, and information to make informed purchased decision. Online social support influence customers to incline and engage in online social commerce platforms and assist in making efficient and cost-effective online purchase decisions (Huang et al., 2020; T. P. Liang et al., 2011; Yahia et al., 2018). Though our findings to this end are contrary to earlier studies but are still considered important and ask for an in-depth investigation. One plausible explanation may be that customers did not find appropriate level of social support so as to mitigate the perceived risk of ethical violation on social commerce platforms.

Positive attitude to and participation in electronic word-of-mouth (eWOM) has always been considered as an important and significant aspect of online buying decision. Customers essentially reacts in accordance with what they encounter, and they are more expected to develop positive attitude and engage more in eWOM. Our findings in both contexts support

our argument that positive attitude to and participation in eWOM helps to lessen the perceived risk of ethical violation on social commerce platform and thus compensate earlier studies that eWOM is considered as significant to impact the customers' online buying decision (Ismagilova et al., 2021; Wu & Wang, 2011). We also favor the argument that customers who are more engaged in eWOM are more likely to make well-informed online buying decisions (Ali et al., 2020; Fu et al., 2015).

We also evaluated the impact of perceived risk of ethical violation on perception of ethics on social commerce platforms among the customers in both countries. Our findings in both contexts supported our hypothesis that perceived risk of ethical violation on social commerce platforms significantly influence customers' perceptions of ethics on these platforms. Our findings support our assumptions and are in alignment with previous studies which argue that despite of added benefits of online purchase still many customers fear online purchase due to perceived danger of financial loss, online frauds, scams etc. (Chen et al., 2018; Cho et al., 2014). Customers perceive variety of risk (e.g., product risk, delivery risk, price risk, social risk etc.) while deciding to make online purchase. Hence, we argue that perceived risk of ethical violation can be considered as a major hurdle to customers online purchase decision. We also support the argument that the more risk is perceived there is less likelihood to complete online transaction (Chen et al., 2018; L. Zhang et al., 2012). The same is true in case of our study where customers have stronger perception that the perceived risk of ethical violation sufficiently influence their perception of ethics on social commerce platforms.

In the last we determined the mediating role of perceived risk of ethical violation in relationship between the already discussed determinants (predictors) and customers' perception of ethics on social commerce platforms. We found partial mediation role of the mediator between predictors and outcome variable in both cases. For example, in case of Malaysian customers, we found perceive risk of ethical violation mediates the relationship between eWOM, sense of belongingness, self-enhancement, website quality and perception of ethics. Whereas we did not find any significant statistical evidence to support the mediating role of perceived risk of ethics violation in relationship between other predictors (information quality, information credibility, innovativeness, social support) and perception of social ethics on social commerce platforms. Similarly, in case of Turkish customers we found significant mediating role of perceived risk perception of ethics violation in relationship between predictors (information quality, positive and negative eWOM, web site quality) and perception of ethics on social commerce platforms, whereas no significant and conclusive evidence of mediating role of perceived risk of ethical violation was found in relationship between other predictors (information credibility, innovativeness, altruism, sense of belonging, self-enhancement, social support) and perception of ethics on social commerce platforms. On the basis of our findings, we argue that customers' risk perception in online buying is a multidimensional construct encompassing product quality, weaker trust, no physical visibility of products, security and privacy issue, and an absence of face-to-face interaction with sellers. All these factors constitute a risk in online buying as proclaimed in earlier studies in this regard (e.g., Bölen, 2020; Merhi et al., 2020). We further argue that perceived risk in online buying is important to understand customers' attitude and behavior towards online buying a hence significantly influences customers' purchase decision. Social commerce platforms facilitate communication between customers and there is likelihood that customers may get influenced from each other experiences. Our findings in regard to mediating role of perceived risk mostly compensate our other findings in regard to direct relationships.

Theoretical Contributions

The study offers some useful insights into customers' risk perceptions about ethical violations on social commerce platforms. Theoretically, it is important to understand that

customers residing in different countries may not have similar risk perceptions factors but may vary with respect to different factors. For example, the credibility of information is important factors for Turkish customers but is not relevant to the Malaysian context. The study highlights the mediating role of risk perception and found that it may not mediate the stated relationship between some of the risk perception factors and ethics perceptions on social commerce platforms. Though there are earlier studies and many of them focus on the linear relationship between risk factors and risk perception and do not evaluate the mediating role of risk perception. Also, earlier studies have focused on the risk in terms of cost and resources. Our study has tried to fill the gap and extended the risk to an important issue of ethics and ethical violation on social commerce platforms. Also, this study has made comparison between two different aspects along the same risk factors, which is usually the rare case in earlier studies, where single country context has been considered. This helps us to be more careful while generalizing the results into other contexts being necessarily different from each other on the similar criterion. Methodologically, we have combined SEM with MCDM method to generate more rigorous and more reliable results, whereas many of the previous studies have used single method of SEM, VKOR, MULTIMORA and FDOSM. Additionally, the use of benchmarking process and obtaining expert opinion to rank customers' perception also distinguish our study from the earlier ones.

Practical Implications

This study has got some important practical implications for the companies which heavily rely on social commerce platforms/website to promote and sell their products and services. It is evident that the information technology has influenced every aspect of human life. Additionally, the recent pandemic has forced people around the globe to shift their business and economic activities from physical mode to online mode. Customers have started preferring online buying to avoid the risk of pandemic contraction. This also saves time and cost of customers. Due to the added benefits of online buying, the companies have also shifted their business on online platforms. This is equally worth for social commerce platforms. Our study makes some important practical contributions which may help both companies and customers to benefit from their online experience. Though the online social platforms facilitate the online buying but at the same time customers have risk perceptions about using social commerce platforms especially the perceived risk of ethical violation. This study has indicated some important indicators of this perceived risk. Our findings provide companies an opportunity to address these indicators so as to mitigate the perceived risk of ethical violation on social commerce platforms. For example, companies can improve the contents of their website and availability of quality information over there to make it more attractive and user friendly. This helps to lower the risk perception of customers about ethical violation on social commerce platforms. Similarly, the innovativeness of social commerce platforms attracts more customers as it also reduces the risk of ethical violation on such platforms. Companies need to present themselves on social commerce platforms in a way that it should give customers a sense of belongingness and an opportunity to higher levels of self-enhancement and self-esteem. Also, the presence of individuals with positive feedback can lessen the perceived risk of ethical violation on social commerce platforms. Our findings suggest that businesses must pay close attention to these important determinants of perceived risk of ethical violations on social commerce platforms so as to attract more customers and hence offer greater online buying. Additionally, we have ranked customers' perception from worst to best in both countries using benchmarking process and expert opinions. This is to help businesses to change negative perceptions into positive one by focusing on the critical risk perception factors.

Conclusion

The study has been taken to investigate the two important but overlooked aspects (i.e., perceived risk of ethical violation and perception of ethics on social commerce platforms) of social commerce, which is itself relatively a new research area in the field of business studies. The research sites include customers from two countries Malaysia and Turkey. The chosen cities in these two countries comprises of largest users of social commerce among rural communities. We adopted a relatively new methodology by combining the SEM and MCDM methods to evaluate that what important factor customers rank to identify their perceived risk of ethical violation and perception of ethics on social commerce platforms. Through our findings, we concluded that customers located in different localities may not rank equally the factors which influence their perceived risk of ethical violation and perception of ethics on social commerce platform. In this regard we identified from literature nine important factors/determinants of perceived risk of ethical violation and perception of ethics on social commerce platforms. Though customers had agreement with respect to majority of these factors to significantly influence their perceived risk but in case of some factors the customers in both countries rank these factors differently as significant vs insignificant. From this we infer that the disagreement between the customers may arise owing to cultural difference or some other contextual factors which need further investigation. From methodological aspect, we also conclude that care must be taken while generalizing the result to the customers in other localities because they may not be equally applicable especially when there are cultural difference and different level of technological adoption among customers. Overall, we conclude that our study is expected to make some useful inference both for the companies and customers to enrich their respective experiences with social commerce platforms.

References

- Abdullah, H. O., Thajil, K. M., Alnoor, A., Al-Abrow, H., Khaw, K. W., XinYing, & Sadaa, A. M. (2022). PREDICTING DETERMINANTS OF USE MOBILE COMMERCE THROUGH MODELLING NON-LINEAR. *CENTRAL EUROPEAN BUSINESS REVIEW*, 11, 0–24. <https://doi.org/https://doi.org/10.18267/j.cebr.306>
- Agarwal, R., & Prasad, J. (1998). A Conceptual and Operational Definition of Personal Innovativeness in the Domain of Information Technology. *Information Systems Research*, 9(2), 204–215. <https://doi.org/10.1287/isre.9.2.204>
- Ahn, T., Ryu, S., & Han, I. (2007). The impact of Web quality and playfulness on user acceptance of online retailing. *Information and Management*, 44(3), 263–275. <https://doi.org/10.1016/j.im.2006.12.008>
- Aladwani, A. M., & Palvia, P. (2002). Developing and Validating an Instrument for Measuring User-Perceived Web Quality. *Information & Management*, 39, 467–476.
- Aldás-Manzano, J., Lassala-Navarré, C., Ruiz-Mafé, C., & Sanz-Blas, S. (2009). The role of consumer innovativeness and perceived risk in online banking usage. *International Journal of Bank Marketing*, 27(1), 53–75. <https://doi.org/10.1108/02652320910928245>
- Ali, Y. S., Hussin, A. R. C., & Dahlan, H. M. (2020). Electronic Word of Mouth engagement in social commerce platforms: An empirical study. *Information Development*, 36(3), 438–456. <https://doi.org/10.1177/0266666919867488>
- Allah Pitchay, A., Aboue Eliz, N. M., Ganesan, Y., Mydin, A. A., Ratnasari, R. T., & Mohd Thas Thaker, M. A. (2021). Self-determination theory and individuals' intention to participate in donation crowdfunding. *International Journal of Islamic and Middle Eastern Finance and Management*. <https://doi.org/10.1108/IMEFM-08-2020-0424>
- Alnoor, A., Al-Abrow, H., Al Halbusi, H., Khaw, K. W., Chew, X. Y., Al-Maatoq, M., & Alharbi, R. K. (2022). Uncovering the antecedents of trust in social commerce: an application of the non-linear artificial neural network approach. *Competitiveness Review*, 32(3), 492–523. <https://doi.org/10.1108/CR-04-2021-0051>

- Alsalem, M. A., Alamoodi, A. H., Albahri, O. S., Dawood, K. A., Mohammed, R. T., Alnoor, A., Zaidan, A. A., Albahri, A. S., Zaidan, B. B., Jumaah, F. M., & Al-Obaidi, J. R. (2022). Multi-criteria decision-making for coronavirus disease 2019 applications: a theoretical analysis review. In *Artificial Intelligence Review* (Issue 0123456789). Springer Netherlands. <https://doi.org/10.1007/s10462-021-10124-x>
- Aransyah, M. F., Roy, J., & Aprianti, Y. (2019). Innovation resistance and perceive novelty on e-wallet services. *2nd Mulawarman International Conference on Economics and Business*, 115–122.
- Aw, E. C., Tan, G. W., Cham, T., & Raman, R. (2022). Technological Forecasting & Social Change Alexa , what ' s on my shopping list ? Transforming customer experience with digital voice assistants. *Technological Forecasting & Social Change*, 180(April), 121711. <https://doi.org/10.1016/j.techfore.2022.121711>
- Awad, N. F., & Ragowsky, A. (2008). Establishing trust in electronic commerce through online word of mouth: An examination across genders. *Journal of Management Information Systems*, 24(4), 101–121. <https://doi.org/10.2753/MIS0742-1222240404>
- Baber, A., Thurasamy, R., Malik, M. I., Sadiq, B., Islam, S., & Sajjad, M. (2016). Online word-of-mouth antecedents, attitude and intention-to-purchase electronic products in Pakistan. *Telematics and Informatics*, 33(2), 388–400. <https://doi.org/10.1016/j.tele.2015.09.004>
- Baethge, C., Klier, J., & Klier, M. (2016). Social commerce—state-of-the-art and future research directions. *Electronic Markets*, 26(3), 269–290. <https://doi.org/10.1007/s12525-016-0225-2>
- Bauer, H. H., Falk, T., & Hammerschmidt, M. (2006). eTransQual: A transaction process-based approach for capturing service quality in online shopping. *Journal of Business Research*, 59(7), 866–875. <https://doi.org/10.1016/j.jbusres.2006.01.021>
- Bazi, S., Hajli, A., Hajli, N., Shanmugam, M., & Lin, X. (2020). Winning engaged consumers: The rules of brand engagement and intention of co-creation in social commerce. *Information Technology and People*, 33(2), 456–476. <https://doi.org/10.1108/ITP-09-2018-0415>
- Beaver, W. H., & Engel, E. E. (1996). Discretionary behavior with respect to allowances for loan losses and the behavior of security prices. *Journal of Accounting and Economics*, 22, 177–206.
- Beh, P. K., Ganesan, Y., Iranmanesh, M., & Foroughi, B. (2021). Using smartwatches for fitness and health monitoring: the UTAUT2 combined with threat appraisal as moderators. In *Behaviour and Information Technology* (Vol. 40, Issue 3, pp. 282–299). <https://doi.org/10.1080/0144929X.2019.1685597>
- Beldad, A., De Jong, M., & Steehouder, M. (2010). How shall i trust the faceless and the intangible? A literature review on the antecedents of online trust. *Computers in Human Behavior*, 26(5), 857–869. <https://doi.org/10.1016/j.chb.2010.03.013>
- Berger, J. (2014). Word of mouth and interpersonal communication: A review and directions for future research. *Journal of Consumer Psychology*, 24(4), 586–607. <https://doi.org/10.1016/j.jcps.2014.05.002>
- Bhatnagar, A., & Ghose, S. (2004). Segmenting consumers based on the benefits and risks of Internet shopping. *Journal of Business Research*, 57(12 SPEC.ISS.), 1352–1360. [https://doi.org/10.1016/S0148-2963\(03\)00067-5](https://doi.org/10.1016/S0148-2963(03)00067-5)
- Bhattacharjee, A., & Clive, S. (2006). Influence Processes for Information Technology Acceptance : An Elaboration Likelihood Model1. *MIS Quarterly*, 30(4), 805–825.
- Bianchi, C., Andrews, L., Wiese, M., & Fazal-E-Hasan, S. (2017). Consumer intentions to engage in s-commerce: a cross-national study. *Journal of Marketing Management*, 33(5–6), 464–494. <https://doi.org/10.1080/0267257X.2017.1319406>

- Biucky, S. T., Abdolvand, N., & Harandi, S. R. (2017). The effects of perceived risk on social commerce adoption based on the tam model. *International Journal of Electronic Commerce Studies*, 8(2), 173–196. <https://doi.org/10.7903/ijecs.1538>
- Bölen, M. C. (2020). Exploring the determinants of users' continuance intention in smartwatches. *Technology in Society*, 60(March 2019). <https://doi.org/10.1016/j.techsoc.2019.101209>
- Bugshan, H., & Attar, R. W. (2020). Social commerce information sharing and their impact on consumers. *Technological Forecasting and Social Change*, 153(October 2019), 119875. <https://doi.org/10.1016/j.techfore.2019.119875>
- Busalim, A. H., & Hussin, A. R. C. (2016). Understanding social commerce: A systematic literature review and directions for further research. *International Journal of Information Management*, 36(6), 1075–1088. <https://doi.org/10.1016/j.ijinfomgt.2016.06.005>
- Caruana, A. (2004). The impact of switching costs on customer loyalty: A study among corporate customers of mobile telephony. *Journal of Targeting, Measurement and Analysis for Marketing*, 12(3), 256–268.
- Cenfetelli, R. T., Benbasat, I., & Al-Natour, S. (2008). Addressing the what and how of online services: Positioning supporting-services functionality and service quality for business-to-consumer success. *Information Systems Research*, 19(2), 161–181. <https://doi.org/10.1287/isre.1070.0163>
- Chai, S., & Kim, M. (2012). A socio-technical approach to knowledge contribution behavior: An empirical investigation of social networking sites users. *International Journal of Information Management*, 32(2), 118–126. <https://doi.org/10.1016/j.ijinfomgt.2011.07.004>
- Chang, C. (2015). Self-construal and Facebook activities: Exploring differences in social interaction orientation. *Computers in Human Behavior*, 53, 91–101. <https://doi.org/10.1016/j.chb.2015.06.049>
- Chang, H. H., & Chen, S. W. (2008). The impact of online store environment cues on purchase intention: Trust and perceived risk as a mediator. *Online Information Review*, 32(6), 818–841. <https://doi.org/10.1108/14684520810923953>
- Chang, K. C., Chen, M. C., Hsu, C. L., & Kuo, N. Te. (2012). Integrating loss aversion into a technology acceptance model to assess the relationship between website quality and website user's behavioural intentions. *Total Quality Management and Business Excellence*, 23(7–8), 913–930. <https://doi.org/10.1080/14783363.2011.637793>
- Chaouali, W., Ben Yahia, I., & Souiden, N. (2016). The interplay of counter-conformity motivation, social influence, and trust in customers' intention to adopt Internet banking services: The case of an emerging country. *Journal of Retailing and Consumer Services*, 28, 209–218. <https://doi.org/10.1016/j.jretconser.2015.10.007>
- Chauhan, V., Yadav, R., & Choudhary, V. (2019). Analyzing the impact of consumer innovativeness and perceived risk in internet banking adoption: A study of Indian consumers. *International Journal of Bank Marketing*, 37(1), 323–339. <https://doi.org/10.1108/IJBM-02-2018-0028>
- Chen, C. C., Hsiao, K. L., & Wu, S. J. (2018). Purchase intention in social commerce: An empirical examination of perceived value and social awareness. *Library Hi Tech*, 36(4), 583–604. <https://doi.org/10.1108/LHT-01-2018-0007>
- Chen, J., & Shen, X. L. (2015). Consumers' decisions in social commerce context: An empirical investigation. *Decision Support Systems*, 79, 55–64. <https://doi.org/10.1016/j.dss.2015.07.012>
- Chen, X., Huang, Q., & Davison, R. M. (2017). The role of website quality and social capital in building buyers' loyalty. *International Journal of Information Management*, 37(1), 1563–1574. <https://doi.org/10.1016/j.ijinfomgt.2016.07.005>

- Cheng, X., Gu, Y., Hua, Y., & Luo, X. (Robert). (2021). The Paradox of Word-of-Mouth in Social Commerce: Exploring the Juxtaposed Impacts of Source Credibility and Information Quality on SWOM Spreading. *Information and Management*, 58(7). <https://doi.org/10.1016/j.im.2021.103505>
- Cheung, C. M. K., & Lee, M. K. O. (2012). What drives consumers to spread electronic word of mouth in online consumer-opinion platforms. *Decision Support Systems*, 53(1), 218–225. <https://doi.org/10.1016/j.dss.2012.01.015>
- Cheung, C. M. K., Lee, M. K. O., & Rabjohn, N. (2008). The impact of electronic word-of-mouth: The adoption of online opinions in online customer communities. *Internet Research*, 18(3), 229–247. <https://doi.org/10.1108/10662240810883290>
- Chiu, T. S., Chih, W. H., Ortiz, J., & Wang, C. Y. (2018). The contradiction of trust and uncertainty from the viewpoint of swift guanxi. *Internet Research*, 28(3), 716–745. <https://doi.org/10.1108/IntR-06-2017-0233>
- Cho, M., Bonn, M. A., & Kang, S. (2014). Wine attributes, perceived risk and online wine repurchase intention: The cross-level interaction effects of website quality. *International Journal of Hospitality Management*, 43, 108–120. <https://doi.org/10.1016/j.ijhm.2014.09.002>
- Chu, S.-C. (2011). Viral Advertising in Social Media. *Journal of Interactive Advertising*, 12(1), 30–43. <https://doi.org/10.1080/15252019.2011.10722189>
- Chu, S. C., Lien, C. H., & Cao, Y. (2019). Electronic word-of-mouth (eWOM) on WeChat: examining the influence of sense of belonging, need for self-enhancement, and consumer engagement on Chinese travellers' eWOM. *International Journal of Advertising*, 38(1), 26–49. <https://doi.org/10.1080/02650487.2018.1470917>
- Chung, C. M. Y., & Darke, P. R. (2006). The consumer as advocate: Self-relevance, culture, and word-of-mouth. *Marketing Letters*, 17(4), 269–279. <https://doi.org/10.1007/s11002-006-8426-7>
- Chung, N., Lee, H., Lee, S. J., & Koo, C. (2015). The influence of tourism website on tourists' behavior to determine destination selection: A case study of creative economy in Korea. *Technological Forecasting and Social Change*, 96, 130–143. <https://doi.org/10.1016/j.techfore.2015.03.004>
- Cova, B., & White, T. (2010). Counter-brand and alter-brand communities: The impact of Web 2.0 on tribal marketing approaches. *Journal of Marketing Management*, 26(3–4), 256–270. <https://doi.org/10.1080/02672570903566276>
- Cross, R., Borgatti, S. P., & Parker, A. (2001). Beyond answers: Dimensions of the advice network. *Social Networks*, 23(3), 215–235. [https://doi.org/10.1016/S0378-8733\(01\)00041-7](https://doi.org/10.1016/S0378-8733(01)00041-7)
- Cui, H., Zhao, T., Smyczek, S., Sheng, Y., Xu, M., & Yang, X. (2020). Dual path effects of self-worth on status consumption: evidence from Chinese consumers. *Asia Pacific Journal of Marketing and Logistics*, 32(7), 1431–1450. <https://doi.org/10.1108/APJML-06-2019-0364>
- Cui, J., Wang, L., Feng, H., & Teng, Y. (2014). Empirical study of the motivations of e-WOM spreading on online feedback system in China. *Proceedings - Pacific Asia Conference on Information Systems, PACIS 2014*.
- Cunningham, L. F., Gerlach, J. H., Harper, M. D., & Young, C. E. (2005). Perceived risk and the consumer buying process: Internet airline reservations. *International Journal of Service Industry Management*, 16(4), 357–372. <https://doi.org/10.1108/09564230510614004>
- Daugherty, T., & Hoffman, E. (2014). eWOM and the importance of capturing consumer attention within social media. In *Journal of Marketing Communications* (Vol. 20, Issues 1–2, pp. 82–102). Taylor & Francis. <https://doi.org/10.1080/13527266.2013.797764>

- Di Fatta, D., Musotto, R., & Vesperi, W. (2016). Analyzing E-Commerce Websites: A Qualitative Quantitative Approach for the User Perceived Web Quality (UPWQ). *International Journal of Marketing Studies*, 8(6), 33. <https://doi.org/10.5539/ijms.v8n6p33>
- Djenadic, S., Tanasijevic, M., Jovancic, P., Ignjatovic, D., Petrovic, D., & Bugaric, U. (2022). Risk Evaluation: Brief Review and Innovation Model Based on Fuzzy Logic and MCDM. *Mathematics*, 10(5). <https://doi.org/10.3390/math10050811>
- Dowling, G R. (1986). Perceived Risk: The Concept and Its Measurement. *Perceived Risk: The Concept and Its Measurement*, 3(3), 193–210. <https://doi.org/10.1002/mar.4220030307>
- Dowling, Grahame R., & Staelin, R. (1994). A Model of Perceived Risk and Intended Risk-Handling Activity. *Journal of Consumer Research*, 21(1), 119. <https://doi.org/10.1086/209386>
- Erdem, T., & Swait, J. (2004). Brand credibility, brand consideration, and choice. *Journal of Consumer Research*, 31(1), 191–198. <https://doi.org/10.1086/383434>
- Erkan, I., & Evans, C. (2016). The influence of eWOM in social media on consumers' purchase intentions: An extended approach to information adoption. *Computers in Human Behavior*, 61, 47–55. <https://doi.org/10.1016/j.chb.2016.03.003>
- Farivar, S., Turel, O., & Yuan, Y. (2018). Skewing users' rational risk considerations in social commerce: An empirical examination of the role of social identification. *Information and Management*, 55(8), 1038–1048. <https://doi.org/10.1016/j.im.2018.05.008>
- Featherman, M. S., & Hajli, N. (2016). Self-Service Technologies and e-Services Risks in Social Commerce Era. *Journal of Business Ethics*, 139(2), 251–269. <https://doi.org/10.1007/s10551-015-2614-4>
- Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: A perceived risk facets perspective. *International Journal of Human Computer Studies*, 59(4), 451–474. [https://doi.org/10.1016/S1071-5819\(03\)00111-3](https://doi.org/10.1016/S1071-5819(03)00111-3)
- Felbermayr, A., & Nanopoulos, A. (2016). The Role of Emotions for the Perceived Usefulness in Online Customer Reviews. *Journal of Interactive Marketing*, 36, 60–76. <https://doi.org/10.1016/j.intmar.2016.05.004>
- Filieri, R., Hofacker, C. F., & Alguezaui, S. (2018). What makes information in online consumer reviews diagnostic over time? The role of review relevancy, factuality, currency, source credibility and ranking score. *Computers in Human Behavior*, 80, 122–131. <https://doi.org/10.1016/j.chb.2017.10.039>
- Forsythe, S. M., & Shi, B. (2003). Consumer patronage and risk perceptions in Internet shopping. *Journal of Business Research*, 56(11), 867–875. [https://doi.org/10.1016/S0148-2963\(01\)00273-9](https://doi.org/10.1016/S0148-2963(01)00273-9)
- Fu, J. R., Ju, P. H., & Hsu, C. W. (2015). Understanding why consumers engage in electronic word-of-mouth communication: Perspectives from theory of planned behavior and justice theory. *Electronic Commerce Research and Applications*, 14(6), 616–630. <https://doi.org/10.1016/j.elerap.2015.09.003>
- Gauri, D. K., Bhatnagar, A., & Rao, R. (2008). Role of word of mouth in online store loyalty. *Communications of the ACM*, 51(3), 89–91. <https://doi.org/10.1145/1325555.1325572>
- Gershoff, A. D., & Wooten, D. B. (2016). *When Boastful Word of Mouth Helps versus Hurts Social Perceptions and Persuasion*. 1–57.
- Glover, S., & Benbasat, I. (2010). A comprehensive model of perceived risk of E-commerce transactions. *International Journal of Electronic Commerce*, 15(2), 47–78. <https://doi.org/10.2753/JEC1086-4415150202>
- Gonçalves Curty, R., & Zhang, P. (2013). Website features that gave rise to social commerce: A historical analysis. *Electronic Commerce Research and Applications*, 12(4), 260–279. <https://doi.org/10.1016/j.elerap.2013.04.001>

