VOLUME 16 NUMBER 4 Nov 2024
ISSN 2076-9202 (Print)
ISSN 2218-046X (Online)

International Journal of Information, Business and Management



ELITE HALL PUBLISHING HOUSE

International Journal of Information, Business and Management

ABOUT JOURNAL

The International Journal of Information, Business and Management (IJIBM) was first published in 2009, and is published 4 issues per year. IJIBM is indexed and abstracted in **ROAD, OALib, Ulrich's Periodicals Directory, ProQuest (ABI/INFORM Global) , ZORA (Zurich Open Repository and Archive), IndexCopernicus, JournalSeek, New Jour, getCITED, Directory of Research Journals Indexing, Open J-Gate, Universal Impact Factor, CiteFactor, ResearchBib, EBSCO Open Access Journals, Scientific Indexing Service, InnoSpace - SJIF Scientific Journal Impact Factor, The Index of Information Systems Journals, National Central Library Taiwan, National Library of Australia , National Science Library (Chinese Academy of Sciences), German National Library of Economics, Eurasian Scientific Journal Index, INTERNATIONAL INSTITUTE OF ORGANIZED RESEARCH (I2OR), Stanford University (USA), The University of New South Wales (Australia)**. Since 2013, the IJIBM has been included into the ProQuest (ABI/INFORM Global) list. Since 2014, the IJIBM has been included into the National Science Library (Chinese Academy of Sciences) one of the top databases in China.

IJIBM is an international journal that brings together research papers on all aspects of Information, Business and Management in all areas. The journal focuses on research that stems from academic and industrial need and can guide the activities of managers, consultants, software developers and researchers. It publishes accessible articles on research and industrial applications, new techniques and development trends.

IJIBM serves the academic and professional purposes for those such as scientists, professionals, educators, social workers and managers. It provides new methodology, techniques, models and practical applications in various areas.

ISSN 2076-9202

International Journal of Information, Business and Management

CONTENTS

1 **PUBLISHER, EDITOR IN CHIEF, MANAGING EDITOR AND EDITORIAL BOARD**

2 **PROSPECTS & CHALLENGES OF SOCIAL SUSTAINABILITY OF TEXTILE & RMG INDUSTRY: EVIDENCE FROM BANGLADESH**
MD. NURUN NABI, MD. MASUM, ENAMUL HASAN, DILARA HOSSAIN, SHAHID MD. ADNAN, KHAN MD. FOYSOL

3 **AUDIT QUALITY, ESG AND CORPORATE FINANCIAL PERFORMANCE**
NGUYEN THI LE HA, NGUYEN DUONG THAO HAN

4 **LEADERSHIP SKILLS: INDISPENSABLE IN LEADING TO UP-GRADATION OF THE ORGANIZATION STRUCTURE**
RADHIKA KAPUR

5 **STAKEHOLDERS AND ESG DISCLOSURE**
NGUYEN THI LE HA, TRAN NGOC HOANG KHANH

6 **PROBLEM SOLVING ABILITY, SELF-EFFICACY, INFORMATION SEEKING BEHAVIOUR AND UTILIZATION OF MANAGERS IN LARGE-SCALE MANUFACTURING COMPANIES IN NIGERIA**
SUNDAY OLANREWAJU POPOOLA

7 **UNDERSTANDING THE IMPORTANCE OF NEGOTIATION SKILLS WITHIN ORGANIZATIONS**
RADHIKA KAPUR

8 **ECONOMIC FACTORS AND CO2 EMISSIONS IN EMERGING ECONOMIES**
NGUYEN THI LE HA, TRAN MAI NGAN

9 **UNDERSTANDING THE SIGNIFICANCE OF ANALYTICAL SKILLS WITHIN ORGANIZATIONS**
RADHIKA KAPUR

10 **THE IMPACT OF ECONOMIC POLICY UNCERTAINTY ON BANK STABILITY AND THE MODERATING EFFECT OF OWNERSHIP STRUCTURE: EMPIRICAL EVIDENCE FROM CHINESE LISTED COMMERCIAL BANKS**
NGA T. TRINH, TRUONG Q. VU

11 **AI-DRIVEN AUTOMATION IN WAREHOUSE MANAGEMENT ENHANCING EFFICIENCY AND ACCURACY**
JIA-CHI TSOU

12 **FACTORS NECESSARY IN LEADING TO DEVELOPMENT OF THE EDUCATION SYSTEM IN INDIA**
RADHIKA KAPUR

13 **IDENTIFICATION OF DETERMINANTS OF E-GOVERNMENT TRUST AND ITS IMPACTS ON E-GOVERNMENT SATISFACTION AND CITIZENS' CONTINUANCE INTENTION TO USE**