- Grabner-Kräuter, S., & Breitenecker, R. J. (2011). Factors influencing online banking adoption: Evidence from the Austrian market. *International Journal of Internet Marketing and Advertising*, 6(4), 333–351. <https://doi.org/10.1504/IJIMA.2011.043655>
- Grange, C., Benbasat, I., & Burton-Jones, A. (2020). A network-based conceptualization of social commerce and social commerce value. *Computers in Human Behavior*, 108(August 2017), 105855. <https://doi.org/10.1016/j.chb.2018.12.033>
- Gremle, T. H.-T. P. G. W. D. (2004). Electronic word-of-mouth via consumer-opinion platforms: Whth motivates consumers to articulate themselves on the internet? *Journal of Interactive Marketing*, 18, 38–52.
- Gu, B., Konana, P., Rajagopalan, B., & Chen, H. W. M. (2007). Competition among virtual communities and user valuation: The case of investing-related communities. *Information Systems Research*, 18(1), 68–85. <https://doi.org/10.1287/isre.1070.0114>
- Gvili, Y., & Levy, S. (2021). Consumer engagement in sharing brand-related information on social commerce: the roles of culture and experience. *Journal of Marketing Communications*, 27(1), 53–68. <https://doi.org/10.1080/13527266.2019.1633552>
- Hagerty, B. M. K., Lynch-Sauer, J., Patusky, K. L., Bouwsema, M., & Collier, P. (1992). Sense of belonging: A vital mental health concept. *Archives of Psychiatric Nursing*, 6(3), 172–177. [https://doi.org/10.1016/0883-9417\(92\)90028-H](https://doi.org/10.1016/0883-9417(92)90028-H)
- Hagerty, B. M., Williams, R. A., Coyne, J. C., & Early, M. R. (1996). Sense of belonging and indicators of social and psychological functioning. *Archives of Psychiatric Nursing*, 10(4), 235–244. [https://doi.org/10.1016/S0883-9417\(96\)80029-X](https://doi.org/10.1016/S0883-9417(96)80029-X)
- Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management and Data Systems*, 117(3), 442–458. <https://doi.org/10.1108/IMDS-04-2016-0130>
- Hair Jr., J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107. <https://doi.org/10.1504/ijmda.2017.10008574>
- Hajli, M. (2013). A research framework for social commerce adoption. *Information Management & Computer Security*, 21(3), 144–154. <https://doi.org/10.1108/IMCS-04-2012-0024>
- Hajli, M. N. (2014). The role of social support on relationship quality and social commerce. *Technological Forecasting and Social Change*, 87, 17–27. <https://doi.org/10.1016/j.techfore.2014.05.012>
- Hajli, N. (2015). Social commerce constructs and consumer's intention to buy. *International Journal of Information Management*, 35(2), 183–191. <https://doi.org/10.1016/j.ijinfomgt.2014.12.005>
- Hajli, N., Shanmugam, M., Powell, P., & Love, P. E. D. (2015). A study on the continuance participation in on-line communities with social commerce perspective. *Technological Forecasting and Social Change*, 96, 232–241. <https://doi.org/10.1016/j.techfore.2015.03.014>
- Hajli, N., Sims, J., Zadeh, A. H., & Richard, M. O. (2017). A social commerce investigation of the role of trust in a social networking site on purchase intentions. *Journal of Business Research*, 71, 133–141. <https://doi.org/10.1016/j.jbusres.2016.10.004>
- Handarkho, Y. D. (2021). Social experience vs. social technology in enhancing the intention to use social commerce: a case study of Indonesia. *Journal of Enterprise Information Management*, 34(3), 860–883. <https://doi.org/10.1108/JEIM-01-2020-0013>
- Hawes, J. M., & Lumpkin, J. R. (1986). Perceived risk and the selection of a retail patronage model. *Journal of the Academy of Marketing Science*, 14(4), 037–042.

- Heinze, J., Thomann, M., & Fischer, P. (2017). Ladders to m-commerce resistance: A qualitative means-end approach. *Computers in Human Behavior*, 73, 362–374. <https://doi.org/10.1016/j.chb.2017.03.059>
- Hennig-Thurau, T., Gwinner, K. P., Walsh, G., & Gremler, D. D. (2004). Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the Internet? *Journal of Interactive Marketing*, 18(1), 38–52. <https://doi.org/10.1002/dir.10073>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Hernández, B., Jiménez, J., & Martín, M. J. (2009). Key website factors in e-business strategy. *International Journal of Information Management*, 29(5), 362–371. <https://doi.org/10.1016/j.ijinfomgt.2008.12.006>
- Hew, J. J., Leong, L. Y., Tan, G. W. H., Ooi, K. B., & Lee, V. H. (2019). The age of mobile social commerce: An Artificial Neural Network analysis on its resistances. *Technological Forecasting and Social Change*, 144(September 2017), 311–324. <https://doi.org/10.1016/j.techfore.2017.10.007>
- Hirunyawipada, T., & Paswan, A. K. (2006). Consumer innovativeness and perceived risk: Implications for high technology product adoption. *Journal of Consumer Marketing*, 23(4), 182–198. <https://doi.org/10.1108/07363760610674310>
- Hsieh, M. T., & Tsao, W. C. (2014). Reducing perceived online shopping risk to enhance loyalty: A website quality perspective. *Journal of Risk Research*, 17(2), 241–261. <https://doi.org/10.1080/13669877.2013.794152>
- Hsu, Chia Lin, Chen, M. C., & Kumar, V. (2018). How social shopping retains customers? Capturing the essence of website quality and relationship quality. *Total Quality Management and Business Excellence*, 29(1–2), 161–184. <https://doi.org/10.1080/14783363.2016.1171706>
- Hsu, Chien Lung, & Liao, Y. C. (2014). Exploring the linkages between perceived information accessibility and microblog stickiness: The moderating role of a sense of community. *Information and Management*, 51(7), 833–844. <https://doi.org/10.1016/j.im.2014.08.005>
- Huang, G. Q. I., Chen, Y. V., & Wong, I. K. A. (2020). Hotel guests' social commerce intention: The role of social support, social capital and social identification. *International Journal of Contemporary Hospitality Management*, 32(2), 706–729. <https://doi.org/10.1108/IJCHM-04-2019-0380>
- Hussain, S., Ahmed, W., Jafar, R. M. S., Rabnawaz, A., & Jianzhou, Y. (2017). eWOM source credibility, perceived risk and food product customer's information adoption. *Computers in Human Behavior*, 66, 96–102. <https://doi.org/10.1016/j.chb.2016.09.034>
- Ismagilova, E., Rana, N. P., Slade, E. L., & Dwivedi, Y. K. (2021). A meta-analysis of the factors affecting eWOM providing behaviour. *European Journal of Marketing*, 55(4), 1067–1102. <https://doi.org/10.1108/EJM-07-2018-0472>
- Jalal, A., Marzooq, J., & Nabi, H. A. (2011). Evaluating the Impacts of Online Banking Factors on Motivating the Process of E-banking. *Journal of Management and Sustainability*, 1(1), 32–42. <https://doi.org/10.5539/jms.v1n1p32>
- Jalilvand, M. R., & Samiei, N. (2012). The effect of electronic word of mouth on brand image and purchase intention: An empirical study in the automobile industry in Iran. *Marketing Intelligence and Planning*, 30(4), 460–476. <https://doi.org/10.1108/02634501211231946>
- Jiang, C., Rashid, R. M., & Wang, J. (2019). Investigating the role of social presence dimensions and information support on consumers' trust and shopping intentions. *Journal of Retailing and Consumer Services*, 51(June), 263–270. <https://doi.org/10.1016/j.jretconser.2019.06.007>

- Jianlin, W., & Qi, D. (2010). Moderating effect of personal innovativeness in the model for e-store loyalty. *Proceedings of the International Conference on E-Business and E-Government, ICEE 2010*, 2065–2068. <https://doi.org/10.1109/ICEE.2010.522>
- Jiménez-Barreto, J., & Campo-Martínez, S. (2018). Destination website quality, users' attitudes and the willingness to participate in online co-creation experiences. *European Journal of Management and Business Economics*, 27(1), 26–41. <https://doi.org/10.1108/EJMBE-11-2017-0048>
- Kang, J. W., & Namkung, Y. (2019). The information quality and source credibility matter in customers' evaluation toward food O2O commerce. *International Journal of Hospitality Management*, 78(February 2018), 189–198. <https://doi.org/10.1016/j.ijhm.2018.10.011>
- Khaw, K. W., Alnoor, A., Al-Abrow, H., Chew, X. Y., Sadaa, A. M., Abbas, S., & Khattak, Z. Z. (2022). Modelling and Evaluating Trust in Mobile Commerce: A Hybrid Three Stage Fuzzy Delphi, Structural Equation Modeling, and Neural Network Approach. *International Journal of Human-Computer Interaction*, 00(00), 1–17. <https://doi.org/10.1080/10447318.2021.2004700>
- Khaw, K. W., Thurasamy, R., Al-Abrow, H., Alnoor, A., Tiberius, V., Abdullah, H. O., & Abbas, S. (2021). Influence of generational status on immigrants' entrepreneurial intentions to start new ventures: a framework based on structural equation modeling and multicriteria decision-making. *Journal of Entrepreneurship in Emerging Economies*. <https://doi.org/10.1108/JEEE-04-2021-0141>
- Kim, M. J., Chung, N., Lee, C. K., & Preis, M. W. (2016). Dual-route of persuasive communications in mobile tourism shopping. *Telematics and Informatics*, 33(2), 293–308. <https://doi.org/10.1016/j.tele.2015.08.009>
- Kim, M. J., Chung, N., Lee, C. K., & Preis, M. W. (2017). Dual-route of persuasive communications in mobile tourism shopping. *Telematics and Informatics*, 33(2), 293–308. <https://doi.org/10.1016/j.tele.2015.08.009>
- King, R. A., Racherla, P., & Bush, V. D. (2014). What we know and don't know about online word-of-mouth: A review and synthesis of the literature. *Journal of Interactive Marketing*, 28(3), 167–183. <https://doi.org/10.1016/j.intmar.2014.02.001>
- Kleinlercher, K., Emrich, O., Herhausen, D., Verhoef, P. C., & Rudolph, T. (2018). Websites as information hubs: How informational channel integration and shopping benefit density interact in steering customers to the physical store. *Journal of the Association for Consumer Research*, 3(3), 330–342. <https://doi.org/10.1086/698415>
- Korea, Y. W. H., & Park, M. C. (2013). Antecedents of Customer Satisfaction and Customer Loyalty for Emerging Devices in the Initial Market of Korea: An Equity Framework. *Psychology & Marketing*, 30(8), 676–689. <https://doi.org/10.1002/mar.20637>
- Krishnan, E., Mohammed, R., Alnoor, A., Albahri, O. S., Zaidan, A. A., Alsattar, H., Albahri, A. S., Zaidan, B. B., Kou, G., Hamid, R. A., Alamoodi, A. H., & Alazab, M. (2021). Interval type 2 trapezoidal-fuzzy weighted with zero inconsistency combined with VIKOR for evaluating smart e-tourism applications. *International Journal of Intelligent Systems*, 36(9), 4723–4774. <https://doi.org/10.1002/int.22489>
- Lal, P. (2017). Analyzing determinants influencing an individual's intention to use social commerce website. *Future Business Journal*, 3(1), 70–85. <https://doi.org/10.1016/j.fbj.2017.02.001>
- Laroche, M., Yang, Z., McDougall, G. H. G., & Bergeron, J. (2005). Internet versus bricks-and-mortar retailers: An investigation into intangibility and its consequences. *Journal of Retailing*, 81(4), 251–267. <https://doi.org/10.1016/j.jretai.2004.11.002>
- Lee, K. S., & Tan, S. J. (2003). E-retailing versus physical retailing. A theoretical model and empirical test of consumer choice. *Journal of Business Research*, 56(11), 877–885. [https://doi.org/10.1016/S0148-2963\(01\)00274-0](https://doi.org/10.1016/S0148-2963(01)00274-0)

- Lee, M. C. (2009). Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic Commerce Research and Applications*, 8(3), 130–141. <https://doi.org/10.1016/j.elerap.2008.11.006>
- Lee, Y. C. (2014). Impacts of decision-making biases on eWOM retrust and risk-reducing strategies. *Computers in Human Behavior*, 40, 101–110. <https://doi.org/10.1016/j.chb.2014.08.002>
- Leong, L. Y., Hew, T. S., Ooi, K. B., & Chong, A. Y. L. (2020). Predicting the antecedents of trust in social commerce – A hybrid structural equation modeling with neural network approach. *Journal of Business Research*, 110(December 2018), 24–40. <https://doi.org/10.1016/j.jbusres.2019.11.056>
- Leong, L. Y., Hew, T. S., Ooi, K. B., Lee, V. H., & Hew, J. J. (2019). A hybrid SEM-neural network analysis of social media addiction. *Expert Systems with Applications*, 133, 296–316. <https://doi.org/10.1016/j.eswa.2019.05.024>
- Li, L., Wang, Z., Li, Y., & Liao, A. (2021). Impacts of consumer innovativeness on the intention to purchase sustainable products. *Sustainable Production and Consumption*, 27, 774–786. <https://doi.org/10.1016/j.spc.2021.02.002>
- Liang, C. J., & Chen, H. J. (2009). A study of the impacts of website quality on customer relationship performance. *Total Quality Management and Business Excellence*, 20(9), 971–988. <https://doi.org/10.1080/14783360903181784>
- Liang, T. P., Ho, Y. T., Li, Y. W., & Turban, E. (2011). What drives social commerce: The role of social support and relationship quality. *International Journal of Electronic Commerce*, 16(2), 69–90. <https://doi.org/10.2753/JEC1086-4415160204>
- Liang, X., Chen, T., Ye, M., Lin, H., & Li, Z. (2021). A hybrid fuzzy BWM-VIKOR MCDM to evaluate the service level of bike-sharing companies: A case study from Chengdu, China. *Journal of Cleaner Production*, 298, 126759. <https://doi.org/10.1016/j.jclepro.2021.126759>
- Liao, C., Hong, J., & Zhao, D. (2019). Understanding corporate surplus food donation in China: testing the roles of environmental concern, altruism, past experience, and perceived risk. *Environmental Science and Pollution Research*, 26(16), 16628–16640. <https://doi.org/10.1007/s11356-019-05058-5>
- Liébana-Cabanillas, F., & Alonso-Dos-Santos, M. (2017). Factors that determine the adoption of Facebook commerce: The moderating effect of age. *Journal of Engineering and Technology Management - JET-M*, 44, 1–18. <https://doi.org/10.1016/j.jengtecman.2017.03.001>
- Liébana-Cabanillas, Francisco, Singh, N., Kalinic, Z., & Carvajal-Trujillo, E. (2021). Examining the determinants of continuance intention to use and the moderating effect of the gender and age of users of NFC mobile payments: a multi-analytical approach. *Information Technology and Management*, 22(2), 133–161. <https://doi.org/10.1007/s10799-021-00328-6>
- Limbu, Y. B., Wolf, M., & Lunsford, D. (2012). Perceived ethics of online retailers and consumer behavioral intentions: The mediating roles of trust and attitude. *Journal of Research in Interactive Marketing*, 6(2), 133–154. <https://doi.org/10.1108/17505931211265435>
- Lin, H. F. (2007). The impact of website quality dimensions on customer satisfaction in the B2C E-commerce context. *Total Quality Management and Business Excellence*, 18(4), 363–378. <https://doi.org/10.1080/14783360701231302>
- Lin, H., Fan, W., & Chau, P. Y. K. (2014). Determinants of users' continuance of social networking sites: A self-regulation perspective. *Information and Management*, 51(5), 595–603. <https://doi.org/10.1016/j.im.2014.03.010>

- Lin, X., Wang, X., & Hajli, N. (2019). Building E-Commerce Satisfaction and Boosting Sales: The Role of Social Commerce Trust and Its Antecedents. *International Journal of Electronic Commerce*, 23(3), 328–363. <https://doi.org/10.1080/10864415.2019.1619907>
- Liu, Jianfeng, Zhou, L., & Wang, Y. (2021). Altruistic preference models of low-carbon E-commerce supply chain. *Mathematics*, 9(14). <https://doi.org/10.3390/math9141682>
- Liu, Jun, Zhang, H. J., Sun, J. J., Li, N. X., & Bilgihan, A. (2020). How to prevent negative online customer reviews: the moderating roles of monetary compensation and psychological compensation. *International Journal of Contemporary Hospitality Management*, 32(10), 3115–3134. <https://doi.org/10.1108/IJCHM-04-2020-0334>
- Liu, Q., Shao, Z., & Fan, W. (2018). The impact of users' sense of belonging on social media habit formation: Empirical evidence from social networking and microblogging websites in China. *International Journal of Information Management*, 43(13), 209–223. <https://doi.org/10.1016/j.ijinfomgt.2018.08.005>
- Lo, P.-S., Dwivedi, Y. K., Wei-Han Tan, G., Ooi, K.-B., Cheng-Xi Aw, E., & Metri, B. (2022). Why do consumers buy impulsively during live streaming? A deep learning-based dual-stage SEM-ANN analysis. *Journal of Business Research*, 147(April), 325–337. <https://doi.org/10.1016/j.jbusres.2022.04.013>
- Loh, X. M., Lee, V. H., Hew, T. S., & Lin, B. (2022). The cognitive-affective nexus on mobile payment continuance intention during the COVID-19 pandemic. *International Journal of Bank Marketing*. <https://doi.org/10.1108/IJBM-06-2021-0257>
- Lu, B., Fan, W., & Zhou, M. (2016). Social presence, trust, and social commerce purchase intention: An empirical research. *Computers in Human Behavior*, 56, 225–237. <https://doi.org/10.1016/j.chb.2015.11.057>
- Lu, B., Zeng, Q., & Fan, W. (2016). Examining macro-sources of institution-based trust in social commerce marketplaces: An empirical study. *Electronic Commerce Research and Applications*, 20, 116–131. <https://doi.org/10.1016/j.elerap.2016.10.004>
- Luarn, P., Yang, J. C., & Chiu, Y. P. (2015). Why people check in to social network sites. *International Journal of Electronic Commerce*, 19(4), 21–46. <https://doi.org/10.1080/10864415.2015.1029353>
- Luo, Q., & Zhong, D. (2015). Using social network analysis to explain communication characteristics of travel-related electronic word-of-mouth on social networking sites. *Tourism Management*, 46, 274–282. <https://doi.org/10.1016/j.tourman.2014.07.007>
- Maia, C., Lunardi, G., Longaray, A., & Munhoz, P. (2018). Factors and characteristics that influence consumers' participation in social commerce. *Revista de Gestao*, 25(2), 194–211. <https://doi.org/10.1108/REGE-03-2018-031>
- Mak, B., Schmitt, B. H., & Lyytinen, K. (1997). User participation in knowledge update of expert systems. *Information and Management*, 32(2), 55–63. [https://doi.org/10.1016/S0378-7206\(96\)00010-9](https://doi.org/10.1016/S0378-7206(96)00010-9)
- Malhotra, N. K., Kim, S. S., & Agarwal, J. (2004). Internet users' information privacy concerns (IUIPC): The construct, the scale, and a causal model. *Information Systems Research*, 15(4), 336–355. <https://doi.org/10.1287/isre.1040.0032>
- Mangold, W. G., & Faulds, D. J. (2009). Social media: The new hybrid element of the promotion mix. *Business Horizons*, 52(4), 357–365. <https://doi.org/10.1016/j.bushor.2009.03.002>
- Marakanon, L., & Panjakajornsak, V. (2017). Perceived quality, perceived risk and customer trust affecting customer loyalty of environmentally friendly electronics products. *Kasetsart Journal of Social Sciences*, 38(1), 24–30. <https://doi.org/10.1016/j.kjss.2016.08.012>
- Mathew, A. O., Jha, A. N., Lingappa, A. K., & Sinha, P. (2021). Attitude towards drone food delivery services—role of innovativeness, perceived risk, and green image. *Journal of*

- Open Innovation: Technology, Market, and Complexity*, 7(2).
<https://doi.org/10.3390/joitmc7020144>
- McCoy, S., Everard, A., & Loiacono, E. T. (2009). Online ads in familiar and unfamiliar sites: Effects on perceived website quality and intention to reuse. *Information Systems Journal*, 19(4), 437–458. <https://doi.org/10.1111/j.1365-2575.2007.00290.x>
- Merhi, M., Hone, K., & Tarhini, A. (2020). A cross-cultural study of the intention to use mobile banking between Lebanese and British consumers: Extending UTAUT2 with security, privacy and trust. *Technology in Society*, 59(June), 101151. <https://doi.org/10.1016/j.techsoc.2019.101151>
- Milaković, I. K., & Mihić, M. (2017). Word-of-Mouth Communication: a Multi-Dimensional Approach. *Зборник Радова Економског Факултета У Источном Сарајеву*, 1(12), 39. <https://doi.org/10.7251/zrefis1612039k>
- Mitchell, V. (1999). Consumer perceived risk: conceptualisations and models. *European Journal of Marketing*, 33(1/2), 163–195. <https://doi.org/10.1108/03090569910249229>
- Molinillo, S., Anaya-Sánchez, R., & Liébana-Cabanillas, F. (2020). Analyzing the effect of social support and community factors on customer engagement and its impact on loyalty behaviors toward social commerce websites. *Computers in Human Behavior*, 108(April 2019), 105980. <https://doi.org/10.1016/j.chb.2019.04.004>
- Moore, K., & McElroy, J. C. (2012). The influence of personality on Facebook usage, wall postings, and regret. *Computers in Human Behavior*, 28(1), 267–274. <https://doi.org/10.1016/j.chb.2011.09.009>
- Ng, F. Z. X., Yap, H. Y., Tan, G. W. H., Lo, P. S., & Ooi, K. B. (2022). Fashion shopping on the go: A Dual-stage predictive-analytics SEM-ANN analysis on usage behaviour, experience response and cross-category usage. *Journal of Retailing and Consumer Services*, 65(1), 102851. <https://doi.org/10.1016/j.jretconser.2021.102851>
- Nicolaou, A. I., & McKnight, D. H. (2006). Perceived information quality in data exchanges: Effects on risk, trust, and intention to use. *Information Systems Research*, 17(4), 332–351. <https://doi.org/10.1287/isre.1060.0103>
- Nowak, L. I., & Newton, S. (2008). Using winery web sites to launch relationships with Millennials. *International Journal of Wine Business Research*, 20(1), 53–67. <https://doi.org/10.1108/17511060810864615>
- Oh, S., & Syn, S. Y. (2015). Motivations for Sharing Information and Social Support in Social Media: A Comparative Analysis of Facebook, Twitter, Delicious, YouTube, and Flickr. *JOURNAL OF THE ASSOCIATION FOR INFORMATION SCIENCE AND TECHNOLOGY*, 66(10), 2045–2060. <https://doi.org/10.1002/asi.23320>
- Ohanian, R. (1990). Construction and validation of a scale to measure celebrity endorsers' perceived expertise, trustworthiness, and attractiveness. *Journal of Advertising*, 19(3), 39–52. <https://doi.org/10.1080/00913367.1990.10673191>
- Olivero, N., & Lunt, P. (2004). Privacy versus willingness to disclose in e-commerce exchanges: The effect of risk awareness on the relative role of trust and control. *Journal of Economic Psychology*, 25(2), 243–262. [https://doi.org/10.1016/S0167-4870\(02\)00172-1](https://doi.org/10.1016/S0167-4870(02)00172-1)
- Orso, V., Ruotsalo, T., Leino, J., Gamberini, L., & Jacucci, G. (2017). Overlaying social information: The effects on users' search and information-selection behavior. *Information Processing and Management*, 53(6), 1269–1286. <https://doi.org/10.1016/j.ipm.2017.06.001>
- Park, D. H., & Kim, S. (2008). The effects of consumer knowledge on message processing of electronic word-of-mouth via online consumer reviews. *Electronic Commerce Research and Applications*, 7(4), 399–410. <https://doi.org/10.1016/j.elerap.2007.12.001>

- Park, D. H., & Lee, J. (2008). eWOM overload and its effect on consumer behavioral intention depending on consumer involvement. *Electronic Commerce Research and Applications*, 7(4), 386–398. <https://doi.org/10.1016/j.elerap.2007.11.004>
- Park, D. H., Lee, J., & Han, I. (2007). The effect of on-line consumer reviews on consumer purchasing intention: The moderating role of involvement. *International Journal of Electronic Commerce*, 11(4), 125–148. <https://doi.org/10.2753/JEC1086-4415110405>
- Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7(3), 101–134. <https://doi.org/10.1080/10864415.2003.1104475>
- Pelaez, A., Chen, C. W., & Chen, Y. X. (2019). Effects of Perceived Risk on Intention to Purchase: A Meta-Analysis. *Journal of Computer Information Systems*, 59(1), 73–84. <https://doi.org/10.1080/08874417.2017.1300514>
- Phua, J., Jin, S. V., & Kim, J. (Jay). (2017). Uses and gratifications of social networking sites for bridging and bonding social capital: A comparison of Facebook, Twitter, Instagram, and Snapchat. *Computers in Human Behavior*, 72, 115–122. <https://doi.org/10.1016/j.chb.2017.02.041>
- Piliavin, J. A., & Charng, H. (1990). *ALTRUISM: A Review of Recent*. 27–65.
- Qalati, S. A., Vela, E. G., Li, W., Dakhan, S. A., Hong Thuy, T. T., & Merani, S. H. (2021). Effects of perceived service quality, website quality, and reputation on purchase intention: The mediating and moderating roles of trust and perceived risk in online shopping. *Cogent Business and Management*, 8(1). <https://doi.org/10.1080/23311975.2020.1869363>
- Razak, N. S. A., Marimuthu, M., Omar, A., & Mamat, M. (2014). Trust and Repurchase Intention on Online Tourism Services among Malaysian Consumers. *Procedia - Social and Behavioral Sciences*, 130, 577–582. <https://doi.org/10.1016/j.sbspro.2014.04.067>
- Regner, T., & Riener, G. (2017). Privacy Is Precious: On the Attempt to Lift Anonymity on the Internet to Increase Revenue. *Journal of Economics and Management Strategy*, 26(2), 318–336. <https://doi.org/10.1111/jems.12192>
- Reichelt, J., Sievert, J., & Jacob, F. (2014). How credibility affects eWOM reading: The influences of expertise, trustworthiness, and similarity on utilitarian and social functions. In *Journal of Marketing Communications* (Vol. 20, Issues 1–2, pp. 65–81). Taylor & Francis. <https://doi.org/10.1080/13527266.2013.797758>
- Roman, S. (2007). The ethics of online retailing: A scale development and validation from the consumers' perspective. *Journal of Business Ethics*, 72(2), 131–148. <https://doi.org/10.1007/s10551-006-9161-y>
- Rosen, D., Lafontaine, P. R., & Hendrickson, B. (2011). Couchsurfing: Belonging and trust in a globally cooperative online social network. *New Media and Society*, 13(6), 981–998. <https://doi.org/10.1177/1461444810390341>
- Rosillo-Díaz, E., Blanco-Encomienda, F. J., & Crespo-Almendros, E. (2020). A cross-cultural analysis of perceived product quality, perceived risk and purchase intention in e-commerce platforms. *Journal of Enterprise Information Management*, 33(1), 139–160. <https://doi.org/10.1108/JEIM-06-2019-0150>
- Rouibah, K., Al-Qirim, N., Hwang, Y., & Pouri, S. G. (2021). The determinants of ewom in social commerce: The role of perceived value, perceived enjoyment, trust, risks, and satisfaction. *Journal of Global Information Management*, 29(3), 75–102. <https://doi.org/10.4018/JGIM.2021050104>
- Safeena, R., Date, H., Hundewale, N., & Kammani, A. (2013). Combination of TAM and TPB in Internet Banking Adoption. *International Journal of Computer Theory and Engineering*, September 2014, 146–150. <https://doi.org/10.7763/ijcte.2013.v5.665>

- San Martín, S., & Camarero, C. (2009). How perceived risk affects online buying. *Online Information Review*, 33(4), 629–654. <https://doi.org/10.1108/14684520910985657>
- Schaefer, C., Coyne, J. C., & Lazarus, R. S. (1981). The health-related functions of social support. *Journal of Behavioral Medicine*, 4(4), 381–406. <https://doi.org/10.1007/BF00846149>
- SEN, S. A. D. S. L. (2007). WHY ARE YOU TELLING ME THIS? AN EXAMINATION INTO NEGATIVE CONSUMER REVIEWS ON THE WEB. *Journal of Interactive Marketing*, 21(3), 2–20. <https://doi.org/10.1002/dir>
- Shanmugam, M., Sun, S., Amidi, A., Khani, F., & Khani, F. (2016). The applications of social commerce constructs. *International Journal of Information Management*, 36(3), 425–432. <https://doi.org/10.1016/j.ijinfomgt.2016.01.007>
- Sharma, S., & Crossler, R. E. (2014). Disclosing too much? Situational factors affecting information disclosure in social commerce environment. *Electronic Commerce Research and Applications*, 13, 305–319.
- Sheikh, Z., Yezheng, L., Islam, T., Hameed, Z., & Khan, I. U. (2019). Impact of social commerce constructs and social support on social commerce intentions. *Information Technology and People*, 32(1), 68–93. <https://doi.org/10.1108/ITP-04-2018-0195>
- Shiau, W. L., & Chau, P. Y. K. (2015). Does altruism matter on online group buying? Perspectives from egotistic and altruistic motivation. *Information Technology and People*, 28(3), 677–698. <https://doi.org/10.1108/ITP-08-2014-0174>
- Singh, N., Sinha, N., & Liébana-Cabanillas, F. J. (2020). Determining factors in the adoption and recommendation of mobile wallet services in India: Analysis of the effect of innovativeness, stress to use and social influence. *International Journal of Information Management*, 50(June 2019), 191–205. <https://doi.org/10.1016/j.ijinfomgt.2019.05.022>
- Soleimani, M., Danaei, H., Jowkar, A., & Mehdi, M. (2017). Factors Affecting Social Commerce and Exploring the Mediating Role of Perceived Risk. *Iranian Journal of Management Studies (IJMS)*, 10(1), 63–90. <https://doi.org/10.22059/ijms.2017.212223.672191>
- Stigler, G. J. (1961). THE ECONOMICS OF INFORMATION' GEORGE. *THE JOURNAL OF POLITICAL ECONOMY*, LXIX(3), 213–225.
- Stouthuysen, K., Teunis, I., Reusen, E., & Slabbinck, H. (2018). Initial trust and intentions to buy: The effect of vendor-specific guarantees, customer reviews and the role of online shopping experience☆. *Electronic Commerce Research and Applications*, 27, 23–38. <https://doi.org/10.1016/j.elerap.2017.11.002>
- Sun, T., Youn, S., Wu, G., & Kuntaraporn, M. (2006). Online word-of-mouth (or mouse): An exploration of its antecedents and consequences. *Journal of Computer-Mediated Communication*, 11(4), 1104–1127. <https://doi.org/10.1111/j.1083-6101.2006.00310.x>
- Sundaram, D. S., Mitra, K., & Webster, C. (1998). Word-of-mouth communications: A motivational analysis. ACR North American Advances. *Advances in Consumer Research*, 25.
- Tariq, B., Najam, H., Han, H., Sadaa, Abdullah. M., Abbasi, A. A., Christopher, N., & Abbasi, G. A. (2021). (2021). Examining Mobile Financial Services in Pakistan: Rural and Urban Perspective with Gender as a Moderator. . In *Recent Advances in Technology Acceptance Models and Theories* (pp. 225–245). Springer.
- Teng, S., Khong, K. W., Goh, W. W., & Chong, A. Y. L. (2014). Examining the antecedents of persuasive eWOM messages in social media. *Online Information Review*, 38(6), 746–768. <https://doi.org/10.1108/OIR-04-2014-0089>
- Thakur, R., & Srivastava, M. (2014). Adoption readiness, personal innovativeness, perceived risk and usage intention across customer groups for mobile payment services in India. *Internet Research*, 24(3), 369–392. <https://doi.org/10.1108/IntR-12-2012-0244>

- Tokunaga, R. S. (2013). Engagement With Novel Virtual Environments: The Role of Perceived Novelty and Flow in the Development of the Deficient Self-Regulation of Internet Use and Media Habits. *Human Communication Research*, 39(3), 365–393. <https://doi.org/10.1111/hcre.12008>
- Tong, Y., Wang, X., Tan, C. H., & Teo, H. H. (2013). An empirical study of information contribution to online feedback systems: A motivation perspective. *Information and Management*, 50(7), 562–570. <https://doi.org/10.1016/j.im.2013.02.009>
- Trumbo, C. W., & McComas, K. A. (2003). The function of credibility in information processing for risk perception. *Risk Analysis*, 23(2), 343–353. <https://doi.org/10.1111/1539-6924.00313>
- Tzavlopoulos, I., Gotzamani, K., Andronikidis, A., & Vassiliadis, C. (2019). Determining the impact of e-commerce quality on customers' perceived risk, satisfaction, value and loyalty. *International Journal of Quality and Service Sciences*, 11(4), 576–587. <https://doi.org/10.1108/IJQSS-03-2019-0047>
- Um, N. H. (2019). Antecedents and Consequences of Consumers' Attitude toward Social Commerce Sites. *Journal of Promotion Management*, 25(4), 500–519. <https://doi.org/10.1080/10496491.2018.1448324>
- Vainikka, V. (2013). Rethinking Mass Tourism. *Tourist Studies*, 13(3), 268–286. <https://doi.org/10.1177/1468797613498163>
- Vargo, C., Gangadharbatla, H., & Hopp, T. (2019). eWOM across channels: comparing the impact of self-enhancement, positivity bias and vengeance on Facebook and Twitter. *International Journal of Advertising*, 38(8), 1153–1172. <https://doi.org/10.1080/02650487.2019.1593720>
- Vos, A., Marinagi, C., Trivellas, P., Eberhagen, N., Skourlas, C., & Giannakopoulos, G. (2014). Risk Reduction Strategies in Online Shopping: E-trust Perspective. *Procedia - Social and Behavioral Sciences*, 147, 418–423. <https://doi.org/10.1016/j.sbspro.2014.07.122>
- Wang, G., Tan, G. W. H., Yuan, Y., Ooi, K. B., & Dwivedi, Y. K. (2022). Revisiting TAM2 in behavioral targeting advertising: A deep learning-based dual-stage SEM-ANN analysis. *Technological Forecasting and Social Change*, 175(November 2021), 121345. <https://doi.org/10.1016/j.techfore.2021.121345>
- Wang, J. C., & Chang, C. H. (2013). How online social ties and product-related risks influence purchase intentions: A Facebook experiment. *Electronic Commerce Research and Applications*, 12(5), 337–346. <https://doi.org/10.1016/j.elerap.2013.03.003>
- Wang, R. Y., & Strong, D. M. (1996). What Data Quality Means to Data Consumers. *Journal of Management Information Systems*, 12(4), 5–23.
- Wang, Xueqin, Wong, Y. D., Teo, C. C., Yuen, K. F., & Feng, X. (2020). The four facets of self-collection service for e-commerce delivery: Conceptualisation and latent class analysis of user segments. *Electronic Commerce Research and Applications*, 39(July 2019), 100896. <https://doi.org/10.1016/j.elerap.2019.100896>
- Wang, Xuequn, Lin, X., & Spencer, M. K. (2019). Exploring the effects of extrinsic motivation on consumer behaviors in social commerce: Revealing consumers' perceptions of social commerce benefits. *International Journal of Information Management*, 45(November 2018), 163–175. <https://doi.org/10.1016/j.ijinfomgt.2018.11.010>
- Wang, Xuequn, Tajvidi, M., Lin, X., & Hajli, N. (2020). Towards an Ethical and Trustworthy Social Commerce Community for Brand Value Co-creation: A trust-Commitment Perspective. *Journal of Business Ethics*, 167(1), 137–152. <https://doi.org/10.1007/s10551-019-04182-z>
- Wang, Yichuan, & Yu, C. (2017). Social interaction-based consumer decision-making model in social commerce: The role of word of mouth and observational learning. *International*

- Journal of Information Management*, 37(3), 179–189.
<https://doi.org/10.1016/j.ijinfomgt.2015.11.005>
- Wang, Ying, So, K. K. F., & Sparks, B. A. (2017). Technology Readiness and Customer Satisfaction with Travel Technologies: A Cross-Country Investigation. *Journal of Travel Research*, 56(5), 563–577. <https://doi.org/10.1177/0047287516657891>
- Wang, Ying, Zhang, Q., Li, Q., Wang, J., Sannigrahi, S., Bilsborrow, R., Bellingrath-Kimura, S. D., Li, J., & Song, C. (2021). Role of social networks in building household livelihood resilience under payments for ecosystem services programs in a poor rural community in China. *Journal of Rural Studies*, 86(October 2020), 208–225. <https://doi.org/10.1016/j.jrurstud.2021.05.017>
- Wang, Yuyan, Yu, Z., Shen, L., & Dong, W. (2021). Impacts of altruistic preference and reward-penalty mechanism on decisions of E-commerce closed-loop supply chain. *Journal of Cleaner Production*, 315(June), 128132. <https://doi.org/10.1016/j.jclepro.2021.128132>
- Wasko, M. M. L., & Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. *MIS Quarterly: Management Information Systems*, 29(1), 35–57. <https://doi.org/10.2307/25148667>
- Wojnicki, A. C., & Godes, D. (2011). Word-of-Mouth as Self-Enhancement. *SSRN Electronic Journal*, 1–48. <https://doi.org/10.2139/ssrn.908999>
- Wu, P. C. s., & Wang, Y. C. (2011). The influences of electronic word-of-mouth message appeal and message source credibility on brand attitude. *Asia Pacific Journal of Marketing and Logistics*, 23(4), 448–472. <https://doi.org/10.1108/13555851111165020>
- Wu, Y., Niu, G., Chen, Z., & Zhang, D. (2021). Purchasing social attention by tipping: Materialism predicts online tipping in live-streaming platform through self-enhancement motive. *Journal of Consumer Behaviour*, June 2020, 1–13. <https://doi.org/10.1002/cb.1973>
- Xu, B., & Li, D. (2015). An empirical study of the motivations for content contribution and community participation in Wikipedia. *Information and Management*, 52(3), 275–286. <https://doi.org/10.1016/j.im.2014.12.003>
- Xu, D., Zhou, W., Deng, X., Ma, Z., Yong, Z., & Qin, C. (2020). Information credibility, disaster risk perception and evacuation willingness of rural households in China. *Natural Hazards*, 103(3), 2865–2882. <https://doi.org/10.1007/s11069-020-04106-5>
- Xu, Q. (2014). Should i trust him? the effects of reviewer profile characteristics on eWOM credibility. *Computers in Human Behavior*, 33, 136–144. <https://doi.org/10.1016/j.chb.2014.01.027>
- Yahia, I. Ben, Al-Neama, N., & Kerbache, L. (2018). Investigating the drivers for social commerce in social media platforms: Importance of trust, social support and the platform perceived usage. *Journal of Retailing and Consumer Services*, 41(October 2017), 11–19. <https://doi.org/10.1016/j.jretconser.2017.10.021>
- Yan, L. Y., Tan, G. W. H., Loh, X. M., Hew, J. J., & Ooi, K. B. (2021). QR code and mobile payment: The disruptive forces in retail. *Journal of Retailing and Consumer Services*, 58(January 2020), 102300. <https://doi.org/10.1016/j.jretconser.2020.102300>
- Yan, Q., Wu, S., Wang, L., Wu, P., Chen, H., & Wei, G. (2016). E-WOM from e-commerce websites and social media: Which will consumers adopt? *Electronic Commerce Research and Applications*, 17, 62–73. <https://doi.org/10.1016/j.elerap.2016.03.004>
- Yan, Q., Wu, S., Zhou, Y., & Zhang, L. (2018). How differences in eWOM platforms impact consumers' perceptions and decision-making. *Journal of Organizational Computing and Electronic Commerce*, 28(4), 315–333. <https://doi.org/10.1080/10919392.2018.1517479>

- Yang, H., Yu, J., Zo, H., & Choi, M. (2016). User acceptance of wearable devices: An extended perspective of perceived value. *Telematics and Informatics*, 33(2), 256–269. <https://doi.org/10.1016/j.tele.2015.08.007>
- Yang, X. (2021). Exchanging social support in social commerce: The role of peer relations. *Computers in Human Behavior*, 124(June), 106911. <https://doi.org/10.1016/j.chb.2021.106911>
- Yang, Z., Van Ngo, Q., Chen, Y., Nguyen, C. X. T., & Hoang, H. T. (2019). Does Ethics Perception Foster Consumer Repurchase Intention? Role of Trust, Perceived Uncertainty, and Shopping Habit. *SAGE Open*, 9(2). <https://doi.org/10.1177/2158244019848844>
- Ye, N. (2004). Dimensions of Consumer's Perceived Risk in Online Shopping. *Journal of Electronic Science and Technology*, 2(3), 177–182. <https://www.academia.edu/download/55077188/0403-32.pdf>
- Yi, M. Y., Yoon, J. J., Davis, J. M., & Lee, T. (2013). Untangling the antecedents of initial trust in Web-based health information: The roles of argument quality, source expertise, and user perceptions of information quality and risk. *Decision Support Systems*, 55(1), 284–295. <https://doi.org/10.1016/j.dss.2013.01.029>
- Yoo, C. W., Sanders, G. L., & Moon, J. (2013). Exploring the effect of e-WOM participation on e-Loyalty in e-commerce. *Decision Support Systems*, 55(3), 669–678. <https://doi.org/10.1016/j.dss.2013.02.001>
- Yusuf, A. S., Che Hussin, A. R., & Busalim, A. H. (2018). Influence of e-WOM engagement on consumer purchase intention in social commerce. *Journal of Services Marketing*, 32(4), 493–504. <https://doi.org/10.1108/JSM-01-2017-0031>
- Zainal, N. T. A., Harun, A., & Lily, J. (2017). Examining the mediating effect of attitude towards electronic words-of mouth (eWOM) on the relation between the trust in eWOM source and intention to follow eWOM among Malaysian travellers. *Asia Pacific Management Review*, 22(1), 35–44. <https://doi.org/10.1016/j.apmr.2016.10.004>
- Zhang, K. Z. K., Benyoucef, M., & Zhao, S. J. (2016). Building brand loyalty in social commerce: The case of brand microblogs. *Electronic Commerce Research and Applications*, 15, 14–25. <https://doi.org/10.1016/j.elerap.2015.12.001>
- Zhang, L., Tan, W., Xu, Y., & Tan, G. (2012). Dimensions of perceived risk and their influence on consumers' purchasing behavior in the overall process of B2C. *Lecture Notes in Electrical Engineering*, 111 LNEE, 1–10. https://doi.org/10.1007/978-3-642-24823-8_1
- Zhang, Z., & Hou, Y. (2017). The effect of perceived risk on information search for innovative products and services: the moderating role of innate consumer innovativeness. *Journal of Consumer Marketing*, 34(3), 241–254. <https://doi.org/10.1108/JCM-04-2016-1768>
- Zhao, L., Lu, Y., Wang, B., Chau, P. Y. K., & Zhang, L. (2012). Cultivating the sense of belonging and motivating user participation in virtual communities: A social capital perspective. *International Journal of Information Management*, 32(6), 574–588. <https://doi.org/10.1016/j.ijinfomgt.2012.02.006>
- Zheng, Y., Zhao, K., & Stylianou, A. (2013). The impacts of information quality and system quality on users' continuance intention in information-exchange virtual communities: An empirical investigation. *Decision Support Systems*, 56(1), 513–524. <https://doi.org/10.1016/j.dss.2012.11.008>
- Zhou, L., Zhang, P., & Zimmermann, H. D. (2013). Social commerce research: An integrated view. *Electronic Commerce Research and Applications*, 12(2), 61–68. <https://doi.org/10.1016/j.elerap.2013.02.003>
- Zhou, M., Cai, X., Liu, Q., & Fan, W. (2019). Examining continuance use on social network and micro-blogging sites: Different roles of self-image and peer influence. *International*

Journal of Information Management, 47(April), 215–232.
<https://doi.org/10.1016/j.ijinfomgt.2019.01.010>

The Effect of Debt Maturity on the Relationship between Corporate Governance, Corporate Risk-Taking and Investment Efficiency: Evidence from Thailand

Panern Intara & Abdul Hadi bin Zulkafli

School of Management, Universiti Sains Malaysia, Malaysia

Corresponding email: panern.i@student.usm.my

Abstract

The purpose of this study is to clarify a conceptual insight into the corporate governance practice, corporate risk-taking, and investment efficiency, and to propose how the overall CG practice of Thai firms is measured. More importantly, it proposes a conceptual framework, which demonstrates how CG practice and corporate risk-taking might influence the company's ability to utilize resources efficiently. A review of the specialized journal and the SETSMART database was used to address the research gap and identify the current situation regarding problem statements. The CG principles of the OECD and SET CG code are integrated to create a method to measure CG practice that is appropriate to the current situation for Thai firms. The scores from all five dimensions of CG practice assessment, which are calculated with many different criteria, are used to measure the level of overall CG practice of Thai firms by the weighted average approach of five multidimensional measurements. The degree of corporate risk-taking is assessed using the three-year rolling window standard deviation of ROA. Finally, a conceptual framework is provided to test the impact of CG practice and corporate risk-taking on investment efficiency. This study is fruitful for listed companies and policymakers. Listed companies may use the findings as a guideline for adjusting financial behavior, particularly investing behavior and the findings are beneficial to design corporate governance policies. Policymakers may adjust criteria to measure CG practice or encourage listed companies to apply the concept of corporate governance more widely. This paper avoids narrowly measuring CG practice, a single dimension of corporate governance mechanism. Many criteria under the five dimensions of CG practice were carefully designed to effectively measure the comprehensive and reflecting overall level of CG practice. This study creates a novelty in measuring the CG mechanism in Thailand.

Keywords: corporate governance; corporate risk-taking; debt maturity; investment efficiency.

Introduction

One of the essential functions of financial managers in achieving the goals of maximizing shareholders' wealth is an investment decision. Although investment decision frequently results in a large amount of cash outflow and entails cash flow uncertainty, which impacts the company's risks and returns in the long run, investment activity is the key driver of cash flow growth and firm expansion and is one of the most crucial determinants of firm value (Ohlson, 1995; Ehie & Olibe, 2010). Under the neoclassical theory, firms will invest until their marginal cost equals the marginal benefit (Gomariz & Ballesta, 2014). However, under the imperfect market, firms may make an investment that differs from its optimal level of investment, either as an overinvestment or underinvestment. Inappropriate levels of investment, whether overinvestment or underinvestment, all negatively impact the firm in numerous dimensions. For example, due to overinvestment, the firm loses capital resources for executing all of a non-value added project, and the firm may lose profit opportunities due to neglect of investment in value-enhancing projects. Corporate governance has gotten attention and evolved into a significant mechanism. CG is a supervisory mechanism that protects investors' interests (La Porta et al., 2000; Utama et al., 2017), as well as control the behavior and decisions of

management so that the interest of the management is consistent with the benefits of investors (Jacoby et al., 2019). A firm with good CG can build confidence, increase demand for securities, and increase liquidity and price levels which is beneficial to the company's fundraising (The Stock Exchange of Thailand, 2017). As well as OECD (2014) indicated that excellent CG improves a company's image, lowers risks, and raises investor confidence. In addition, good CG mechanisms can incentivize and direct managers to make appropriate investment decisions and avoid overinvestment just to increase investor confidence, as well as CG practices can reduce or eliminate agency problems (Core et al., 2006). CG is related to investment efficiency in various aspects, such as the reduction of interests' conflicts or agency conflicts, which can contribute to less financing costs and may contribute to mitigating underinvestment problem (Chung & Zhang, 2011), making the control system more stringent, resulting in more effective decision-making by executives, and reduce the opportunistic behaviors of the management and potential agency conflicts (Ullah et al., 2020; Chen & Xie, 2015). Moreover, firms with transparent environmental information may easily and effectively monitor management operations, resulting in high investment efficiency (Chen et al., 2011; Cheng et al., 2013).