ISSN 2076-9202

E-GOVERNMENT IN HO CHI MINH CITY, VIETNAM

NHAT PHUC MINH NGUYEN

ISSN 2076-9202

International Journal of Information, Business and Management

Publisher: Elite Hall Publishing House

Editor in Chief:

Dr. Muzaffar Ahmed (Bangladesh)
E-mail:muzaahme1@gmail.com

Editorial Board:

Dr. Claudio De Stefano
Professor, Department of Computer Science
University of Cassino, Italy.
E-mail: destefano@unicas.it

Prof. Paolo Pietro Biancone
Professor of Financial Accounting, Faculty of Management and Economics
University of Turin, Italy
Email: biancone@econ.unito.it

Dr. Michael A. Hignite, Ph.D.
Professor, Department of Computer Information Systems, College of Business
Missouri State University, USA
Email: mikehignite@missouristateuniversity.com

Dr. Seema Varshney
Assistant Professor, Waljat college of applied sciences
Muscat, Oman
E-mail: smvarster@gmail.com

Dr. Morteza Rasti Barzoki
Assistant Professor, Department of Industrial Engineering
Isfahan University of Technology, Iran
E-mail: rasti@cc.iut.ac.ir

Mr. Mohsen Fathollah Bayati
Department of Industrial Engineering
Iran University of Science and Technology, Iran
E-mail: mfbayati@ind.iust.ac.ir

Dr. Edgardo Palza Vargas
Telfer School of Management
University of Ottawa, Canada
Email: edgardo.palza-vargas.1@ens.etsmtl.ca

Dr. Solomon Markos
Assistant Professor, School of Commerce
Addis Ababa University, Ethiopia
Email: solomonmarkos5@yahoo.com

Dr. Olu Ojo
Lecturer, Department of Business Administration
Osun State University, Nigeria
Email: oluojoe@yahoo.com

Dr. Mohammed-Aminu Sanda
Visiting Research Fellow, Lulea University of Technology, Sweden
Senior Lecturer, Department of Organization and Human Resource Management, University of Ghana, Ghana
Email: masanda@ug.edu.gh

Dr. Khalid Zaman
Assistant Professor, Department of Economics,
University of Wah, Pakistan
Email: dr.khalidzaman@uow.edu.pk

Dr. Kartinah Ayupp
Deputy Dean, Economics and Business
Universiti Malaysia Sarawak, Malaysia
Email: akartinah@feb.unimas.my

Dr. Malyadri. Pacha
Principal, Government Degree College
Affiliated to Osmania University, India
Email: drpm16@yahoo.co.in

Dr. Arif Anjum
Assistant Professor, M.S.G. Arts, Science & Commerce College, Malegaon, India
Managing Editor, International Journal of Management Studies
Email: infoijcms@gmail.com

Mr. Andrew McCalister
Global Research Awardee, Royal Academy of Engineering, University of Cambridge, UK
Email: andrewmccalister@gmail.com

Dr. Mohsin Shaikh
Professor & Head, Department of Management Studies
SKN College of Engineering, Pune, India
Email: skmohs@yahoo.co.in

Prof Dr. M Razaullah Khan
Professor and Head at Dept of Management and Commerce
Maulana Azad National Urdu University Hyderabad, India
Email: razakhan@manuu.edu.in

Mr. Kai Pan
Research Assistant & Ph.D. Candidate, Department of Software and Information Systems
University of North Carolina (UNC Charlotte), USA
Email: kpan@uncc.edu

Dr. Sundar Kumararaj
Associate Professor, Commerce Wing, Directorate of Distance Education,
Annamalai University, Annamalai Nagar, Tamil Nadu, India
E-Mail: commercesundar@gmail.com

Dr. Mohammad Alawin
Associate Professor, Business Economics Department
The University of Jordan, Amman, Jordan
E-mail: m.alawin@ju.edu.jo

Mr. Dinh Tran Ngoc Huy
Visiting lecturer, PhD candidate , Banking University HCMC, Vietnam
Email: dtnhuy2010@gmail.com

Dr. Cüneyt AKAR
Associate Professor, Department of Business Administration
Bandirma Onyedi Eylul University, Turkey
Email: cakar@bandirma.edu.tr

Dr. Abdul Hafaz Ngah
Senior Lecturer,School of Maritime Business and Management,
Universiti Malaysia Terengganu, Malaysia
Email: hafaz.ngah@umt.edu.my

Mr. Mostafa Torabi
Assistant Professor, Department of Business Administration
Brandon University, Canada
E-mail: torabim@brandonu.ca

Dr. Jia Chi Tsou
Associate Professor, Department of Business Administration
China University of Technology, Taiwan
E-mail: jtsou.tw@yahoo.com.tw