The investment's risk factor is one of the most important aspects that influence the investment decision. This risk exists because it is uncertain that the cost of the investment will be recovered, and a profit will be made. The level of a firm's business risk is influenced by factors such as the level of demand for the products or services, the level of competition, the cost or margin of goods. Therefore, firms with a high level of business risk will have relatively high volatility in EBIT. Economic uncertainties have given rise to the attention of corporate risk-taking, so corporate risk-taking often plays an important role in a company's survival. The higher corporate risk-taking indicates that managers prefer risky but value-enhancing investments, which will promote the progress of production technology (Kose John, 2008), as well as Andries et al., (2020), found a positive and significant between the corporate risk-taking and both firm total assets and sales growth, indicating that higher in corporate risk-taking increased firm-level growth. In addition, a higher level of risk-taking creates economic consequences for the firm on issues such as higher capital allocation efficiency, high growth rate, and higher value of the firm (Kreiser et al., 2002).

The main economic consequence that the firm receives if there is a high level of risk-taking is higher efficiency in capital allocation (Kreiser et al., 2002), therefore, as most firms have limited capital to make investment decisions, more effective capital allocation may contribute to the development of investment efficiency. However, personal great reward on investment may be a key incentive for managers to increase risk-taking by undertaking risky projects. In contrast, managers may aim to protect job position and reputation, thus leading to avoidance of investing in a risky investment project, even if it is a firm value-enhancing project unless they are forced by well-diversified and risk-loving large shareholders, leading to a reduction in the level of risk-taking of the firms. The above situations all lead to overinvestment and underinvestment problems, also known as investment inefficiency. The question is whether the level of corporate risk-taking affects the investment decisions, a higher level of corporate risk-taking may lead to the identification and execution of superior investment projects and thereby to optimal investment decisions. Managers may be more conservative and more risk-averse. This kind of internal factor may curb the overinvestment and lead to optimal investment decisions. Managers may be less likely to exhibit overconfidence and engage in aggressive decision-making, lower managerial opportunism leading to fewer agency problems also improves the quality of decisions and decreases underinvestment problems. On the other hand, a higher level of corporate risk-taking may contribute to managers having higher opportunism, higher agency problems and decreasing investment efficiency.

Firms with risky debt may face a debt overhang problem in the presence of shareholders–creditors conflicts. High-leveraged firms may be unable to invest in new investment projects, even if the projects have a positive NPV, resulting in an underinvestment problem. Debt maturity is an important approach for monitoring managerial behavior. Lowering the maturity of debt could also improve investment efficiency by reducing both overinvestment and underinvestment problems (Gomariz & Ballesta, 2014). As well as Park and Bae (2011) revealed that debt maturity plays a role in the correction for capital market imperfections. While, Childs et al. (2005) noted that even though short-term debt can alleviate debt overhang problems, this benefit must be balanced against the cost of liquidity risk, incorporate with short-term debt allows firms to make frequent repricing of contracts, thereby, reducing both under-over investment problems. Gomariz and Ballesta (2014) concluded that overinvestment is the primary concern of creditors since it is through overinvestment that managers expropriate creditors and minority shareholders, and this inefficiency can be reduced with shorter maturities, like Johnson (2003), which suggests that short-term debt can alleviate underinvestment. Moreover, Gomariz and Ballesta (2014) and Jeon and Oh (2017) concluded that both debt maturity and investment efficiency were significantly positive. This means that the shorter the debt maturity, the higher the investment efficiency. The preceding discussion raises an empirical question what is the effectiveness of CG on investment efficiency when the level of debt is high. The level of debt may have a positive impact because it pushes the management to be more creative, innovative, and efficient. Moreover, with a high proportion of debt, management has a strong motivation to survive, thereby unlikely to behave opportunistically. Furthermore, debt repayment obligations and default risk will all increase as debt financing increases. Managers experience both higher benefits and risks when expanding the CG boundary in this situation. Managers will be motivated to enhance their investment efficiency because of the greater risks (Lei & Chen, 2019). Further, the proceeding discussion on the impact of debt maturity raises another empirical question as to whether debt maturity will affect the association between corporate risk-taking and investment efficiency. The financial structure with a high proportion of short-term debt may contribute to a stronger association between corporate risk-taking and investment efficiency. As high levels of short-term debt represent firms' short-term financial obligations, as well as the higher level of corporate risk-taking, may contribute to changes in investment managers' behavior.

Listed companies in the stock exchange of Thailand (SET) continue to attract the attention of investors, finding that in the first half of 2021, listed companies in the SET had an initial public offering (IPO) as No. 1 in ASEAN and also the most liquid stock exchange among ASEAN stock exchanges (Pititawatchai, 2021) and that foreign investors account for approximately 37% of total investors in the SET (The Stock Exchange of Thailand, 2021). This data demonstrates the attractiveness of investment opportunities for both Thai and foreign investors. Thailand's proportion of total investment to GDP which has remained low for several years (Monetary Policy Department, Bank of Thailand, 2020), an increase in the savings-investment gap (Bank of Thailand, 2020), a change in corporate investment decision-making behavior, and rising in the net saving to GDP ratio can very well reflect the problem of inefficient investment of the Thai private sector. In addition, although Thai firms have improved the level of CG practice through the higher scores reported in the CG report, the problematic issue, and the room for improvement in CG practice of Thai firms still exist, namely the board responsibilities dimension, which has a lower score than the other dimensions of CG practice and below the overall average (Thai Institute of Director Association, 2021).

A review of previous studies found that several studies have examined the direct relationship between CG and investment efficiency, as well as the moderating effect of industry competition, which is an external factor that may affect this relationship, and an internal factor such as debt boundary, as a moderating variable. Along with the previous research's

recommendations, there are other important interacting variables to be considered, such as environmental uncertainty, investor protection, and political connection. One of them should be an interacting variable that is consistent with the context of Thai firms is debt maturity, which can be calculated using a different proxy. It is obvious that short-term debt is an obligation that firms must meet in a short period of time, and it comes with a variety of benefits and drawbacks. Short-term debt has benefits such as maintaining cash flow and handling emergencies, but it also has drawbacks such as perceptions of weak financial health from investors, negative credit risk assessments, and a burden on day-to-day operations. A high portion of the short-term debt may lead to a disruption in the degree to which CG principles are implemented in firms, as well as a movement in the association between CG and investment efficiency. Furthermore, a high level of short-term debt may cause changes in the magnitude of the association between corporate risk-taking and investment efficiency.

The issue of inefficient investment in the Thai private sector can be clearly seen in the low proportion of total investment to GDP, an increase in savings-investment gap, and a shift in corporate investment decision-making behavior. Therefore, to address this issue, this paper attempts to relate relevant factors, such as CG and corporate risk-taking, that may impact the company's capacity to use resources efficiently. Additionally, this study provides additional tests to determine whether the influence of CG practice and corporate risk-taking on investment efficiency would alter as a result of corporate debt financing, particularly short-term debt. If this conceptual framework is applied in further research, the expected outcomes may be helpful to listed businesses and policymakers, which will contribute to the sustainable growth of the Thai capital market.

Literature Review

Agency Theory

Agency theory is one essential issue in organizational theory since it evolved because of the ownership separation to the corporate executives. This theory describes the relationship between owners and their agents. This is most commonly the case between shareholders as principals and corporate executives as agents (Jensen & Meckling, 1976). The principal-agent problem refers to a relationship formed by mutual agreement between the two parties that results in a difference in priorities and interests between agents and principals. Managers (agents) have more expertise than stockholders (principals), allowing them more opportunities to engage in self-serving behavior (Yang & Morgan, 2011). The agency theory suggests that some dimensions of CG, such as disclosure and transparency, and board responsibilities, can reduce agency costs (Homayoun, 2015) and lead to the efficiency of capital allocation. The agency theory implies that the board plays a role in decreasing the conflict of interest between the management and the shareholders; therefore, the primary purpose of CG may play an essential role in minimizing the agency problem, whereas, in the absence of effective CG, managers tend to overinvest in projects with negative NPV (Naeem & Li, 2019), consuming an excessive amount of privileges, disregarding responsibilities, pursue their own interests at the expense of their shareholders, and promote overinvestment and underinvestment in the firm, resulting in investment inefficiency.

The level of corporate risk-taking is critical in firm decision-making and capital allocation (Cheng, 2021). However, the level of risk-taking is not as high as possible. Maintaining a reasonable balance of risks is more advantageous to the firm's development (Dong, 2014). Principal-agent conflicts are one of the problems that arise in agency theory and reflect the existence of agency cost. The management's behaviors may be self-serving or opportunistic. The strategic choices could have an impact on both shareholder benefit and firm income instability, which is represented in greater volatility in profit or return. Cheng (2021) indicates that the level of corporate risk-taking is also influenced by the firm's strategic choices,

which are related to the capabilities of the management and their incentives to adopt effective strategies.

In the case of the conflict of interest between debtholders and shareholders, shareholders in leveraged firms have incentives to increase asset risk through investing in high-risk projects but positive NPV, as they gain benefit from successful of investment while the losses from unsuccessful projects are borne by debtholders (Seta et al., 2020). Moreover, managers may make suboptimal investment if firms financed low debt (Biddle et al., 2009), particularly if the firm has high excess cash flow coupled with a low proportion of because firms are more likely to attract external funding at the low cost of capital, as a result, firms are more likely to invest than optimal level as well as consume an excessive amount of privilege. In such cases, good corporate governance practices and a larger proportion of debt in the capital structure may restrict or limit a manager's opportunistic.

Corporate Governance, Corporate Risk-taking and Investment Efficiency

Corporate Governance is a system of governance and control by separating the rights and responsibilities of stakeholders (OECD, 2015), while Srijunpetch, (2012) defined CG as a system of quality management with transparent disclosures to promote efficiency, create competitiveness, and add value to the firm. In summary, CG is a mechanism that defines the structure and processes of relationships between the board of directors, management, and shareholders to create competitiveness, long-term growth, and shareholder value. At the same time, other stakeholders are considered. The fundamental principles of CG are accountability, transparency, fairness, and responsibility. Good CG is important to investors as it helps companies build trust, and also shows a company's direction and firm integrity. As a result, good CG helps promote financial viability by creating a long-term investment opportunity for market participants.

Understanding corporate risk-taking decisions is critical for analyzing organizational dynamism. Corporate risk-taking and risk preferences are vital decision-making factors, with significant consequences for firm performance, firm growth, and survival (Bromiley, 1991). The level of corporate risk-taking can be measured in a variety of ways such as the standard deviation of EBIT (John et al., 2008; Zhang, 2009; Li et al., 2013; Habib & Hasan, 2017), R&D expenditure scaled by assets (Bhuiyan et al., 2021), the annual standard deviation of monthly stock returns (Bargeron et al., 2010), the variation in corporate earnings (EBITDA) divided by total assets or the market-adjusted volatility of firm-level earning approach (Kose John, 2008), and the rolling window standard deviation of ROA (Balutel et al., 2020).

Investment efficiency is the key criterion for determining whether investment activities can generate value for the firms (Jin & Yu, 2017). Overall, it can be inferred that an entity's investment efficiency is only achieved when the firm decides to invest at an appropriate level or without over or underinvestment. In most cases, investment efficiency is measured by the level of over and under investment (Verdi, 2006; Biddle et al. 2009; Li & Wang, 2010; Gomariz & Ballesta, 2014). Overinvestment arises when a project with a negative NPV is undertaken (Biddle et al 2009), while underinvestment occurs when a project with a positive NPV is neglected, it is considered a missed investment in good investment opportunities (Li & Wang, 2010). As a result of missing investment in projects that will enhance competitive advantage, firms are unable to fulfill market demand, resulting in market share losses (Majeed et al., 2018). Finally, firms suffer from investments at a lower level than optimal (Grenadier & Wang, 2005), therefore, underinvestment can be considered as a value-distorting activity. One of the factors for inefficient investments is information asymmetry (Myers & Majluf, 1984; Verdi, 2006). In the context of information asymmetry, moral hazard and adverse selection may cause a corporate investment to deviate from what it should be (Jensen & Meckling, 1976; Myers & Majluf, 1984).

Methodologies

Initially, the authors conducted a series of online searches on major databases, including Scopus, ISI Web of Science, ScienceDirect, and Emerald. Based on the literature review, all articles were studied and analyzed on important issues such as the statement of problem, motivation of study, theoretical themes, variables measurement, research framework, empirical model, key findings, and suggestions for future study. The analysis of the relevant issues allows us to know the research gap, which has not been studied or is still an opportunity for future studies, which consists of a test of the relationship between CG and investment efficiency in Thailand, with limited studies including a measure of CG practice in Thailand, which covers all dimensions of CG practice. In addition, the current situation regarding CG practice in Thailand, corporate risk-taking, and investment efficiency were investigated and analyzed from the annual reports of listed companies and related agencies such as the Bank of Thailand and the Thai Institute of Director Association (IOD) to identify the statement of problem that needs to be resolved. The conceptual framework was developed in accordance with the research hypothesis based on the review of related theories and empirical studies.

The challenge is variable measurement. Each variable needs to be measured appropriately. Without the effective measurement of variables and unable to reflect the current situation in Thai firms, the hypothesis in this conceptual framework cannot be developed into a good research hypothesis. Thus, the variable measurement for creating a CG index, which is a relatively new study in Thailand, is challenging.

To develop the CG index for this proposed, the approach for constructing the CG index from related studies was reviewed, such as Jordan CG Index by Nsour and Al-Rjoub (2021), Turkey CG Index by Ararat and Yurtoglu (2015), and Korea CG Index by Black et al. (2006a). More importantly, the OECD CG principles and the CG code for Thai listed companies 2017 are the main framework that is employed in determining criteria for the construction of the index. These criteria are based on five categories of OECD CG Principles, which are widely accepted worldwide. The five categories include rights of shareholders, the equitable treatment of shareholders, the role of stakeholders, disclosure and transparency, and the board responsibilities. Furthermore, the criteria in each category based on OECD were adjusted to compliance with the CG Code 2017 by adding and removing some criteria to make them consistent with current issues in Thailand and more relevant for Thai firms. Finally, there are a total of 71 separate criteria organized into five categories.

The Proposed Model

The conceptual framework was developed in accordance with the research hypothesis based on the review of related theories and empirical studies, as shown in figure 1

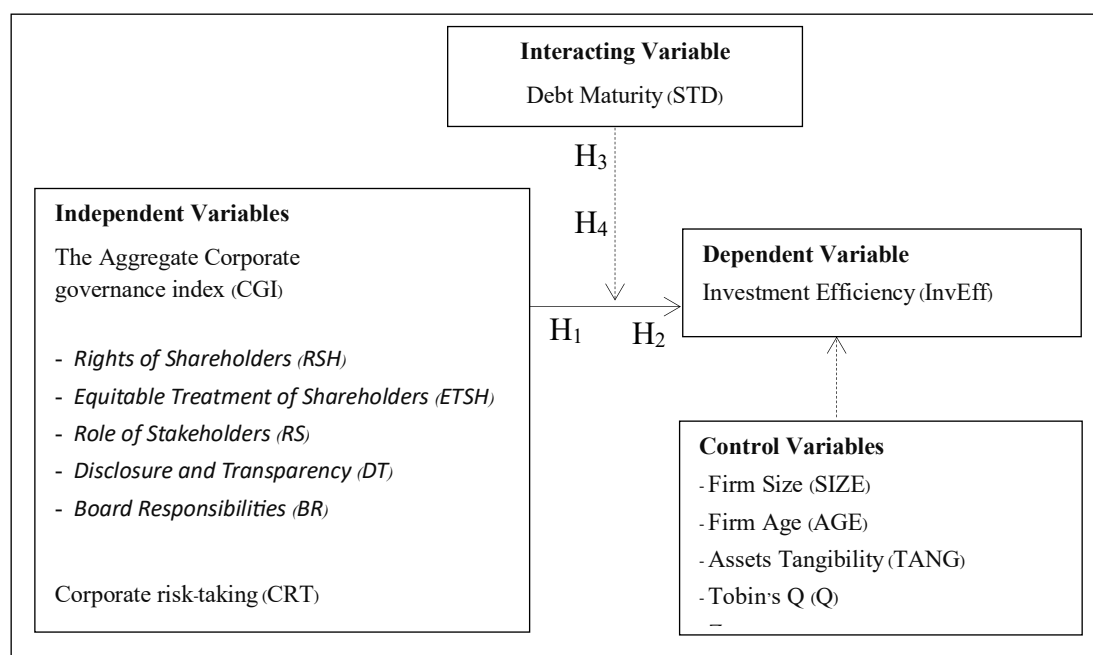


Figure1. Conceptual Framework

Figure 1, the conceptual framework is drawn from the understanding of the critical factors that may affect the company's ability to utilize resources. Two significant explanatory variables; namely the aggregate CG index (CGI) and corporate risk-taking (CRT) are therefore specified in the framework. Particularly the CG index, which consists of five dimensions, including rights of shareholders, equitable treatment of shareholders, roles of stakeholders, disclosure and transparency, and board responsibilities. These five dimensions need to be considered to create a CG index that can reflect all dimensions of CG practice. This conceptual framework casts new light on CG by developing CG index rather than using a single dimension of CG practice. More importantly, the CG index will be created by combining the Thai CG Code for Listed Companies (CG Code 2017) and the OECD CG Principles, which are widely accepted worldwide. Hence, this conceptual paper presents the theoretical concept and conceptual model through a literature review for exploration of the relationship between CG, corporate risk-taking and investment efficiency, as well as to provides additional tests to determine whether the influence of CG practice and corporate risk-taking on investment efficiency would alter because of debt maturity. The conceptual framework above consists of four research hypothesis, which can explain the rationale for expected outcomes through a review of relevant studies as follows:

Corporate Governance and Investment Efficiency (H1)

Bimo et al., (2021) examined the impact of CG on investment efficiency and the moderating effect of industry competition. The study found that improved CG mechanism results in better investment efficiency. CG can protect the interests of investors by narrowing the probability of opportunistic behaviors from the management, and reducing agency problems and information asymmetry. The same is true for the study conducted by Lei and Chen (2019) which found that the expansion of CG had a significant impact on the improvement in investment efficiency and debt constraint can enhance the positive association of the CG practice on investment efficiency. The CG scores based on the report of World Bank were used as a dependent variable for the study of the influence of executive network and government governance on the investment efficiency of Chinese listed firms (Jin & Yu, 2017). The results indicated that the level of executive network and more CG practices, resulted in increased corporate investment efficiency, as well as the study by Alam and Firmansyah

(2019), which concluded that CG is positively associated with investment efficiency. Effective CG improves the efficiency of capital allocation for investment. According to Ezzi et al., (2022) revealed that CG practice has played a role in accelerating this relationship between blockchain technology and corporate investment efficiency. Blockchain technology has a greater impact on investment efficiency in firms that practice good CG. Lastly, besides having a positive effect on investment efficiency, CG decreases the negative association between information asymmetry and investment efficiency (Poursoleyman et al., 2021). In summary, the dimensions of CG, such as right of shareholders, equitable treatment of shareholders, roles of stakeholders, disclosure and transparency, and board responsibilities, often serve as guidelines for executives to manage the firms to create consistency of the interests for all stakeholders, in particular, the dimensions of disclosure and transparency, and board responsibilities involve controlling top management behavior, reducing the potential for conflict of interest and agency cost, as well as creating transparency to reduce the level of information asymmetry, which leads to a reduction in moral hazard and adverse selection. Investment decisions are therefore often analyzed and decided to make in a way that maximized firm benefits. Investment opportunities will be thoroughly evaluated, positive NPV projects will be accepted while value-destroying projects will be rejected. Capital allocation will be efficient and ultimately increase investment efficiency. Considering the findings above regarding the influence of corporate governance practices on investment efficiency including the above conclusions, the following research hypothesis was proposed:

H1: The corporate governance index has a positive impact on investment efficiency.

Corporate Risk-Taking and Investment Efficiency (H2)

The level of corporate risk-taking is determined by the level of operational risk resulting from business and financial risk as part of financing decisions (Ren et al., 2019). A high level of risk-taking indicates that the firm has greater uncertainty in terms of value creation and future cash flows (Daspit et al., 2019). Thus, the firm's preference for risk and the degree of risk control can be considered based on the level of corporate risk-taking that the firm is facing. (Yan et al., 2021). If the level of risk-taking is high, the firm has a high degree of risk control and a preference for risk. In addition, a higher level of corporate risk-taking can be associated with the firm's potential to the creation of long-term competitive advantage, which corresponds to Roper and Tapinos (2016) and García-Granero et al., (2015) which state that the willingness and capacity to take risks are essential for firms to improve innovation and achieve innovation performance.

One of the key factors affecting the level of risks a firm is facing is the corporate strategy (Habib & Hasan, 2017; Shahzad et al., 2019). The corporate strategy has a significant impact on the level of corporate risk-taking. Managers, in general, are key stakeholders who play a vital role in shaping business strategy. Managers with aggressive business behaviors and managers with conservative business behaviors reflect two types of investing behaviors. Managers with aggressive behaviors often invest in high-risk projects, develop new products or services that challenge the market, or may enter the competition in new markets. Aggressive behaviors may contribute to the firm's investment risk and cause fluctuations in the firm's revenue, eventually increasing the corporate's risk-taking level. A higher level of corporate risk-taking may encourage corporate management to continue focusing on strategic investment for long-term development and competitive advantage. However, excessive risk exposure would decrease firm value due to resource constraints (Poletti-Hughes & Williams, 2019). In situations where firms are facing high corporate risk-taking, the managers' aggressive level may be reduced. Therefore, the manager may make appropriate decisions and focus on enhancing capital allocation efficiency, possibly contributing to reductions overinvestment problem to increase investment efficiency. Additionally, based on the aspect of information asymmetry, corporate risk-taking may be perceived by the market as a positive signal, which

can significantly boost a firm's value (Imhof & Seavey, 2014). Consequently, firms with a high level of risk-taking consent willingly disclose critical information that helps all external stakeholders understand the internal operation that reflects manager behavior, which contributes to alleviating agency problems, moral hazard, and protecting information asymmetry. In this case, managers tend to improve the investment decision process, including reducing opportunistic management behavior, reducing agency conflicts, and redirecting management toward optimal behavior, which is of great importance for an increase in optimal investment efficiency, as well as García-Granero et al., (2015), which states that the level of corporate risk-taking reflects the degree of trust between shareholders and managers, contributing to reducing agency problems and possibly contribute to the reduction overinvestment or underinvestment problems.

In contrast, managers with conservative behaviors are more likely to be interested in traditional goods or services that provide low risk, generating stable income. Consequently, they are faced with controllable risk, which limits the amount of corporate risk-taking which is consistent with Bin-Feng, et al., (2021) stated that a conservative working capital strategy diminishes overall corporate risk-taking by reducing the level of operational exposure and financial risk. The low volatility in an entity's EBIT indicates that the entity faces low business risk. However, focusing within the same market, which may not have competitiveness, as well as not exploring new products, may have an impact on the firm's growth potential. If managerial performance assessments are tied to firm performance, poor management outcomes can affect the stability of managers' positions. Therefore, poor management outcomes may be a key important factor driving managers to explore investment opportunities, especially value-enhancing projects, and decide to invest in such projects. The level of conservation investment behavior may be reduced, the underinvestment problem could be alleviated, increasing the level of investment efficiency. Moreover, under circumstances where managerial performance assessments are tied to firm performance, due to the willingness to take risks has a significant impact on the amount of corporate risk-taking (Yan et al., 2021), therefore the low willingness to take risks of conservative managers thus leads to the low level of corporate risk-taking. The level of conservation investment behavior may not decrease. Managers may persist in rejecting investments in high risk but firm value-enhancing projects or innovation activities because high risk project accompanies a higher degree of uncertainty, increasing the variation of the firm's operation (Kosmidou & Ahuja, 2019; Anderson et al., 2012), the results of these high project may deviate from expectations and affect firm performance and inevitably affect job stability. This case shows that the underinvestment problem persists, reflecting that the investment efficiency is low.

Conclusively, high levels of corporate risk-taking may drive managers to make appropriate investment decisions and focus on enhancing capital allocation efficiency as excessive risk exposure would decrease firm value due to resource constraints. Additionally, firms with a high risk-taking must disclose more essential information. The level of information asymmetry, the potential for agency problem, moral hazard and opportunistic management behavior could be reduced, leading to an increase in investment efficiency. Based on the above findings and the conclusion relating to the association of the level of corporate risk-taking on investment efficiency, this study presents the second hypothesis as under

H2. The level of corporate risk-taking has a positive impact on investment efficiency.

The Interacting Role of Debt Maturity on the Relationship between Corporate Governance and Investment Efficiency (H3)

The excess free cash flow is like a cash buffer that managers can use to invest and face a high level of uncertainty. Unfortunately, excessive free cash flows may not discipline managers

to operate efficiently since managers tend to create an overinvestment problem (Richardson, 2006). The obligations arising from debt financing create some consequence impacts, which can lower the surplus of cash flow, and further limit a manager's ability to overinvest (Aivazian et al., 2005). Thus, high-leverage firms may be unable to invest in new investment projects, even if the projects have a positive NPV, resulting in an underinvestment. Therefore, debt financing can discipline and encourage managers to increase efficiency in every decision-making process (Jensen, 1993), as well as play a role in reducing opportunistic behavior, restraining management discretion in using agency resources, and limiting their tendency to use agency cash flow inefficiently. The expansion of CG had a significant impact on the improvement in investment efficiency and found that debt constraint can enhance the positive association of the CG on investment efficiency (Lei & Chen 2019). In other words, when debt increases, investment efficiency improves as the CG expands.

In general, the underinvestment problem arises when shareholders reject value-enhancing investment opportunities since the advantages of adopting these projects mostly serve debtholders rather than shareholders' wealth (Myers & Majluf, 1984), leading to higher agency cost. As a result, firms with larger potential growth face a greater underinvestment problem, causing them to employ less long-term debt but more short-term debt to address the underinvestment problem (Custodio et al., 2013; Aivazian et al., 2005). Jeon & Oh, (2017) concluded that both debt maturity and investment efficiency were significantly positive. This means that the shorter debt maturity, the higher the investment efficiency, in line with Gomariz & Ballesta (2014) who state that overinvestment is the primary concern of creditors since it is through overinvestment that managers expropriate creditors and minority shareholders, and this inefficiency can be reduced with shorter maturities (Gomariz & Ballesta, 2014). Furthermore, Childs et al., (2005) noted that even though short-term debt can alleviate debt overhang problems, this benefit must be balanced against the cost of liquidity risk, incorporate with short-term debt allows firms to make frequent repricing of debt contracts, thereby, reducing both underinvestment and overinvestment problems, along with Johnson (2003) suggest that short-term debt can alleviate underinvestment problems, firms might shorten the debt maturity to minimize the problem of underinvestment since short-term debt is regarded as a disciplining tool (Johnson, 2003; Ozkan, 2000). Finally, firms are also found to shorten the maturity of the debt to preserve future debt capacity for future growth opportunities (Aivazian et al., 2005; Diamond & He, 2014), as well as Park and Bae (2011) revealed that debt maturity structure plays a role in the correction of capital market imperfections which can contribute to increase in the corporate investment efficiency.

To conclude, debt financing can discipline and encourage managers to increase efficiency. The obligations arising from debt financing can lower the surplus of free cash flow, and further limit a manager's ability to invest. Additionally, it also plays a role in reducing opportunistic behavior, limiting their tendency to use agency cash flow inefficiently. Specifically, short-term debt might discipline management since the fragility caused by short-term debt minimizes managerial moral hazard. Although short loan maturities raise liquidity risk and weaken the optimal financial structure, they can lower the cost of underinvestment problems and lead to the optimal investment decision. Based on the above finding and the preceding discussion relating to the interaction effect of debt maturity on the association between CG practice and investment efficiency, this study proposed the following research hypothesis:

- H3. Debt Maturity plays an interacting role in the association between the corporate governance index and investment efficiency.

The Interacting Role of Debt Maturity on the Relationship between Corporate Risk-Taking and Investment Efficiency (H4)

Corporate debt financing is one of the mechanisms used to control potential agency conflicts between managers and shareholders (Anginer et al., 2022), resulting in a decrease in the manager's opportunistic behaviour (Jensen, 1993). In particular, the lenders will analyse firms and managers before the new short-term debt contract is rolled over, thus, shortening the debt maturity suggests that firms may be more appropriately managed (Ortiz-Molina & Penas, 2008), and potentially conflicting interests are reduced.

Short-term debt's characteristics of the flexibility and the ability to fund the required amount faster than long-term debt make it frequently the preferred source of funding in cases where firms have limited and insufficient funds for investment, which often results in underinvestment. Although short debt maturity can decrease incentives to underinvestment, this advantage must be balanced with the higher liquidity risk (Childs et al., 2005), in accordance with Johnson, (2003), who stated that the firm compares the cost of underinvestment problems against the cost of liquidity risk when deciding on short-term financing.

More importantly, in the case firms are facing business risk, as reflected in high corporate risk-taking, which is expected to have a positive influence on investment efficiency due to a decline in aggression, overconfidence, and managerial opportunism behavior of manager, if firms still face severe financial constraint, such as the high proportion of short-term debt, then pressure or constraints arising from short-term debt financing could exert pressure on management to accelerate efficiency in resource allocation, focusing on value-enhancing investment projects, reducing the possibility of investing in value-destroying projects. Corporate investment behaviors of managers that are expected to change are all likely to result in a decline in the over-underinvestment problem, leading to the higher investment efficiency.

To summarize, the proportion of short-term debt may accelerate investment decision made by firms with high corporate risk-taking aiming to optimize resource allocation. Executives will be pressured by both business risk and financial risk. Managers with conservative behaviors are aware of the unavoidable pressures that result in a change in investment decision behaviors, while managers with aggressive behaviors are likely to change their investment behaviors in long-term projects that require high investment and are full of uncertainty. The chances of an ineffective investment are likely to be reduced. Beneficial projects will be more considered and more efficient in decision-making. In light of the above findings and the analysis relating to the interaction effect of debt maturity on the association between corporate risk-taking and investment efficiency, this study proposed the following research hypothesis:

H4: Debt Maturity plays an interacting role in the association between corporate risk-taking and investment efficiency.

Conclusion

Several previous studies on corporate governance and investment efficiency were explored to identify research gaps, while annual reports by Thailand's regulators and raw data from the SETSMART database were then analyzed to determine the current problems Thai firms are facing. Once the research gaps and problem statements were clearly identified, the principles of corporate governance and corporate risk-taking were extensively studied in relation to investment efficiency. Thus, corporate governance and corporate risk-taking were defined as the two main explanatory variables, which were expected that affect investment efficiency. In addition, debt maturity is proposed as an interacting variable, which might affect the relationship between corporate governance, corporate risk-taking and investment efficiency. The outstanding novelty of this study is the procedures for constructing a CG index, which is developed by integrating more than 70 different criteria to reflect the CG practice of

Thai firms in all dimensions. Four of the research hypothesis are outlined in a conceptual framework, which can be developed into a research proposal for further testing.

References

- Aivazian, V., Ge, Y., & Qiu, J. (2005). The impact of leverage on firm investment: Canadian evidence. *Journal of Corporate Finance*, 11(1-2), 277-291.
- Alam, M. P., & Firmansyah, A. (2019). The Effect of Financial Reporting Quality, Debt Maturity, Political Connection, and Corporate Governance on Investment Efficiency: Evidence from Indonesia. *International Journal of Innovation, Creativity and Change*, 7(9), 39-56.
- Anderson, R. C., Duru, A., & Reeb, D. M. (2012). Investment policy in family controlled firms. *Journal of Banking & Finance*, 36(6), 1744-1758. <https://doi.org/10.1016/j.jbankfin.2012.01.018>
- Andries, A. M., Balutel, D., Ihnatov, I., & Ursu, S. G. (2020). The nexus between corporate governance, risk taking, and growth. *PLoS one*, 15(2).
- Anginer, D., Demirgüç-Kunt, A., Simsir, S. A., & Tepe, M. (2022). Is short-term debt a substitute for or complementary to good governance? *Borsa Istanbul Review*, 22(2), 197-208.
- Ararat, M., & Yurtoglu, B. B. (2015). The Effect of Corporate Governance on Firm Market Value and Profitability: Time-Series Evidence from Turkey. *SSRN Electronic Journal*.
- Bargeron, L. L., Lehn, K. M., & Zutter, C. J. (2010). Sarbanes-Oxley and corporate risk-taking. *Journal of Accounting and Economics*, 49, 34-52.
- Bhuiyan, B. U., Cheema, M. A., & Man, Y. (2021). Risk committee, corporate risk-taking and firm value. *Managerial Finance*, 4(3), 285-309. <https://doi.org/10.1108/MF-07-2019-0322>
- Biddle, G. C., Hilary, G., & Verdi, R. S. (2009). How Does Financial Reporting Quality Improve Investment Efficiency? *Journal of Accounting and Economics*, 48(2-3), 112-131. doi:10.2139/ssrn.1146536
- Bimo, I. D., Silalahi, E. E., & Kusumadewi, N. G. (2021). Corporate governance and investment efficiency in Indonesia: the moderating role of industry competition. *Journal of Financial Reporting and Accounting*, 20(2), 371-384. <https://doi.org/10.1108/JFRA-12-2020-0351>
- Bin-Feng, C., Mirza, S. S., Ahsan, T., Safdar, R., Iqbal, A., & Hayat, M. (2021). Family control and corporate risk-taking in China: Does working capital strategy matter? *Economic Research-Ekonomska Istraživanja*. <https://doi.org/10.1080/1331677X.2021.2013270>
- Black, B., Jang, H., & Kim, W. (2006a). Does corporate governance predict firms' market values? Evidence from the Korean market. *The Journal of Law, Economics, and Organization*, 22, 366-413. <https://doi.org/10.1093/jleo/ewj018>
- Bromiley, P. (1991). Testing a causal model of corporate risk taking and performance. *Academy of Management Journal*, 34, 37-59.
- C. Jensen, M., & H. Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Chen, F., Hope, O. -K., Li, Q. L., & Wang, X. (2011). Financial Reporting Quality and Investment Efficiency of Private Firms in Emerging Markets. *The Accounting Review*, 1255-1288.
- Chen, S., & Xie, Z. (2015). Is China's e-Governance Sustainable? Testing Solow IT Productivity Paradox in China's Context. *Technological Forecasting and Social Change*, 96, 51-61. <https://doi.org/10.1016/j.techfore.2014.10.014>
- Cheng, M., Dhaliwal, D., & Zhang, Y. (2013). Does investment efficiency improve after the disclosure of material weaknesses in internal control over financial reporting? *Journal of Accounting and Economics*, 56(1), 1-18. <https://doi.org/10.1016/j.jacceco.2013.03.001>

- Cheng, Q. (2021). Corporate Strategy and Risk-Taking Level—Based on the regulatory Role of Audit Quality. *Open Journal of Business and Management*, 9, 1631-1646. <https://doi:10.4236/ojbm.2021.94089>
- Childs, P. D., Maurer, D. C., & Ott, S. H. (2005). Interactions of corporate financing and investment decisions: The effects of agency conflicts. *Journal of Financial Economics, Elsevier*, 76(3), 667-690.
- Chung, K. H., & Zhang, H. (2011). Corporate governance and institutional ownership. *Journal of Financial and Quantitative Analysis*, 46(1), 247-273. <https://doi:10.1017/S0022109010000682>.
- Core, J. E., Guay, W. R., & Rusticus, T. O. (2006). Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations. *The Journal of Finance*, 61(2), 655-687.
- Custodio, C., Ferreira, M., & Laureano, L. (2013). Why are US firms using more short-term debt? *Journal of Financial Economics*, 108(1), 182-212. <https://doi:10.1016/j.jfineco.2012.10.009>
- Daspit, J. J., Long, R. G., & Pearson, A. W. (2019). How familiness affects innovation outcomes via absorptive capacity: A dynamic capability perspective of the family firm. *Journal of Family Business Strategy*, 10(2), 133-143. <https://doi:10.1016/j.jfbs.2018.11.003>
- Diamond, D. W., & He, Z. (2014). Theory of Debt Maturity: The Long and Short of Debt Overhang. *The Journal of Finance*, 69(2), 719-762. <https://doi:10.1111/jofi.12118>
- Dong, B. B. (2014). Do Risks Need to Be Balanced: The Inverted U-Shaped Relationship between Risk-Taking and Performance of New Enterprises and the Mediating Role of Entrepreneurial Ability. *Management World*, 1, 120-131.
- Ehie, I. C., & Olibe, K. (2010). The effect of R&D investment on firm value: An examination of US manufacturing and service industries. *International Journal of Production Economics*, 28(1), 127-135.
- García-Granero, A., Llopis, O., Fernández-Mesa, A., & Vidal, J. A. (2015). Unraveling the link between managerial risk-taking and innovation: The mediating role of a risk-taking climate. *Journal of Business Research*, 68(5), 1094-1104. <https://doi:10.1016/j.jbusres.2014.10.012>
- Gomariz, M. F., & Ballesta, J. P. (2014). Financial reporting quality, debt maturity and investment efficiency. *Journal of Banking & Finance*, 40(C), 494-506.
- Grenadier, S. R., & Wang, N. (2005). Investment timing, agency, and information. *Journal of Financial Economics*, 75, 493-533. <https://doi:10.1016/j.jfineco.2004.02.004>
- Habib, A., & Hasan, M. M. (2017). Business strategy, overvalued equities, and stock price crash risk. *Research in International Business and Finance*, 39, 389-405. <https://doi:10.1016/j.ribaf.2016.09.011>
- Homayoun, S. (2015). Agency theory and corporate governance. *International Business Management*, 9(5), 805-815. <https://doi:10.3923/ibm.2015.805.815>
- Imnof, M. J., & Seavey, S. E. (2014). Corporate risk-taking, firm value and high levels of managerial earnings forecasts. *Advances in Accounting, incorporating Advances in International Accounting*, 30, 328-337. <https://doi:10.1016/j.adiaac.2014.09.004>
- Jacoby, G., Liu, M., Wang, Y., Wu, Z., & Zhang, Y. (2019). Corporate governance, external control, and environmental information transparency: Evidence from emerging markets. *Journal of International Financial Markets, Institutions and Money*, 58, 269-283. <https://doi:10.1016/j.intfin.2018.11.015>
- Jensen, M. C. (1993). The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems. *The Journal of Finance*, 48(3), 831-880. <https://doi:10.1111/j.1540-6261.1993.tb04022.x>

- Jeon, H. J., & Oh, H. M. (2017). Debt Maturity and Investment Efficiency Evidence from Korea. *Journal of Applied Business Research (JABR)*, 33(6), 1081-1094. <https://doi:10.19030/jabr.v33i6.10047>
- Jin, X., & Yu, J. (2017). Government governance, executive networks and corporate investment efficiency. *China Finance Review International*, 8(2), 122-139. <https://doi:10.1108/CFRI-06-2016-0053>
- John, K., Litov, L., & Yeung, B. (2008). Corporate governance and risk-taking. *The Journal of Finance*, 63, 1679-1728. <https://doi:10.1111/j.1540-6261.2008.01372.x>
- Johnson, S. A. (2003). Debt Maturity and the Effects of Growth Opportunities and Liquidity Risk on Leverage. *Review of Financial Studies*, 16(1), 209-236. <https://doi:10.1093/rfs/16.1.0209>
- Kosmidou, V., & Ahuja, M. K. (2019). A configurational approach to family firm innovation. *Family Business Review*, 32(2), 154-173. <https://doi:10.1177/0894486519827738>
- Kreiser, P. M., Marino, L. D., & Weaver, M. (2002). Assessing the Psychometric Properties of the Entrepreneurial Orientation Scale: A Multi-Country Analysis. *Entrepreneurship Theory and Practice*, 26(4), 71-93.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor protection and corporate governance. *Journal of Financial Economics*, 58(1-2), 3-27.
- Lei, Q., & Chen, H. (2019). Corporate Governance Boundary, Debt Constraint, and Investment Efficiency. *Emerging Markets Finance and Trade*, 55(5), 1091-1108. doi:10.1080/1540496X.2018.1526078.
- Li, K., Griffin, D., Yue, H., & Zhao, L. (2013). How does culture influence corporate risk-taking? *Journal of Corporate Finance*, 23, 1-22.
- Li, Q., & Wang, T. (2010). Financial Reporting Quality and Corporate Investment Efficiency: Chinese Experience. *Nankai Business Review International*, 1(2), 197-213.
- Monetary Policy Department, Bank of Thailand. (2020). Turning Crisis into Opportunity: How to Invest for Sustainable Growth in a Post-COVID-19 World. *Focused and Quick*, 176, 1-10.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187-221.
- Naeem, K., & Li, M. C. (2019). Corporate investment efficiency: The role of financial development in firms with financing constraints and agency issues in OECD non-financial firms. *International Review of Financial Analysis*, 42(C), 53-68. <https://doi:10.1016/j.irfa.2019.01.003>
- Nsour, M., & Al-Rjoub, S. M. (2021). Building a corporate governance index (JCGI) for an emerging market: case of Jordan. *International Journal of Disclosure and Governance*.
- OECD. (2015). G20/OECD Principles of Corporate Governance. Paris: *OECD Publishing*. <https://doi:10.1787/9789264236882-en>
- Ohlson, J. A. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research*, 11(2), 661-687.
- Ortiz-Molina, H., & Penas, M. (2008). Lending to small businesses: the role of loan maturity in addressing information problems. *Small Business Economics*, 30(4), 361-383. doi:10.1007/s11187-007-9053-2
- Ozkan, A. (2000). An empirical analysis of corporate debt maturity structure. *European Financial Management*, 6(2), 197-212. <https://doi:10.1111/1468-036X.00120>
- Park, S. Y., & Bae, H. S. (2011). The effects of financial reporting quality and corporate governance on investment efficiency. *Accounting Information Research*, 29(4), 363-392.
- Pititawatchai, P. (2021, August 25). Thailand Focus 2021: Thriving in the Next Normal. Retrieved from prachachat: <https://www.prachachat.net/finance/news-746350>

- Poletti-Hughes, J., & Williams, J. (2019). The effect of family control on value and risk-taking in Mexico: A socioemotional wealth approach. *International Review of Financial Analysis*, 63, 369-381.
- Ren, T., Liu, N., Yang, H., Xiao, Y., & Hu, Y. (2019). Working capital management and firm performance in China. *Asian Review of Accounting*, 27(4), 546-562. <https://doi.org/10.1108/ARA-04-2018-0099>
- Richardson, S. (2006). Over-Investment of Free Cash Flow. *Review of Accounting Studies*, 11, 159-189.
- Roper, S., & Tapinos, E. (2016). Taking risks in the face of uncertainty: An exploratory analysis of green innovation. *Technological Forecasting and Social Change*, 112, 357-363.
- Seta, M. D., Morellec, E., & Zucchi, F. (2020). Short-term debt and incentives for risk-taking. *Journal of Financial Economics*, 137(1), 179-203. <https://doi.org/10.1016/j.jfineco.2019.07.008>
- Shahzad, F., Lu, J., & Fareed, Z. (2019). Does firm life cycle impact corporate risk-taking and performance? *Journal of Multinational Financial Management*, 51(C), 23-44. [doi:10.1016/j.mulfin.2019.05.001](https://doi.org/10.1016/j.mulfin.2019.05.001)
- Srijunpetch, S. (2012). Principles of Corporate Governance. *Journal of Business Administration, Thammasat Business School*, 35(133).
- Thai Institute of Director Association. (2021). Corporate Governance Report of Thai Listed Companies 2021. Bangkok: *Thai Institute of Director Association*.
- The Stock Exchange of Thailand. (2017). corporate governance code for listed companies 2017. Bangkok: *The securities and exchange commission*.
- The Stock Exchange of Thailand. (2021). SET CEO Survey 2021. Bangkok: *The Stock Exchange of Thailand*.
- Ullah, I., Majeed, M. A., Fang, H. X., & Khan, M. A. (2020). Female CEOs and investment efficiency: evidence from an emerging economy. *Pacific Accounting Review*, 32(4), 443-474.
- Utama, C. A., Utama, S., & Amarullah, F. (2017). "Corporate governance and ownership structure: Indonesia evidence. *Corporate Governance*, 17(2), 165-191. <https://doi.org/10.1108/CG-12-2015-0171>
- Verdi, R. S. (2006). Financial Reporting Quality and Investment Efficiency. <https://doi.org/10.2139/ssrn.930922>.
- Yan, X., Zhang, Y., & Pei, L. -L. (2021). The impact of risk-taking level on green technology innovation: Evidence from energy-intensive listed companies in China. *Journal of Cleaner Production*, 286.
- Yang, H., & Morgan, S. L. (2011). Business Strategy and Corporate Governance in the Chinese Consumer Electronics Sector. *Business strategy and corporate governance: theoretical and empirical perspectives*, 23-46. <https://doi.org/10.1016/B978-1-84334-656-2.50002-8>
- Zhang, H. (2009). Effect of derivative accounting rules on corporate risk-management behavior. *Journal of Accounting and Economics*, 47, 244-264.

The Impact of Corporate Moral Hazard on ESG Performance of The U.S. MNCs: The Interaction Effect of Ownership Structure

Zahra El Shlmani, Haslindar Ibrahim, & Muhammad Tahir

School of Management, Universiti Sains Malaysia, Malaysia

Corresponding email: zahrashalmani@student.usm.my

Abstract

The increase of corporate sanctions and the size and the value of corporate enforcement actions against companies raises questions about their impact on ESG performance. The mainstream literature asserts that corporate moral hazard leads to ESG score plummets. This study aims to investigate the interaction effect of the ownership structure on the relationship between corporate moral hazard _ expressed in the size and value of corporate enforcement actions _ and ESG performance. Using panel data of 385 U.S. MNCs for four years from 2018 to 2021, this study analyses the moral hazard effect on ESG performance. The ratings of five leaders of ESG data providers will be used to represent ESG performance.

Keywords: corporate moral hazard; ESG performance; ownership structure.

Introduction

Another wave of corporate scandals has hit the market in the last decade, reviving attention to the effect of these events on shareholder value, corporate governance (CG) and stock market reactions (Cole et al., 202; Mthombeni, 2021; Antonetti et al., 2020). These failures have highlighted the need for regulators to rethink regulatory frameworks and enforcement, and for corporations to rework their organizational structures and focus on business ethics (Cole et al., 2021). Fraud, scandals, bribery, money laundering, and tax evasion, not to mention greenwash and management misconduct are just a few types of offenses against companies. These corporate offenses have devastating consequences on micro and macro-economic scales.

The global value of bribery in 2021/2022 is estimated to be \$1.75 trillion a year. That is over 1% of GDP. The corruption and bribery risk often co-occur with other financial crimes, especially fraud and money laundering (Kroll, 2022). “The financial cost of fraud 2021”, the latest report from around the world, reveals that the global losses of fraud equate to 6.4% of GDP. That is 6.0%, £3.89 trillion, higher than 2019. This equates to \$5.38 trillion/£4.37 trillion. This sum is over twice the UK’s entire GDP. Yet, reducing losses by 40% would free up over £1.55 trillion. A sum larger than the GDP of all but the seven largest global economies (Gee & Button, 2021). The ACFE (2020) report that a typical fraud case lasts 14 months before detection and causes a loss of \$8,300 per month. That results in a 5% estimated annual loss of the organization’s revenue with a \$1,509,000 average loss per case. Moreover, financial statement fraud schemes are the least common and most costly. Corruption was the most common scheme in every global region. Importantly, the U.S. and Canada have the highest fraud cases worldwide. According to ACFE (2010), owner/executive fraud costs three times as much as management fraud and over nine times as much as employee fraud. Executive-level fraud also takes much longer to detect. The U.N., recently, estimates that money laundering accounts for 2% to 5% of the global GDP. That is \$800 billion to \$2 trillion laundered annually. According to the UNU-WIDER, global individual tax evasion and multinational corporate profit-shifting costs \$427 billion annually.

Given this evidence, a growing body of research has investigated the impact of several types of corporate offenses on investors' and stakeholders' wealth and on corporate performance (CP) as well. The results shows that companies suffer a considerable decline in stock prices, debt ratings, and financial performance (FP) (Kuvvet, 2015; Jory et al., 2015; Mačaitytė & Virbašiūtė, 2018; Utz, 2019; Gam et al., 2021). More importantly, the existent literature of corporate offenses uses mostly one approach, which is the Event Study. Thus, the scarcity of research in this area, besides analyzing limited types of enforcement actions and resorting to a single approach of research, is the motivation to conduct this study. In this regard, this study will explore the total effect of all types of offenses under corporate moral hazard umbrella on ESGP. Corporate lawsuits size and enforcement actions amount represent a possible path which helps to reveal the CP and the reliability of ESG ratings, and this is the main objective of this study.

Multinational Corporations (MNCs) largely drive the process of economic globalization (Kenya, 2020). Although miles away, they interact with small local producers and unify the markets. The MNCs invest huge money in their Research & Development to invent new technological marvels. Thus, they help the technological growth by bringing new innovations and technological advancements to the host, particularly developing, countries. Generally, a MNC has offices and different resources and assets in at least one country other than its home country (Chen, 2020). The typical MNCs are large, complex, powerful, diversified, and usually they are a country's largest corporations (Kefalas, 1991). The U.S. MNCs organize their productions on a global scale by capitalizing on location specific advantages such as low-labor cost in China and India (Lartey et al., 2020).

The idea of MNCs investing in a foreign land is not to better the lives of the host country. They exploit there in order to develop their home countries with the sole objective of maximizing profit (Obamen et al., 2019). Therefore, MNCs are often accused of unethical activities in the host countries such as damaging the E, S, and G aspects, complicity in human rights abuses, and involvement in corruption and pollution (Obamen et al., 2019; Fauzi, 2009). Also, MNCs exploit cross-country differences in environmental regulations by locating dirty operations in countries with lax environmental regulations and by adapting their subsidiaries' environmental policies and standards to local country conditions (Christmann, 2004). Thus, it is crucial to assess sustainability performance of MNCs, especially their ESG scores provided by the ratings agencies.

Measuring the performance of MNCs is important because they have a significant economic contribution in almost all countries worldwide especially the U.S. (Nizharadze, 2019; BEA, 2020). However, the literature does not provide MNCs with a set of KPIs adapted to their distinctly different, sometimes unrelated industries and product lines. The rise in international government cooperation contributes to the harmonization of environmental regulations across countries, e.g., 1997 Kyoto Protocol. Still, the MNCs face complications in ESG implementation among countries in which they operate, e.g., differences in environmental regulations. This study will explore the effect of corporate moral hazard on such performance, i.e., MNCs' ESGP.

The globalization advantages of MNCs coincide with several risks in managing business operations across country borders, e.g., higher levels of complexity, variability, unfamiliarity and uncertainty. To manage these risks, MNCs deploy a wide range of mechanisms including global ESG standards. As different stockholders place more attention to ESG and sustainability ratings, MNCs work hard to conciliate although ESG reports lack transparency, consistency and standardization. ESG ratings recently are almost in the hands of ESG agencies who upgrade ESG to unprecedented levels via utilizing artificial intelligence. For instance, CSRHub aggregates 771 sources of data. The ESG is a highly asymmetric field and ESG providers play an important role in the investment process through their assessments of firms. However, the

methodologies used by ESG data providers are not consistent and can lead to dramatically different outcomes. Additionally, no single source or directory offers a comprehensive overview of data providers (Rating the Raters, 2019). Douglas et al. (2017), have tried to organize the available information. But given the fast growth of the ESG data field, they have become outdated quickly. The ESG providers use different approaches and sets of metrics that are not fully disclosed (Morrison, 2021). The literature reports a lack of homogeneous ESG measurement concepts, even among the ESG leaders (Dorfleitner et al., 2020). Finally, this study grants a splendid chance to compare the performance of five ESG leader providers in the context of MNCs' performance.

Moral hazard is an economic term. It describes a scenario in a transaction in which one party can indulge in risky behavior, knowing that the terms of the agreement will require the other party to assume any negative consequences. The decision to take the risk results from information asymmetry when in a transaction one party has more information than the other. Moral hazard is an economic problem because it leads to an inefficient allocation of resources. If done on a macro scale, it would result in significantly high costs to an economy. It is called "moral hazard" because morality comes into play in determining parties' right and wrong behavior in a transaction. Moral hazard may occur in many fields. When it is transferred to the judicial authorities, it will be defined according to the law acts issued, e.g., fraud, bribery, forgery, etc. Most of corporate crimes result in financial losses and affect CP. In the U.S., it may lead the firms, in the worst case, to file for chapter 7 or chapter 11.

Corporate governance (CG) is still to blame after every wave of U.S. corporate scandals. The scandals at Theranos and Ozy Media are just the latest in a long line of scandals concerning reputable U.S. firms. In 2008 to 2009, the global financial crisis was triggered by the collapse of the major banks and the subprime mortgage problems. Further back in the 1990s, the scandals at Enron, WorldCom, Qwest, and Tyco led to their demise. Consequently, policy makers raised questions about the effectiveness of firms' CG mechanisms. Thus, the Sarbanes Oxley Act of 2002 and Dodd-Frank Act of 2010 were issued to regulate corporate behavior. However, the following years after imposing these regulations, episodes of CG failures continued, e.g., Theranos and Dynegy. They have proven to be disastrous for many giant U.S. firms. This suggests that addressing CG issues in relation to scandals is still worthwhile (Bhagata & Bolton, 2019). Many jurisdictions use securities markets as a tool to improve CG. SEC enforcement applies to firms regulated by the SEC, and DOJ enforces the Act against other individuals and companies' entities.

The Anti-Fraud Collaboration report (2021) states that the U.S. is the highest worldwide in terms of management misconduct in 2019. Workplace misconduct costed the U.S. companies \$20 billion in 2020 (Forbes, 2021). The Fraud Section Corporate Resolutions 2020 involved the imposition of total U.S. amounts of over \$4.4 billion. The U.S. SEC enforcement activity hits the second-highest level ever in 2019 (Reuters, 2019). The commission led a total of 862 enforcement actions, of which 526 constituted standalone actions. According to the U.S. SEC, Division of Enforcement's annual report 2019, more than \$4.3 billion were collected due to disgorgement and penalties. Out of which, \$1.2 billion were returned to harmed investors. In 2020, the SEC brought a diverse mix of 715 enforcement actions. As a result, the SEC obtained judgments totaling \$4.68 billion in disgorgement and penalties – a record amount for the Commission. From the SEED report for the FY 2021, new actions against public companies and subsidiaries slowed to 53 actions. Despite the decrease in the number of actions, SEC monetary settlements in these actions totaled \$1.8 billion, in line with the FY 2012 to FY 2020 average of \$1.6 billion (Choi, 2021). Corporate enforcement actions in the U.S. have increased and will continue to increase because it is a part of everyday life. In 2020, the SEC obtained record-breaking monetary remedies in enforcement actions. Parties in the Commission's actions and proceedings were ordered to pay a total of \$3.589 billion in disgorgement of ill-

gotten gains. Total monetary relief ordered in 2020 was \$330 million higher than in FY 2019, about 8% increase. In 2021, the SEC also obtained judgments and orders for nearly \$2.4 billion in disgorgement and over \$1.4 billion in penalties. This represented a respective 33% decrease and 33% increase over amounts ordered in the prior FY in these categories. The U.S. Environmental Protection Agency (EPA, 2020) assessed over \$360 million in federal administrative and civil judicial penalties. This amount exceeds the annual penalty values assessed in all but three of the past 10 years.

As stated earlier, many acts and regulations were issued in the U.S. to restrict and regulate corporate behavior including CG. Its internal and external mechanisms are the main protective shield against moral breaches. Internal mechanisms, for instance, encourage legal compliance and penalize transgressions as they prevent, detect, and punish the violators. Still, CG in MNCs is more complicated than in domestic companies. MNCs deal with diverse global stakeholder groups who demand more disclosure. This situation results in greater coordination costs and governance complexity in boardrooms and executive offices. Moreover, as some MNCs become listed on multiple countries' exchanges, CG becomes more complex and subjects to more institutional constraints. CG attempts to mitigate moral hazard problems and CEO duality is crucial. It has been consistently recognized as a conflict of interest in CG. In part, because it is also recognized as an indicator of CEO power (O'Conner et al., 2006). Farber (2005) finds that, relative to a control sample, fraud firms have a higher percentage of CEOs that serve as COB. Yet, Beasley (1996) finds no significant relation between duality and fraud (Marshall, 2007). Beasley (1996) finds more outsiders and greater ownership of outside directors decrease the likelihood of accounting fraud. But Beasley finds no evidence that the presence of an audit committee serves to reduce fraud. Fajaryani (2015) states that leverage negatively affects the integrity of the financial statements (Nurdiniah & Pradika, 2017). Zhang (2006) finds firm ownership is related to the probability of a firm committing fraud. Persons (2006) finds that the likelihood of non-financial reporting fraud is lower if: the board of directors has a larger proportion of outside independent directors, the CEO and BOD are separated, and the BOD size is smaller. Wilbanks et al. (2017) and Sharma and Iselin (2012) find audit committee size is significantly and positively associated with enhanced risk monitoring of fraud in financial reporting (Elamer, 2021).

During the first wave of international corporation law reform, a number of countries with concentrated ownership structures implemented reform programs modelled after nations with distributed shareholding and deep liquid capital markets (Hill, 2005). Alexander and Cohen (1999) find federal crime occurs less frequently among public firms with a larger ownership stake. Insiders can also be involved in fraud cases. Key corporate officers, CEOs, and directors appear as individual defendants in corporate crimes. The classic agency theory implies that a higher percentage of insider ownership can better align insiders' incentives to that of the shareholders. Sen (2007) finds that as the gain from fraud increases, more managers may find it optimal to behave fraudulently some of the time unless the gain from fraud is completely offset through the penalty. Another study finds auditors assess the risk of fraud as higher for family firms than for non-family firms.

Additionally, there are more factors highly linked to moral hazard crimes. The cash ratio and the share price are often involved, whether as an incentive or as a consequence of sanctions (enforcement actions) (Liu & Zeng, 2018; Rojas-de-Gracia et al., 2021; Jung & Sharon, 2019; Handoko et al., 2019; Morris et al., 2018; Handoko et al., 2020; Hasan et al., 2021; Sharma & Verma, 2020; Abellingga et al., 2021). Perols and Lougee (2011) and Kirkos et al. (2007) find that when the firm has low liquidity, it engages in fraud in the financial statements. Skousen et al. (2009) find that increased cash needs are positively related to the likelihood of fraud. Bonini and Boraschi (2010) show SCAS firms experience large negative stock price returns around the filing date. Furthermore, the cash ratio and the share price of fraudulent firms impact the

ESGP as concluded by research. Partially, because shareholder return is more vulnerable than a company's FP to consequences of company ESG scandals. Sun et al. (2022) find a higher ESG score associates with lower ESG scandal probability but also associates with more negative returns once the scandal happens (Sun et al., 2022). More research seeks to study the ESGP link with the observed abnormal returns and the liquidity behavior (Azmi et al., 2021; Giese et al., 2019; Kim et al., 2022; Chams et al., 2021).

For this study, the moral hazard proxy consists of enforcement actions amount and corporate law cases size. This study will investigate the impact of the total enforcement actions amount and the corporate law cases size on ESG performance. Using the U.S. MNCs, this study will evaluate the interaction effect of ownership structure on that relationship. The study fills several gaps in the literature. First, the U.S. strongly supports and encourages its MNCs because they are the mainstay of its economy. It also regulates corporate behavior since corporate moral hazards result in civil and criminal offenses. Corporate moral hazards have attracted the attention of researchers because of their close relations with market reactions, corporate legislation, and the business future of firms. Different CG legislations have been established in U.S. jurisdictions, e.g., the Dodd-Frank Act of 2010. Moreover, the U.S. has not adopted a CG code for the U.S. firms. CG matters are provided in state and federal laws, regulations, and listing rules. One such milestone is the Sarbanes-Oxley (SOX) Act of 2002, which imposes a number of CG requirements on all public firms with U.S. traded stock (Zhang, 2007). Moral hazard with CP research includes numerous studies that are conducted out of the CG domain, e.g., (Utz, 2017; Kuvvet, 2015; Mpiana, 2017; Chapman-Davies et al., 2014; Rahman et al., 2009; Nwankwo, 2013; Ehrenhard & Fiorito, 2018; Finnerty et al., 2015). Based on the sturdy relation between CG mechanisms and corporate moral hazards incidence and magnitude, this study will consider CG impact using selected mechanisms. This study asserts the fundamental rule of CG for controlling and preventing corporate moral hazards that provides insights for interpreting study results.

Second, the consequences of the firm's collapse on economics are crucial. The lawsuit affects the company's reputation and the value of its stock. Huge, sometimes unexpected, cash payments of penalties also affect the firm's liquid assets. Thus, the share price and cash ratio are the most often adopted to examine the cascading reactions of companies' sanctions, as will be conducted in this study. Besides, the SEC and DOJ statistics indicate that corporate moral hazards in the U.S. are growing in value and number, expressed in the enforcement actions amount and law cases size. This increase imposes further investigation on its impact on CP and especially on ESGP. However, the event study approach has been used to analyze different enforcement action types, such as fraud and scandals. This is in part because of the lack of corporate moral hazard literature (Rowell & Connelly, 2012; Dembe & Boden, 2000; Baker, 1996). Scarcity of moral hazard literature resulted in fragmented research which focus on specific enforcement types. In fact, all the enforcement action types occur at the same time as a result of weak CG. Hence, the study will investigate the effect of all enforcement action types on ESGP, just as they actually occurred in a given year.

Third, literature on corporate moral hazard often employs the event study methodology. Event studies examine the behavior of firms' stock prices around corporate events. An event study attempts to evaluate the effects of a corporate event, such as a merger, scandal or earnings announcement, by examining the response of the stock price around the event. The usefulness of event studies arises from the fact that the magnitude of abnormal performance at the time of an event provides a measure of the (unanticipated) impact of this type of event on the wealth of the firm's stakeholders. Previous studies have mostly treated corporate enforcement actions indirectly as an event variable. Morris et al. (2019) criticize the existing literature because it has mainly concentrated on the announcement-day impacts of SEC actions like AAER postings by Dechow et al. (1996); Leng et al. (2011), investigation announcements by Feroz et al.

(1991); Karpoff et al. (2008), financial restatements by Anderson and Yohn (2002); and Palmrose et al. (2004), or news of fraud by Karpoff et al. (2012). However, event studies assume that the market's initial reaction to strategic events reflects their economic impact in an unbiased manner. This assumption may hold in some cases or may be biased in others. Using a U.S. sample of horizontal acquisitions, (Oler et al., 2008) show that the positive initial market response to an acquisition announcement is contradicted by negative long-run post-acquisition returns. The contradiction suggests that the initial response is incorrect and that the error is rectified later. Enforcement action types vary in terms of severity and complexity and the degree of harm caused to firm value and the shareholders. Additionally, the event study and enforcement action data capture a different reality. Enforcement action data precisely reflects the time, the number, the amount, and the offense type. Whereas event study uses an offense (event) occurrence time only, regardless of its amount or size or interrelations with other offense types. Accordingly, this study will examine the impact of corporate moral hazard expressed in amounts and sizes and not as an event to overcome this methodological gap. Also, the study will focus on the typical fiscal year of performance instead of other event windows. Thus, this study follows a generic approach, trying to overcome some limitations of current studies to bring more insights into this area of research. Moreover, the event study has technical flaws just as with other methodologies (Henderson, 1990). (McWilliams et al., 1999) demonstrates a critical analysis of CSR Studies based on event study methodology: "event studies alone are inadequate because, at best, they provide estimates of the short-run impact on shareholders only and not on other corporate stakeholders". Furthermore, event study findings are sensitive to even small changes in research design. The authors illustrate the lack of robustness by examining five recent studies of CSR that report conflicting results (McWilliams et al., 1999).

The event study method ignores different events intercorrelations. According to Violation Tracker records, Chevron has an average of 46 violations (lawsuits) per year. If the effect of one type of Chevron violations is examined, it is not possible to isolate or control the impact of other events that occurred within the same event window. Most firms have several violations throughout the year, which is a normal phenomenon results from running a business. Conducting an event study for one type of violations would take that event out of context. The study will take control of this flaw by exploring the overall impact of all enforcement actions occurred in an entire year. Furthermore, the performance of the event study is often expressed as share price which correspond with the shareholders' perspective. The study will use the ESG score that is relevant to all stakeholders and matches with the study underlying theory. The share price depends on the assumption of an efficient market. But prices do not immediately or fully reflect all available information. Only a few corporate enforcement action types are the subject of the present research, e.g., Kim et al. (2022). Several types, e.g., fraud and scandal, are well studied but are hardly measured directly. To our knowledge, this is the first study that tackles the total enforcement action types, value and size, effect on ESGP. These are the main literature gaps this study is attempting to empirically fill. Finally, in line with findings of Abhayawansa and Tyagi (2021); Dorfleitner et al. (2015); and Dimson (2020), the study will examine the performance, consistency and convergent validity of five ESG providers from the perspective of corporate moral hazard.

The U.S. Congress has passed a new U.S. law—the Corporate Transparency Act (CTA)—in 2021. It will require millions of companies to disclose their ownership structures to the U.S. Treasury, as of January 2022. Companies will be required to report information regarding their beneficial owners with a beneficial ownership registry (Johnson et al., 2022). The CTA defined a "beneficial owner" as any individual who, directly or indirectly, either exercises "substantial control" over the entity or owns or controls 25% or more of the "ownership interests" of the entity (Federal Register, 2022). The ownership structure of a company shapes the CG

framework within which decisions are made. And in recent years, several trends have emerged in the ownership structure of the U.S firms (Keller et al., 2022). However, it is not clear whether the firm's leadership and governance are the primary driver of firm-level ESGP or firms with strong ESG policies attract certain types of leader or governance policies. This is due to the mixed academic findings regarding the ownership structure effect (Gillan et al., 2021). The current study attempts to study the ownership structure interaction effect on ESGP in corporate moral hazard. That will add new insights to the relationship among ESGP, ownership structure, CG, and corporate moral hazard.

Literature Review

ESG Conceptual Framework

The 21st century has seen an explosion of interest in the concept of CSR to conduct business. That has led to an increasing level of disclosure and a more firmly defined basis to govern organizations. CSR evolved in the 1980s as the chemical firms tried to improve their public image by providing environmental reports. CSR was a motto for sustainability practices. But it is no longer enough as we approach the government's targets for net zero by 2050. Later, CG concept has become as prevalent as CSR concept within business practice and academic research (Sahut et al., 2019). The term CG refers to the combination of rules, processes or laws by which businesses are operated, regulated or controlled. The board of directors is typically central to CG (McRitchie, 2020). Its relationship to the primary participants, typically shareholders and management, is critical. The IFC (2021) defines CG as directing and controlling the structure and processes of a firm. Today, there is a rising recognition of the significant role of CG in aligning management and stakeholders' interests and reducing agency problems (Mnif & Borgi, 2020). When CG executed effectively, it can prevent corporate scandals, fraud, civil and criminal liability of the firm.

The ESG term is attributed to (The Global Impact 2004) report. When Kofi Annan-the former UN Secretary General asked 50 CEOs of important international financial institutions to join an initiative to study integrating ESG into capital markets (Hill, 2020). Despite having over \$20 trillion in ESG' AUM, there is a lack of a standardized definition that can band companies and regulators (IPFI, 2020; Kempeneer et al., 2021). Although Friedman (1970) asserted that a company's CSR obligation is to maximize profits, many people disagree with him after 50 years (Hill, 2020). Thus, CSR morphs into ESG for many companies (McClimon, 2020). Practically, the ESG disclosure score is used as one of the main indices for identifying CSR effort (Han et al., 2016). The three terms CSR, CG and ESG are used interchangeably, specifically in meta-analysis studies (Han et al., 2016; Friede et al., 2015; Deutsche Bank Group, 2012; Gillan et al., 2021; do Prado et al., 2019; Kuo et al., 2021). CSR and ESG have some overlapping objectives but there are distinct differences between them. While CSR aims to make a business accountable, ESG criteria make such business' efforts measurable. CSR is more qualitative rather than quantitative. But the focus of CSR is primarily on implementing these initiatives rather than tracking their impact. In 2019, the GRI revealed that 93% of the world's largest companies by revenue already report on their ESGP. Currently, there are several reporting standards for companies to select a relevance framework to their industry such as TCFD, GRI, CDSB, CDP, and SASB (Lev, 2020; Matyjaszek, 2020; Gupta, 2021). The ESG-framework is often used by investors and academics to proxy for a company's sustainability and CSR activities (Lumivirta, 2020). On May 21, 2020, The SEC's Investor Advisory Committee endorsed a report outlining its recommendation regarding ESG disclosure policies (SEC, 2020). ESG assets under management are growing rapidly globally. For instance, AUM in ESG ETFs recorded an incredible 223% growth in 2020 despite the market challenges of the global pandemic (Kenway, 2021). The U.S. SEC announced on March 4, 2021, the creation of a new Climate and ESG Task Force in the Division of Enforcement that will develop initiatives

to proactively identify ESG-related misconduct. The Climate and ESG Task Force will evaluate and pursue tips, referrals, and whistle-blower complaints on ESG-related issues (SEC, 2021).

ESG Data Providers

The socially responsible investment has emerged since the 1970s, when the first socially screened mutual funds were founded. In the 1980s, major pension funds took part in the divestment campaign against the apartheid regime in South Africa. As recently as the late 1990s, there was no recognition that companies had human rights responsibilities. In the 1990s, the first research firm was established to market social and environmental data on public companies to the investment community. In 1990, the first of its kind, Domini 400 Social Index, was created. In 1992, the U.N. and 154 countries signed a treaty aimed at controlling environmental impacts globally. By 1994, investors had access to 26 sustainable funds, with assets of around \$1.9 Billion. In 1997, the Kyoto Protocol is operationalized with 192 countries pledging to limit greenhouse gases emissions. In the same year, the GRI was founded in Boston. In 2011, The SASB has been launched to standardize sustainability measurements across 77 industries. In 2020, there was no doubt that the past year had accelerated the need for CSR and ESG. The Covid-19 pandemic highlight gaps in healthcare systems and access across the world. The U.S. was forced to confront the impacts of systemic racism in waves of protests and dialogue that continues to shape 2021. In 2020, the SEC's investment committee created an ESG disclosure framework. It aims to produce consistent and comparable information without the use of a third-party rating agency to facilitate investor decisions. ESG agencies have emerged in response to the demands of investors who require data of companies to invest in more sustainable business (Escrig-Olmedo et al., 2019). In 2021, ESG related funds were breaking records and were not showing any indication of slowing down. Today, the ESG ecosystem includes a large and complex array of actors. The current boom in ESG investing began in the aftermath of the 2008 financial sector meltdown, which implicated failures by government and the financial industry alike. Globally, as of 2018 and continuing to grow since, there are upwards of 600 ESG standards and frameworks, data providers, ratings, and rankings (Wong & Petroy, 2020; Hawley, 2018). Bikmetova and Pirinsky (2022) study the impact of ESG rating agency coverage on company policy. They find as the firm's ESG coverage expands, its ESG ratings improve, hazardous emissions decline, board diversity improves, and institutional ownership and valuation ratios increase.

A straightforward way to know which company performs the best in terms of ESG practices is to check its index by ESG agencies. A considerable amount of CP research employs MSCI ratings such as Lee and Maxfield (2015), Weber and Saunders-Hogberg (2020), and Serafeim and Yoon (2021). Kim et al. (2013) use MSCI indices and find that firms' CSR performance is positively associated with their contemporaneous stock returns in the Korean market. NASDAQ reviewed the 2019 MSCI's ESG rankings for the S&P 500 that comprised 493 of the 505 firms who received rankings. Their results show firms considered sustainability leaders under the MSCI framework exhibited both higher returns and less risk, and vice versa. Habermann and Fischer (2021) find the level of firms' CSP, using Refinitiv ESG scores, seems to have no positive effect on the likelihood of bankruptcy during times of economic upswing. A recent study by Berg et al. (2021) documents widespread rewriting in the historical Refinitiv ESG ratings across two data downloads in 2018 and 2020. The changes are driven by reassessments of industry and country level drivers of ESG risks. They show that the data rewriting is an ongoing rather than a one-off phenomenon (Berget al., 2021). Fabozzi et al. (2021) find weak evidence of a negative impact of Sustainalytics' ESG aggregated and disaggregated scores on several measures of CP. However, they find a weak positive relationship between ESG and stock market-based measures. Berg et al. (2020) find that the correlation between MSCI and Sustainalytic' ratings is 42%. Serafeim and Yoon (2021)

investigate whether MSCI, Sustainalytics, and Thomson Reuters' ESG ratings predict future ESG news and the associated market reactions. They find that the consensus rating predicts future news, but its predictive ability diminishes for firms with large disagreement between raters. Gyöngyörová et al. (2021) explore the consistency validity of the well-recognized ESG data providers, namely Sustainalytics, RobecoSAM, Bloomberg, ISS, and CDP. The factor analyses show that the consistency validity across ESG data depends on the industry type and the country of domicile. Using CSRHub data, studies confirm the positive impact of CSR level on the market capitalization of companies and the firm value (Lin et al., 2019; Markhaichuk, 2017).

Corporate Moral Hazard

Although the term “moral hazard” originated in the insurance industry, it is also used outside that industry. Moral hazard has been used to describe the unethical decision making of managers, which can lead to scandals and criminal behavior. Moral hazard refers to the trait of dishonesty or character defects in an individual that increase the frequency or severity of loss. Moral hazard may occur in any agency relationships. In managerial decision making, moral hazard implies violations of managers' obligations and can lead to negative results. Many corporate scandals have been exposed on a global scale and have caused huge losses to firms. Most of them were caused by the managers (Demise et al., 2006). Theories of modern enterprises show that the inconsistency between shareholders' residual claims on income and the final control will lead to cheap votes. In fact, shareholders' control becomes cheap because residual claims and control don't match, and the behavior of free rider produces. Hülsmann (2006) defines moral hazard as: The incentive of a person A to use more resources than he otherwise would have used, because he knows that B will provide some or all of these resources. The important point is that this occurs against B's will and B is unable to sanction this expropriation immediately (McCaffrey, 2017). The concept of expropriation emphasizes moral hazard is about how individuals own and allocate resources. Therefore, it is understood as a property rights problem.

The existing empirical literature uses several subtopics while studying the moral hazard impact. Notable thematic issues include fraud, scandals, reputation, bribery, money laundering, tax evasion, greenwash and management misconduct. However, measuring moral hazard lacks scholar's consensus. As a result, Lee (2010) has introduced an indirect method to proxy moral hazard based on eight variables, such as leverage, R & D, and ADVERT. Vogler and Eisenegger (2019) define scandals as the denial of reputation. The main definitory element of a scandal is publicity. The media hence serves to generate the publicity that turns the wrongdoings of corporations into scandals. Commonly, the concept of reputation is defined as the evaluation of a firm by its stakeholders or in the media (Fombrun, 1996). Zhang (2007) empirically examines whether certain CG mechanisms are related to the probability of a firm being associated with corporate scandal. He finds that firm ownership is related to the probability of a firm committing fraud, whereas other CG characteristics are not. Utz (2019) studies the reliability of ESG assessments in the case of corporate scandals. He uses the press release of corporate scandals, which are seen as being unexpected events, and analyzes ESG assessments before, during, and after the event year. He finds a significant decline in retrospective controversy indicators during the period in which the scandals are released. Subsequent to the scandals, he documents a rebound of these indicators. Jory et al. (2015) examines corporate scandals of U.S. public firms. The findings suggest that, in the short run, investors react adversely to such events and that disobedient CEOs end up costing their shareholders dearly. Scandals are more likely to occur among large firms, firms with insiders on the board, and where the value of options granted to a firm's managers is substantial. However, firms with more cash flows are less likely to be involved in such scandals, and their

stock returns are less likely to be affected. A point of relief for investors is the damage being limited to the short run.

No precise legal definition of fraud exists. Many of the offenses referred to as fraud are covered by the Theft Acts of 1968 and 1978. Generally, the term is used to describe such acts as deception, bribery, forgery, extortion, corruption, theft, conspiracy, embezzlement, misappropriation, false representation and collusion. Fraud is a human endeavor that involves rationalization, motivation, purposeful intent, intensity of desire, self-deception, and risk of apprehension (Bonini & Boraschi, 2013). According to Meridian Research, in 2005 alone, the cost of U.S. companies not using anti-fraud applications was \$60 billion. Organizations are said to lose around 6% of their annual revenue to fraud committed by internal employees. Kuvvet (2015) finds the revelation of corporate fraud has an adverse effect on liquidity not only in the short term but also in the long term. He finds that the complexity and severity of fraudulent activities do not further reduce liquidity; rather, the existence of fraud is what matters to investors. The U.S. model of CG is not completely flawed, though, since many managers still chose not to commit fraud.

The main issue of the (moral hazard) studies is the lack of a conceptual and methodological literature framework that collects those issues studied in this field. This field of knowledge lacks in defining the relationships between cases of scandals, extortion, corruption, fraud, etc. In addition, there is still a need to know the common causal factors since they have been studied within the framework of CG. The terms ‘scandal’ and ‘crisis’ are often applied as synonyms without a clear definition of their distinctions. However, Driel (2018) presents a conceptual framework of financial fraud and scandals as an attempt to fill this literary void.

A broad range of moral hazard studies have been conducted using the event study approach since the early 1970s. The academicians investigate the flaws of the event study approach which weakens those studies’ results, e.g., (Jr, 1990; Borusyak et al., 2021; Binder, 1998; McWilliams et al., 1999). Rao (2016) pinpoints the poor R^2 values and consequently the statistically insignificant t-statistic values. (McWilliams et al., 1999) asserts that event studies provide estimates of the short-run impact on shareholders only and not on other stakeholders. Furthermore, their findings are sensitive to even slight changes in research design. The authors illustrate the lack of robustness by examining five recent studies of CSR that report conflicting results. They conclude that these contradictory findings arise from significant differences in research design. They also show why it is inappropriate to draw conclusions regarding the managerial implications of CSR activities from these studies.

Study Variables

The Enforcement Penalty Amount directly and negatively affects the ESGP. Particularly, weak legal systems cannot curb fraud by managers because the probability of being caught is low. And in the event a manager is caught, the penalties are not severe. Bhattacharya and Daouk (2002, 2005), Berkowitz et al. (2003), and Pistor et al. (2000) argue that law enforcement is more important than the written code in promoting financial development. Bhattacharya and Daouk (2005) find the cost of capital rises in countries that introduce, but do not enforce, insider trading laws. Bailey et al. (2022) argue that ESG reporting mandates are less effective in the absence of enforcement. Coffee (2007) points out that: in terms of actual enforcement actions and sanctions imposed, the U.S. is an outlier. It imposes financial penalties that dwarf those of any other jurisdiction. This system has no true functions analogue anywhere in the world; the U.S. prosecutes securities offenses criminally and does so systematically. (Gowin et al., 2021) examine the valuation effects of anti-money laundering enforcement actions and OFAC sanction on U.S. financial institutions. The enforcement action was measured as (a) a dummy (b) a logarithmic of the monetary penalty and (c) a penalty amount to the total assets. They find

the three variables are negative and significant. Bunks (2021) examines if Health Care Compliance related enforcement actions are effective at improving firms' CSR scores. He finds the CSR score significantly increases three years following the settlement. However, Tran and O'Sullivan (2018) find that firms with superior CSR are unlikely to receive SEC enforcement actions for financial misrepresentation. Also, the participation in CSR initiatives may add value by reducing sanctions and tempering negative judgments (Godfrey et al., 2009).

Generally, the event study investigates the effect of one type of law-cases on CP, mainly the stock price. As one type of law-case offense affects the firm's performance, this study hypothesizes the total law-case offenses that took place in a given year, have a significant impact on CP, especially the ESGP. Specifically, there is an inverse link between the ESGP and the volume and value of law-case actions. This study argues that the high law-cases size regardless of being settled, dismissed, or ongoing (as long as it is filed) would negatively affect the ESGP. Different types of law-cases offenses, perhaps, have different impacts on ESGP. Still, studying their total effect is more logical and practically easier than investigating the impact of one type only. Companies are actually exposed to all types of lawsuits. Under new rules proposed by the Obama administration issued in 2014, titled the Fair Pay and Safe Workplaces Executive Order, the government is required to contract only with companies that have a "satisfactory record of performance, integrity, and business ethics" (Chatterjee, 2016). Accordingly, the vast majority of federal contractors have clean records. The Department of Labor estimates that the overwhelming majority of firms with federal contracts have had no federal workplace violations in (law cases) the past three years. The decreasing size of companies' records indicates violators reform their practices. Bikmetova and Pirinsky (2022) indicate companies with more ESG coverage had a smaller number of enforcement actions for consumer and labor violations. The institutional ownership in the U.S. rose from 32% to 73% of the overall market from 1980 to 2017. Martínez-Ferrero and Lozano (2021) and Nekhili et al. (2019) cite that institutional holder exerts strong control over managerial activities and increases ESGP (Lahouel et al., 2014). Borghesi et al. (2014) find institutional ownership is negatively related to firms' ESG scores. (Tang et al., 2021) show that firms connected to rating agencies through institutional ownership, i.e., "sister firms", receive higher ESG ratings. The connection induced ESG rating inflation is more pronounced when institutional investors own a larger share of the rating agency. That raise concerns about the integrity of ESG ratings, which are affected by the conflict of interest in market practices.

Corporate ownership is an internal CG mechanism, and the existence of concentrated ownership is a reality (Roy, 2016). Authors in this area have employed different definitions of ESGP/CSRP and focus on different structures of ownership (Gillan et al., 2021). Kao et al. (2018) find companies with different ownership have different motivations for participating in CSR (Kuo et al., 2021). Insiders are more organized than diffused shareholders and will have a greater probability of securing high premiums with takeovers (Fauzi & Locke, 2012). Insiders commit corporate fraud when they take advantage of opportunities to gain private benefits (Lei et al., 2020). Beck and Baghat (1997) find that firms sued under SEC rule 10b-5 "insider trading" are more likely to experience episodes of poor CP compared to non-sued firms. Owner/executive perpetrators are responsible for the highest size of fraud, with the longest fraud scheme duration, which is 24 months. Insiders who have witnessed an enforcement action have a lower probability of future conviction than their unexposed peers (Davidson & Pirinsky, 2022).

Shanker and Astrachan (1996) categorize family firms based on family management (a narrow definition) or based on ownership proportion (a wide definition). What makes a family firm unique is the influence of a family in the ownership, management, governance, and succession, as well as in the company's objectives and strategies (Rodriguez-Ariza et al., 2016). Family firms have a higher proportion of insider ownership (Abeysekera & Fernando, 2020).

Bennedsen et al. (2007) state that despite family CEO successors' negative impact on CP, family ownership remains remarkably persistent. Faller and Knyphausen-Aufseß (2018) find that 12 report a positive relationship between family ownership and ESGP, while four find a negative one, and three find no significant relation. Rees and Rodionova (2015) reported that family ownership negatively affects the company's ESGP. Saeed et al. (2022) find that family ownership positively effects ISO 14001 environmental certification.

In the U.S., a corporation is governed by a board of directors, which has the power to choose an executive officer CEO. Combining the positions of chairman and CEO grants greater power to the CEO, who gains the title of chairman after having outperformed his/her peers. Pham and Pham (2020) conclude a significant CEO attribute that has been documented as being connected to firms' ESG/CSR profiles is CEO duality. Velte (2020), for instance, concludes that while ESGP has a positive impact on FP, the link is more pronounced by CEO power (Velte, 2020). Yet, Romano et al. (2020) show that CEO duality negatively moderates ESGP relations.

The research has found firms' ESG activities are associated with variations in board and CEO characteristics (Gillan et al., 2021). However, Hussain et al., (2018) cannot find any relevance of board size with the environmental dimension of SP using U.S. firms. Lin and Nguyen (2022) find board size positively affects CSRhub score. Finally, the board of directors poses the greatest risk for occupational fraud (ACFE, 2020).

The audit committee (AC) is an operating committee of the Board of Directors charged with oversight of financial reporting and disclosure. After a scandal, firms whose reports are audited did not show significant changes in their ESGP. Also, firms whose reports are not audited experienced a large drop in the ESGP (Giudice & Rigamonti, 2020). According to ACFE (2020), fraud is 43% initially detected by internal AC. In contrary, AC size does not affect fraudulent financial reporting (Sari et al., 2020).

The correlation between the ESG score and leverage is not immediately obvious. Barnea and Rubin (2010) find a negative relationship between leverage and ESG and argue for employing the overinvestment theory (Drempetic et al., 2019). ESG/CSR practices can also act as insurance against firm-specific Legal Risk. Hong and Liskovich (2015) provide evidence that firms with higher ESG/CSR ratings receive more lenient settlements from prosecutors and have higher market valuations. Also, Schiller finds suppliers face a lower likelihood of social and environmental lawsuits when their corporate customers have better environmental and social policies (Gillan et al., 2021). Dechow et al. (2011) and Smaili et al. (2009) find a positive relationship between the level of debt and the likelihood of committing fraud. In enforcement actions, SCAS firms exhibit decreasing book and market leverage before the filing due to abnormal volumes of equity offerings. Soon after the filing, though, leverage increases sharply and significantly due to the readjustment in equity market value (Bonini & Boraschi, 2013).

The company must liquid its current assets to generate the cash needed to pay the penalty on the due date. Therefore, the cash ratio is significant in establishing a firm's capacity to pay its debts as they become due. The penalty affects not only the company's cash balance but could also lead to bankruptcy. The firm's cash flow is described as the "driver" behind higher ESGP. According to Koller (2021) ESG initiatives can increase a firm's cash flow in five ways: revenue growth, cost reductions, reduced regulatory and legal interventions, employee productivity uplift, and investment and asset optimization. Perols and Lougee (2011) and Kirkos et al. (2007) find that when the firm has low liquidity, it engages in fraud in the financial statements. Corporate scandals affect both firm and industry level by leading to a contraction in security offerings and a decrease in stock returns for all industry constituents. Bonini and Boraschi (2010) show that SCAS firms experience large negative stock price returns around the filing date. Peers' stock prices show signs of contagion, with significant negative cumulative abnormal returns. They show that bond ratings for SCAS firms drop significantly

after the filing and the downgrading is stable up to three years after the event, suggesting that managerial misconduct has meaningful effects on all classes of security holders. Another study finds that the largest penalties are not imposed by regulators or courts. Rather, they are imposed by the market. On average, firms lose 38% of their market value when news of their misconduct is reported (Karpoff et al., 2009). Gande and Lewis (2009) document significantly negative stock price reactions to shareholder-initiated class action lawsuits.

Method

The study will investigate the interaction effect of ownership structure on the relationship between corporate moral hazard and ESGP. The study will be conducted using a sample of 385 parent public U.S. MNCs in 2018, 2019, 2020, and 2021. It uses secondary data from the S&P Cap IQ database, five ESG providers' terminals, and the Violation Tracker database. The nonprobability-purposive sample is adopted using selected criteria.

Table 1. Study Variables

Variable Name	Acronym	Measure	Reference
Dependent Variable ESGP			
S&P Global	SPG	A score scale ranging from 0 to 100, with 100 is the best.	(Gyönyörövá et al., 2021)
MSCI	MSC	An ordinal score from 0 to 10, with 0 showing minimal exposure to ESG risk.	(Weber & Saunders-Hogberg, 2020)
Sustainalytics'	SUST	A scale of 0-100 with 0 is the best.	(Serafeim & Yoon, 2021)
CSRHub	CSRH	A scale of 0-100 with 100 is the best.	(Lin et al., 2019)
Refinitiv	RFNTV	A scale of 0-100 with 100 is the best.	(Tasnia et al., 2021)
Independent variables			
Enforced Penalty Amount	ENPEA	The log US\$ of the total penalty amount paid for all offenses at the end of a year.	(Chen et al., 2006; Karpoff et al., 2009).
Corporate Law-Cases Size	LCSIZE	The size of the total law cases for all offense types in the year.	(Zhang, 2007; Naumovska et al., 2020)
Interaction Variables			
Institutional Ownership	INSTI	The ratio of the number of shares held by institutional investors to the total number of shares outstanding.	(Ud Din et al., 2021; Kao et al., 2019)
Insider Ownership	INSOS	The number of shares owned by insider directors divided by the total number of shares issued by the company.	(Kaserer & Moldenhauer, 2007; Ud Din et al., 2021)
Family Ownership	FAMOS	The ratio of the shares held by family offices to the total shares outstanding.	(Shahzad et al., 2019)
Control Variables			
Change of Cash Ratio	ACASH	The % change in Cash from Operations / Total Current Liabilities over the year.	(Olongo, 2013; Morris et al., 2019)
Change of Share Price	ASHAR	The % change in the close share price at the end of the year / the close share price at the beginning of the year.	(Brammer et al., 2006; Fisher-Vanden & Thorburn, 2011)
CEO Duality	CEOD	A dummy variable equals 1 if the position of Chairman and CEO is held by one person and 0 otherwise.	(Tang H.-W. , 2017; Aktan et al., 2018).
Board Size	BSIZE	The number of directors on the board at the end of the fiscal year.	(Kao et al., 2019).
Audit Committee Size	ACSIZE	The number of the audit committee size at the end of the fiscal year.	(Fauzi & Locke, 2012; Bagais & Aljaaidi, 2020).
Leverage Ratio	LEV	Total Debt / Total Capital (Total Debt + Total Equity).	(Chouaibi & Chouaibi, 2021).
Industry	IND	A dummy variable by assigning a number to each industry of the 10 sectors.	(Salo, 2008; Narayanan, 2014).

Variable Name	Acronym	Measure	Reference
Firm Age	AGE	The number of years since the company's inception at the end of the year.	(Elsayed & Paton, 2009; Diebecker et al., 2017).
Year	YEAR	Dummy variables for the years 2018, 2019, 2020, and 2021.	

Discussion

The study combines three important aspects. First, the significant economic impact of MNCs. The world's largest 50 MNCs, their total sales, net income, and degree of internationalization reveals their tremendous impact. These 50 companies made over \$1.5 trillion worth of sales in 1987 which is almost 10% of the world's total production and close to 30% of the U.S. GNP (Kefalas, 1991). The annual revenues of giant MNCs are bigger than entire countries, for instance, Malta's GDP value in 2019 was \$14,989 billion (The World Bank, 2021), whereas Netflix's revenues in the same year were \$20.156 billion (Macrotrends, 2021). Also, the MNCs play outstanding role as they collaborate with political parties and lead decisions or policy making. They possess higher number of employees which contribute to minimizing unemployment rate. Therefore, MNCs have money power, muscle power, managerial power, technology power and political power through which they influence economies worldwide. Thus, measuring the CP of MNCs is critical. For the U.S. MNCs, they can be considered as one of the determinants of U.S. economic power (Nizharadze, 2019). The Bureau of Economic Analysis (BEA) states in its current release dated August 21, 2020, that: "Global current-dollar value added by the U.S. MNCs increased 6.8% to \$5.7 trillion. Value added by the U.S. parent companies, a measure of their direct contribution to U.S. GDP, increased 7.8% to \$4.2 trillion. Worldwide spending on property, plant, and equipment of the U.S. MNCs increased 6.6% to \$912.1 billion. Worldwide research and development expenditures of the U.S. MNCs increased 6.9% to \$381.4 billion. Worldwide employment by the U.S. MNCs increased 1.4% to 43.0 million workers in 2018. U.S. employment by U.S. parents increased 2.1% to 28.6 million workers in 2018. U.S. parents accounted for 66.5% of the global employment by U.S. MNCs" (BEA, 2020).

Second, there have been more than 2000 academic studies published that examine the relationship between ESG and CP Since the early seventies. That reveals the material role of ESG/CP assessments. Management faces a trade-off between environmental and economic performance as a result of an economic disadvantage. The cost to enhance corporate environmental performance are not substantial and are able to generate other managerial benefits such as a higher morale or an increase in productivity. When Bank of America Merrill Lynch looked at 24 major ESG-related controversies from the past six years, the result was a combined loss of \$534 billion market capitalization for large U.S. companies (Fournier & Smith, 2020). Regarding the ESG compliance rate in US, a recent study confirms 100% of firms in the sample chose to report on their sustainability performance. That is higher than the ratio of 96% of G250 the world's 250 largest firms by revenue and 80% of N100 the 100 largest firms in 41 countries (Pareek & Pasumarti, 2021). Furthermore, industry tracker Morningstar (2021) revealed that demand for funds focused on ESG issues jumped in 2020, driving AUM up 29% in the 4th quarter to nearly \$1.7 trillion (Jessop & Howcroft, 2021). Likewise, Bloomberg (2021) stated that ESG's AUM could rise to over one third of the projected \$140.5 trillion globally by 2025. ESG assets are on track to reach \$53 trillion. The U.S. is witnessing the strongest expansion the year 2020 and could dominate the category from 2022 onwards (Diab & Adams, 2021).

Third, as explained in the introduction, corporate moral hazard consequences are burdened, sometimes are fatal. The U.S. is not exception, rather it is the best area to study the

effect of its firms' offenses comparing to its outstanding regulatory system. Especially, with regard to its growing trend of corporate crimes.

Finally, the study combines three remarkable areas of research to study the interaction impact of ownership structure on such a relationship. This will highlight their mutual links and provide extensive empirical insights.

Conclusion

A bunch of statistical estimators will be simulated to generate the best models needed to test the study hypotheses. In brief, several gaps in the literature suggest studying the impact of corporate moral hazard on ESGP of the U.S. MNCs. According to genuine considerations, corporate moral hazard, corporate governance and ESGP are ongoing issues that deserve updating.

References

- Abelingga , D., Midiastuty , P., Suranta , E., & Indriani , R. (2021, March 25). Deteksi fraudulent financial reporting: suatu pendekatan menggunakan accrual based investment ratio dan cash based investment ratio. *Jakman*, 2(2), 115-128. doi:<https://doi.org/10.35912/jakman.v2i2.203>
- Abeysekera, A., & Fernando, C. (2020, April). Corporate social responsibility versus corporate shareholder responsibility: A family firm perspective. *Journal of Corporate Finance*, 61, 1-22. doi:<https://doi.org/10.1016/j.jcorpfin.2018.05.003>
- Adeline Diab & Gina Adams. (2021, February 23). *ESG assets may hit \$53 trillion by 2025, a third of global AUM*. Retrieved from Bloomberg: <https://www.bloomberg.com/professional/blog/esg-assets-may-hit-53-trillion-by-2025-a-third-of-global-aum/>
- Aktan , B., Turen, S., Tvaronavičienė , M., Celik , S., & Alsadeh, H. (2018, April 12). Corporate governance and performance of the financial firms in Bahrain. *Polish Journal of Management Studies*, 17(1), 39--58. doi:<http://dx.doi.org/10.17512/pjms.2018.17.1.04>
- Antonetti, P., Bowen , F., Manika, D., & Higgins, C. (2020, June). Hypocrisy in corporate and individual social responsibility: Causes, consequences and implications. *Journal of Business Research*, 114, 325-326. doi:<https://doi.org/10.1016/j.jbusres.2019.12.016>
- Azmi, W., Hassan, M., Houston, R., & Karim, M. (2021, January). ESG activities and banking performance: International evidence from emerging economies. *Journal of International Financial Markets, Institutions and Money*, 70, 101277. doi:<https://doi.org/10.1016/j.intfin.2020.101277>
- Bagais , O., & Aljaaidi, K. (2020, August 2). Corporate governance attributes and firm performance in Saudi Arabia. *Accounting*, 6(6), 923-930. doi:<http://dx.doi.org/10.5267/j.ac.2020.8.005>
- Bailey, M., Glaeser, S., Omartian, J., & Raghunandan, A. (2022, August 22). Misreporting of Mandatory ESG Disclosures: Evidence from Gender Pay Gap Information. *SSRN*, 1-51. doi:<https://dx.doi.org/10.2139/ssrn.4192257>
- Bătaea, O., Dragomir, V., & Feleagă, L. (2021, March 25). The relationship between environmental, social, and financial performance in the banking sector: A European study. *Journal of Cleaner Production*, 290(125791). doi:<https://doi.org/10.1016/j.jclepro.2021.125791>
- BEA. (2020, AUGUST 21). *Activities of U.S. Multinational Enterprises, 2018*. Retrieved from bea.gov: <https://www.bea.gov/news/2020/activities-us-multinational-enterprises-2018>

- Berg, F., Fabisik, K., & Sautner, Z. (2021, January). Rewriting history II: The (un) predictable past of ESG ratings. (F. W. 708/2020, Ed.) *ECGI*. Retrieved from http://ssrn.com/abstract_id=3722087
- Berg, F., Kölbel, J., & Rigobon, R. (2020, May 17). Aggregate Confusion: The Divergence of ESG Ratings. *FEEN Webinar Series*. doi:<http://dx.doi.org/10.2139/ssrn.3438533>
- Bhagata, S., & Bolton, B. (2019, October). Corporate governance and firm performance: The sequel. *Journal of Corporate Finance*, 58, 142-168. doi:<https://doi.org/10.1016/j.jcorpfin.2019.04.006>
- Binder, J. (1998, September). The Event Study Methodology Since 1969. *Review of Quantitative Finance and Accounting*, 11(2), 111–137. Retrieved from <https://link.springer.com/article/10.1023/A:1008295500105>
- Borusyak, K., Jaravel, X., & Spiess, J. (2021, August 27). Revisiting event study designs: Robust and efficient estimation. *arXiv*. Retrieved from <https://arxiv.org/abs/2108.12419>
- Chams , N., García-Blandón , J., & Hassan, K. (2021, June 23). Role Reversal! Financial Performance as an Antecedent of ESG: The Moderating Effect of Total Quality Management. *Sustainability*, 13(13), 7026. doi:<https://doi.org/10.3390/su13137026>
- Chen, J. (2020, February 25). *Multinational Corporation (MNC)*. (G. SCOTT, Editor) Retrieved September 14, 2020, from Investopedia: <https://www.investopedia.com/terms/m/multinationalcorporation.asp>
- Choi, S. (2021). *SEC Enforcement Activity: Public Companies and Subsidiaries FY 2021*. NYU, Pollack Center for Law & Business. NY: Cornerstone Research. Retrieved from <https://www.cornerstone.com/wp-content/uploads/2021/12/SEC-Enforcement-Activity-FY2021-Update.pdf>
- Chouaibi , S., & Chouaibi, J. (2021, January 13). ESG and corporate financial performance: the mediating role of green innovation: UK common law versus Germany civil law. *EuroMed Journal of Business*. doi:<https://doi.org/10.1108/EMJB-09-2020-0101>
- Cole, R., Johan, S., & Schweizer, D. (2021, April). Corporate failures: Declines, collapses, and scandals. *Journal of Corporate Finance*, 67, 1-11. doi:<https://doi.org/10.1016/j.jcorpfin.2020.101872>
- David Nizharadze. (2019, December). The Impact of American Multinational Companies on the US Economic. *Conference: American Studies International* (pp. 133-140). Tbilisi: ResearchGate. Retrieved from https://www.researchgate.net/publication/340162425_The_Impact_of_American_Multinational_Companies_on_the_US_Economic
- Davidson, R. H., & Pirinsky, C. (2022). The Deterrent Effect of Insider Trading Enforcement Actions. *The Accounting Review* , 97(3), 227–247. doi:<https://doi.org/10.2308/TAR-2020-0003>
- Deutsche Bank Group. (2012, June 15). *Sustainable Investing*. Retrieved from db.com: https://www.db.com/cr/en/docs/Sustainable_Investing_2012.pdf
- Diab, A., & Adams, G. (2021, February 23). *ESG assets may hit \$53 trillion by 2025, a third of global AUM*. Retrieved from Bloomberg: <https://www.bloomberg.com/professional/blog/esg-assets-may-hit-53-trillion-by-2025-a-third-of-global-aum/>
- Diebecker, J., Rose, C., & Sommer, F. (2017, December 8). Corporate Sustainability Performance Over the Firm Life Cycle: Levels, Determinants, and the Impact on Accounting Performance. *Working paper*. doi:<https://dx.doi.org/10.2139/ssrn.3084601>
- do Prado, G., Piekarski, C., da Luz, L., de Souza, J., Salvador, R., & de Francisco, A. (2019, July 21). Sustainable development and economic performance: Gaps and trends for

- future research. *Sustainable Development*, 28(1), 368-384.
doi:<https://doi.org/10.1002/sd.1982>
- Dorfleitner, G., Kreuzer, C., & Sparrer, C. (2020, August 03). ESG controversies and controversial ESG: about silent saints and small sinners. *Journal of Asset Management*, 21, 393–412. doi:<https://doi.org/10.1057/s41260-020-00178-x>
- Drempetic, S., Klein, C., & Zwergel, B. (2019, April 27). The Influence of Firm Size on the ESG Score: Corporate Sustainability Ratings Under Review. *Journal of Business Ethics*, 167-2020, 333–360. doi:<https://doi.org/10.1007/s10551-019-04164-1>
- Driel, H. v. (2018, October 5). Financial fraud, scandals, and regulation: A conceptual framework and literature review. *Business History*, 61(8), 1259-1299.
doi:<https://doi.org/10.1080/00076791.2018.1519026>
- Elamer, C. M. (2021, November 22). Audit committee diversity and corporate scandals: evidence from the UK. *International Journal of Accounting & Information Management*, 29(5), 734-763. doi:<https://doi.org/10.1108/IJAIM-01-2021-0024>
- Escrig-Olmedo, E., Fernández-Izquierdo, M., Ferrero-Ferrero, I., Rivera-Lirio, J., & Muñoz-Torres, M. (2019, February 11). Rating the Raters: Evaluating how ESG Rating Agencies Integrate Sustainability Principles. *Sustainability*, 11(3), 915.
doi:<https://doi.org/10.3390/su11030915>
- Fabozzi, F., Ng, P., & Tunaru, D. (2021, April 12). The impact of corporate social responsibility on corporate financial performance and credit ratings in Japan. *Journal of Asset Management*, 22(2), 79-95. Retrieved from
<https://link.springer.com/article/10.1057/s41260-021-00204-6>
- Fournier, M., & Smith, M. (2020, October 8). *The Changing Tide of the Role of ESG in the U.S.* Retrieved from Kroll:
<https://www.kroll.com/en/insights/publications/compliance-risk/changing-tide-role-of-esg-us>
- Friede, G., Busch, T., & Bassen, A. (2015, December 15). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, 5(4), 210-233.
doi:<https://doi.org/10.1080/20430795.2015.1118917>
- Gam, Y., Gupta, P., Im, J., & Shin, H. (2021, February). Evasive shareholder meetings and corporate fraud. *Journal of Corporate Finance*, 66, 1-24.
doi:<https://doi.org/10.1016/j.jcorpfin.2020.101807>
- Gee, J., & Button, M. (2021). *The financial cost of fraud 2021*. Crowe U.K. LLP, The Institute of Criminal Justice Studies, University of Portsmouth. Crowe Global. Retrieved from
https://f.datasrvr.com/fr1/521/90994/0031_Financial_Cost_of_Fraud_2021_v5.pdf
- Giese, G., Lee, L.-E., Melas, D., Nagy, Z., & Nishikawa, L. (2019, July). Foundations of ESG Investing: How ESG Affects Equity Valuation, Risk, and Performance. *The Journal of Portfolio Management*, 45 (5), 69-83.
doi:<https://doi.org/10.3905/jpm.2019.45.5.069>
- Gillan, S. L., Koch, A., & Starks, L. T. (2021, February). Firms and social responsibility: A review of ESG and CSR research in corporate finance. *Journal of Corporate Finance*, 66. doi:<https://doi.org/10.1016/j.jcorpfin.2021.101889>
- Giudice, A., & Rigamonti, S. (2020, July 15). Does Audit Improve the Quality of ESG Scores? Evidence from Corporate Misconduct. *Sustainability*, 12(14), 1-16.
doi:<https://www.mdpi.com/2071-1050/12/14/5670#>
- Gowin, K., Wang, D., Jory, S., Houmes, R., & Ngo, T. (2021, May). Impact on the firm value of financial institutions from penalties for violating anti-money laundering and

- economic sanctions regulations. *Finance Research Letters*, 40(c), 1-16.
doi:<https://doi.org/10.1016/j.frl.2020.101675>
- Güler, A. (2016). *A Handbook of Corporate Governance and Social Responsibility*. (G. A. Crowther, Ed.) NY, USA: CRC Press. doi:<https://3c5.com/ug533>
- Guptam, P. (2021, March 25). *UNDERSTANDING AND ADOPTING ESG – AN OVERVIEW Part I : Evolution of ESG from CSR*. Retrieved from Lexology:
<https://www.lexology.com/library/detail.aspx?g=80bbe258-a1df-4d4c-88f0-6b7a2d2cbd6a>
- Gyönyörová, L., Stachoň, M., & Stašek, D. (2021, May 10). ESG ratings: relevant information or misleading clue? Evidence from the S&P Global 1200. *Journal of Sustainable Finance & Investment*, 1-35.
doi:<https://doi.org/10.1080/20430795.2021.1922062>
- Habermann, F., & Fischer, F. (2021, October 4). Corporate Social Performance and the Likelihood of Bankruptcy: Evidence from a Period of Economic Upswing. *Journal of Business Ethics*. doi:<https://doi.org/10.1007/s10551-021-04956-4>
- Handoko, B. L., Warganegara, D. L., & Ariyanto, S. (2020, December 1). The impact of financial distress, stability, and liquidity on the likelihood of financial statement fraud. *PalArch's Journal of Archaeology of Egypt*, 17(7), 2383-2394. Retrieved from
<https://mail.palarch.nl/index.php/jac/article/view/1555>
- Handoko, B. L., Armand, W. K., Marpaung, A. T., & Maria, S. Y. (2019, October). Effect of Financial Liquidity, Audit Rotation and Audit Tenure on Financial Statement Fraud. *IJEAT*, 9(1), 3326-3331. doi:: 10.35940/ijeat.A1487.109119
- Hill, J. (2020). *Environmental, Social, and Governance (ESG) Investing: A Balanced Analysis of the Theory and Practice of a Sustainable Portfolio*. Elsevier. Retrieved from
https://books.google.com.my/books?hl=ar&lr=&id=y8i2DwAAQBAJ&oi=fnd&pg=P1&dq=esg+theories&ots=QE3R6vJNoa&sig=r6VtaET58Zi0Qm_QtgiRO4su0eg#v=onepage&q=esg%20theories&f=false
- Hussain, N., Rigoni, U., & Orij, R. (2018). Corporate governance and sustainability performance: Analysis of triple bottom line performance. *Journal of Business Ethics*, 149(2), 411-432. Retrieved from <https://link.springer.com/article/10.1007/s10551-016-3099-5>
- IFC. (2021). *Corporate Governance Overview*. (the World Bank Group) Retrieved from International Finance Corporation:
https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/IFC+CG
- IPFI. (2020, August 26). *IPFI Issue Brief: Defining ESG – Clarifying the Myths and Facts*. Retrieved from ipfiusa.org: <https://ipfiusa.org/2020/08/26/ipfi-issue-brief-defining-esg-clarifying-the-myths-and-facts/>
- Jessop, S., & Howcroft, E. (2021, JANUARY 29). *Sustainable fund assets hit record \$1.7 trln in 2020: Morningstar*. Retrieved from Reuters:
<https://www.reuters.com/article/us-global-funds-sustainable-idUSKBN29X2NM>
- Johnson, F. B., Rybicki, D. C., Snyder, W. H., & Storm, M. M. (2022, August 8). What Emerging Growth Companies and Investors Need to Know About the Corporate Transparency Act. *The National Law Review*, 12(243), 1-3. Retrieved from
<https://www.natlawreview.com/article/what-emerging-growth-companies-and-investors-need-to-know-about-corporate>
- Karpoff, J., Lee, D., & Martin, G. (2009, April 6). The Cost to Firms of Cooking the Books. *Journal of Financial and Quantitative Analysis*, 43(3), 581 - 611.
doi:<https://doi.org/10.1017/S0022109000004221>

- Kaserer, C., & Moldenhauer, B. (2007, May 31). Insider ownership and corporate performance: evidence from Germany. *Review of Managerial Science*, 2(1), 1–35. doi:10.1007/s11846-007-0009-3
- Kefalas, A. (1991). CHARACTERISTICS OF THE MULTINATIONALS. In Asterios Kefalas, *Global Business Strategy: A Systems Approach* (p. 59). United Kingdom: Thomson South-Western. Retrieved September 13, 2020, from <http://www.opentextbooks.org.hk/ditatopic/33378>
- Keller, A. J., Boland, M. A., & Petty, S. A. (2022). The Growing Use of Alternative Farmland Ownership Methods in the U.S. *Journal of the ASFMRA*, 37-43. Retrieved from <https://www.sciencedirect.com/science/article/pii/S0927538X21000408>
- Kempeneer, S., Peeters, M., & Compennolle, T. (2021, March 15). Bringing the User Back in the Building: An Analysis of ESG in Real Estate and a Behavioral Framework to Guide Future Research. *Sustainability* 2021, 13(6), 3239. doi:<https://doi.org/10.3390/su13063239>
- Kenway, N. (2021, January 13). *Assets in ESG ETFs jump 220% in 2020*. Retrieved from esgclarity: <https://esgclarity.com/assets-in-esg-etfs-jumps-220-in-2020/>
- Kenya, G. (2020, June). The Role of Multinational Corporations (MNCs) in Globalization. *Researchgate*. Retrieved from https://www.researchgate.net/publication/342437901_The_Role_of_Multinational_Corporations_MNCs_in_Globalization
- Krishnan, G., & Peytcheva, M. (2019). The Risk of Fraud in Family Firms: Assessments of External Auditors. *Journal of Business Ethics*, 157(1), 261–278. Retrieved from <https://link.springer.com/article/10.1007/s10551-017-3687-z>
- Kroll. (2022). *Research Summary: Bridging the Great Divide Global Fraud and Risk Report 2021/22 - Bribery and Corruption Risk*. NY: Kroll, LLC. Retrieved from <https://www.kroll.com/en/insights/publications/global-fraud-and-risk-report-2021/research-summary-bribery-and-corruption>
- Kuvvet, E. (2015, June). Corporate Fraud and Liquidity. *The Journal of Trading*, 10(3), 65-71. doi:<http://dx.doi.org/10.3905/jot.2015.10.3.065>
- Lartey, T., Amankwah-Amoah, J., Danso, A., Adomako, S., Khan, Z., & Tarba, S. Y. (2020, December 24). Environmental sustainability practices and offshoring activities of multinational corporations across emerging and developed markets. *International Business Review*. doi:<https://doi.org/10.1016/j.ibusrev.2020.101789>
- Lee, J., & Maxfield, S. (2015, December 2). Doing Well by Reporting Good: Reporting Corporate Responsibility and Corporate Performance. *Business and Society Review*, 120(4), 577–606. doi:<https://doi.org/10.1111/basr.12075>
- Lev, H. (2020, August 24). *The big leap – Taking CSR to the next level with ESG*. Retrieved April 27, 2021, from gobyinc: <https://www.gobyinc.com/evolving-csr-with-esg/>
- Lin, L., Hung, P.-H., Chou, D.-W., & Lai, C. (2019, March). Financial performance and corporate social responsibility: Empirical evidence from Taiwan. *Asia Pacific Management Review*, 24(1), 61-71. doi:<https://doi.org/10.1016/j.apmr.2018.07.001>
- Liu, L., & Zeng, N. (2018, April 26). Financial Scandal and China's Stock Market Couplings. *Management and Economics Research Journal*, 4, 113–122. doi:<https://doi.org/10.18639/MERJ.2018.04.646193>
- Lumivirta, K. (2020, April 30). *The Returns of Socially Responsible Investment: A Study of ESG Investment Performance*. Retrieved August 3, 2020, from helda.helsinki.fi: https://helda.helsinki.fi/dhanken/bitstream/handle/10227/335666/Lumivirta_Karri.pdf?sequence=1

- Luo, Y. (2005, March). Corporate governance and accountability in multinational enterprises: Concepts and agenda. *Journal of International Management*, 11(1), 1 – 18. doi:<https://doi.org/10.1016/j.intman.2004.11.001>
- Mačaitytė , I., & Virbašiūtė, G. (2018). Volkswagen emission scandal and corporate social responsibility—a case study. *Business Ethics and Leadership*, 2(1), 6-13. Retrieved from https://essuir.sumdu.edu.ua/bitstream-download/123456789/68151/1/Ma%20c4%20daityt%20c4%2097_Virba%20c5%20a1i%20c5%20abt%20c4%2097_Emission.pdf;jsessionid=28CBF9463B5AF825B01234F3CF24AD91
- Macrotrends. (2021). *Netflix Revenue 2006-2021 | NFLX*. Retrieved from [macrotrends.net: https://www.macrotrends.net/stocks/charts/NFLX/netflix/revenue](https://www.macrotrends.net/stocks/charts/NFLX/netflix/revenue)
- Markhaichuk, M. (2017, June). Interrelation between Corporate Social Responsibility and Company Performance. *Innovation Management, Entrepreneurship and Sustainability (IMES)*, 575-583. Retrieved from https://www.researchgate.net/publication/321835794_INTERRELATION_BETWEEN_CORPORATE_SOCIAL_RESPONSIBILITY_AND_COMPANY_PERFORMANCE
- Marshall, C. E. (2007, February). Climate for Scandal: Corporate Environments that Contribute to Accounting Fraud. *The Financial Review*, 42(1), 53-73. doi:<https://doi.org/10.1111/j.1540-6288.2007.00161.x>
- Matyjaszek, H. (2020, July 28). *CSR is a thing of the past: Why more businesses need to invest in ESG*. Retrieved April 27, 2021, from Energylivenews: <https://www.energylivenews.com/2020/07/28/csr-is-a-thing-of-the-past-why-more-businesses-need-to-invest-in-esg/>
- McCaffrey, M. (2017, January). The morals of moral hazard: a contracts approach. *Business Ethics: A European Review*, 26(1), 47-62. doi:<https://doi.org/10.1111/beer.12121>
- McClimon, T. J. (2020, June 29). *The Impact of Environmental, Social And Governance (ESG) Issues On Companies Today*. Retrieved August 8, 2020, from Forbes: <https://www.forbes.com/sites/timothyjmcclimon/2020/06/29/the-impact-of-environmental-social-and-governance-esg-issues-on-companies-today/#53f5275b5d2a>
- McRitchie, J. (2020). *Corporate Governance Defined: Not So Easily Corporate Governance Definition*. Retrieved August 8, 2020, from CorpGov: <https://www.corpgov.net/library/corporate-governance-defined/>
- McWilliams, A., Siegel, D., & Teoh, S. (1999, October 1). Issues in the Use of the Event Study Methodology: A Critical Analysis of Corporate Social Responsibility Studies. *Organizational Research Methods*, 2(4), 340-365. doi:<https://doi.org/10.1177%2F109442819924002>
- Mnif, Y., & Borgi, H. (2020, November 13). The association between corporate governance mechanisms and compliance with IFRS mandatory disclosure requirements: evidence from 12 African countries. *Corporate Governance*, 20(7), 1371-1392. doi: <https://doi.org/10.1108/CG-08-2019-0270>
- Moratis, L. (2016, February 8). Out of the ordinary? Appraising ISO 26000 's CSR definition. *International Journal of Law and Management*, 58(1), 26-47. Retrieved August 7, 2020, from <https://www.emerald.com/insight/publication/issn/1754-243X>
- Morris, B. C., Egginton, J. F., & Fuller , K. P. (2019). Return and liquidity response to fraud and sec investigations. *Journal of Economics and Finance volume*, 43(2), 313–329. Retrieved from <https://link.springer.com/article/10.1007/s12197-018-9445-y>
- Morris, B., Egginton , J., & Fuller , K. (2018, July 18). Return and liquidity response to fraud and sec investigations. *Journal of Economics and Finance*, 43, pages313–329. Retrieved from <https://link.springer.com/article/10.1007/s12197-018-9445-y>

- Morrison, R. (2021, MAY 5). *Environmental, Social, and Governance Theory Defusing a Major Threat to Shareholder Rights*. Retrieved from competitive Enterprise Institute Org: <https://cei.org/studies/environmental-social-and-governance-theory/>
- Mthombeni, A. (2021, December). Corporate governance reform strategies for State-Owned Enterprises (SOEs): An integrated review of related literature. *Indonesian Journal Of Business And Economics*, 4(2), 647-656. Retrieved from <https://journal.uniku.ac.id/index.php/ijbe/article/view/4888/2988>
- Narayanan, S. (2014, June 30). *Environmental Performance of Multinationals: A Comparative Study Based On Climate Change Strategy*. doi:10.25148/etd.FI14071142
- Naumovska, I., Wernicke , G., & Zaja, E. (2020, Jun 29). Last to Come and Last to Go? The Complex Role of Gender and Ethnicity in the Reputational Penalties for Directors Linked to Corporate Fraud. *Academy of Management Journal*, 63(3), 881-902. doi:<https://doi.org/10.5465/amj.2018.0193>
- Nekhili, M., Boukadhabaa , A., Nagatib , H., & Chtiouic, T. (2019, June 17). *ESG performance and market value: the moderating role of employee board representation*. doi:<https://doi.org/10.1080/09585192.2019.1629989>
- Nizharadze, D. (2019, December). The Impact of American Multinational Companies on the US Economic. *Conference: American Studies International* (pp. 133-140). Tbilisi: ResearchGate. Retrieved from https://www.researchgate.net/publication/340162425_The_Impact_of_American_Multinational_Companies_on_the_US_Economic
- Pareek , S., & Pasumarti, S. (2021, April 5). ESG Reporting Practicesin India, UK and USA: An International Comparison. *Turkish Journal of Computer and Mathematics Education*, 12(6), 2984-3006. Retrieved from <https://www.turcomat.org/index.php/turkbilmat/article/view/6378/5289>
- Pareek, S., & Pasumarti, S. (2021, April 5). ESG Reporting Practicesin India, UK and USA: An International Comparison. *Turkish Journal of Computer and Mathematics Education*, 12(6), 2984-3006. Retrieved from <https://www.turcomat.org/index.php/turkbilmat/article/view/6378/5289>
- Pham , D., & Pham, Q. (2020, June 12). The impact of CEO duality on firm performance: Examining the life-cycle theory in Vietnam. *Accounting*, 6(5), 737-747. doi:<http://dx.doi.org/10.5267/j.ac.2020.6.010>
- Romano , M., Cirillo , A., Favino , C., & Netti, A. (2020, November 9). ESG (Environmental, Social and Governance) Performance and Board Gender Diversity: The Moderating Role of CEO Duality. *Sustainability*, 12(21), 9298. doi:<https://www.mdpi.com/2071-1050/12/21/9298/htm#>
- SEC. (2021 , March 4). *SEC Announces Enforcement Task Force Focused on Climate and ESG Issues*. Retrieved from sec.gov: <https://www.sec.gov/news/press-release/2021-42>
- SEC. (2020, May 21). *Public Statement: Remarks at Meeting of the SEC Investor Advisory Committee*. (C. H. Peirce, Ed.) Retrieved from sec.gov: <https://www.sec.gov/news/public-statement/peirce-statement-investor-advisory-committee-meeting-052120>
- Serafeim, G., & Yoon, A. (2021, January 13). Stock price reactions to esg news: The role of esg ratings and disagreement. *Forthcoming, Review of Accounting Studies*. doi:<https://dx.doi.org/10.2139/ssrn.3765217>
- Shakil, M., Tasnia, M., & Mostafiz , M. (2020, November 6). Board gender diversity and environmental, social and governance performance of US banks: moderating role of environmental, social and corporate governance controversies. *International Journal of Bank Marketing*, 39(4), 661-677. doi:<https://doi.org/10.1108/IJBM-04-2020-0210>

- Sharma , D., & Verma, R. (2020, June 30). Reaction of Stock Price to Frauds' Announcements: Evidence from Indian Banking Sector. *Asia-Pacific Journal of Management Research and Innovation*, 16(2), 157-166.
doi:<https://doi.org/10.1177%2F2319510X20930879>
- Sun, W., Yiu, S., Yu, L., & Ding, W. (2022, July 29). ESG Score, Scandal Probability, and Event Return. 1-32. Retrieved from
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4172587
- Tang, D., Yan, J., & Yao, C. (2021, November 19). *The Determinants of ESG Ratings: Rater Ownership Matters*. doi:<http://dx.doi.org/10.2139/ssrn.3889395>
- Tasnia, M., AlHabshi, S., & Rosman, R. (2021, May 24). The impact of corporate social responsibility on stock price volatility of the US banks: a moderating role of tax. *Journal of Financial Reporting and Accounting*, 19(1), 77-91.
doi:<https://doi.org/10.1108/JFRA-01-2020-0020>
- The World Bank. (2021). *GDP (current US\$) - Malta*. Retrieved from [data.worldbank.org: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=MT](https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=MT)
- Ud Din, S., Khan, M. A., Khan, M. J., & Khan, M. Y. (2021, February 8). Ownership structure and corporate financial performance in an emerging market: a dynamic panel data analysis. *International Journal of Emerging Markets, ahead-of-print*(ahead-of-print). doi:<https://doi.org/10.1108/IJOEM-03-2019-0220>
- Velte, P. (2020, April 21). Does CEO power moderate the link between ESG performance and financial performance? A focus on the German two-tier system. *Management Research Review*, 43(5), 497-520. doi:<http://dx.doi.org/10.1108/MRR-04-2019-0182>
- Vogler , D., & Eisenegger, M. (2019, March). Corporate scandals as denial of reputation. In *The routledge companion to media and scandal* (pp. 410-418).
doi:<http://dx.doi.org/10.4324/9781351173001-42>
- Weber, O., & Saunders-Hogberg, G. (2020, August). Corporate social responsibility, water management, and financial performance in the food and beverage industry. *Corporate Social Responsibility and Environmental Management*, 27(4), 1–10.
doi:<https://doi.org/10.1002/csr.1937>
- Wong , C., & Petroy, E. (2020). *Rate the Raters 2020 Investor Survey and Interview Results*. Sustainability. ERM Group, Inc. Retrieved from
<https://www.sustainability.com/globalassets/sustainability.com/thinking/pdfs/sustainability-ratetheraters2020-report.pdf>
- Zhang, Y. (2007, January 22). Law, Corporate Governance, and Corporate Scandal in an Emerging Economy: Insights from China. *SSRN*.
doi:<https://dx.doi.org/10.2139/ssrn.957549>