Dr. Yajnya Dutta Nayak
Assistant Professor, P.G. Department of Commerce
Khallokote Auto. College, Berhampur (Govt. College of Odisha), India
E-mail: yajnya.dutta@gmail.com

Dr. Ionel BOSTAN
Professor DHC, Doctoral School of Economics,
Stefan cel Mare University of Suceava (Romania)
E-mail: ionel.bostan@fdsa.usv.ro

Web: http://ijibm.elitehall.com
ISSN 2076-9202 (Print)
ISSN 2218-046X (Online)

PROSPECTS & CHALLENGES OF SOCIAL SUSTAINABILITY OF TEXTILE & RMG INDUSTRY: EVIDENCE FROM BANGLADESH.

Md. Nurun Nabi[1], Md. Masum[2], Enamul Hasan[3], Dilara Hossain[4], Shahid Md. Adnan[5], Khan Md. Foysol[6]

[1,2,3] Textile Engineering Management Department, Bangladesh University of Textiles (BUTEX)

[4,5] Department of Humanities and Social Science, Bangladesh University of Textiles (BUTEX)

[6]Department of Allied Engineering, Textile Engineering College Noakhali, BUTEX.

Abstract

The paper states the present prospects & Challenges of social sustainability in the Bangladesh textile and RMG sector, as social sustainability is vital to ensuring a smooth & excellent work environment and production. Primary data collection was done from 54 textile& RMG factories of Bangladesh. The valid questionnaire was distributed to 60 factories which are 1% of the total number of factories in Bangladesh, and the feedback was collected from 54 reputed factories. Results of the survey showed that the rate of sustainable practice is increasing in Bangladesh gradually. Nowadays, company owners and shareholders are focusing on the issue of engaging people with the work by ensuring a pleasant mindset and environment. The standard level of salary, clean & hygienic environment, corporate social responsibility, proper maintenance of compliance, etc. The findings are limited to the area and scope of the study. The data collection time was 2017 from the different factory employees and employers. The time was limited, and employers could not provide information regarding the sustainability issues of the factory. Though sustainability is getting important day by day, the factories should concentrate more on it. Social sustainability is magic, which can easily empower the hands which work for the countries reputation rapidly. The sustainability issues are related to the survival of the garments factory. Some steps like more facilitation of managerial and non-managerial employees, improvement in CSR activities, and ensuring more safety-based regulations can be taken to achieve this aim. In the future, green factory management, factory production lead time & green supplier & buyer relationship development will take a more important place for the sustainability issues of the garments and clothing industry. The research is original and authentic, and the work is new and not published yet. The study reveals the data regarding the social sustainability of the textile and clothing industry of Bangladesh.

Keywords: Social sustainability, compliance, laws & regulations, managerial & non-managerial employees, manpower, CSR, Mindset, RMG, Bangladesh.

Introduction

The textile and ready-made garment (RMG) business is a cornerstone of global manufacturing, playing a crucial role in economic growth and job creation globally (Siddiqui, K. H.; Chowdhury, M. S.; Paul, 2020).

ISSN 2076-9202

As the debate over sustainability heats up, there is an increasing need to investigate the social components of this business, which include labour rights, working conditions, and community well-being (Dissanayake, D.; Ihalanayake, 2019). Given the intricacies of global supply chains, attaining social sustainability requires a thorough awareness of the obstacles and possibilities (Haq, M. A.; Bhuiyan, 2019). Previous study highlights a number of concerns, including as labour exploitation, gender inequities, and poor safety standards, present in different textile manufacturing centres (Rahman, M. H.; Paul, 2018). However, there are significant steps in fostering ethical sourcing processes, promoting inclusive workplaces, and engaging stakeholders in sustainable efforts(Chowdhury, M. S., Siddiqui, K. H.; Paul, 2021). This introduction delves into the diverse terrain of social sustainability in the textile and RMG industries, focusing on academic research aimed at resolving social concerns and promoting fair practices.

Understanding implies that sustainable development has a global dimension. However, reciprocal interaction between local and global systems is becoming more well recognised. Cities, in particular, are open systems with far-reaching consequences for the rest of the planet. There is quite a bit of effort on this subject, expanding experiences established in various cities under the UNESCO MAB programme (Munda, 2006). In 1987, a study by the United Nations Commission on Environment and Development, widely known as the Brundtland report, brought sustainable development (SD) to the forefront of global politics (Missimer et al., 2017). The world is facing critical and linked issues on several social and environmental fronts. Resource scarcity, population reality, and planetary constraints preclude humanity from expanding out of these difficulties. A shift towards sustainability and well-being may be the best alternative for future growth. Sustainability must be defined as addressing human physical, emotional, and social needs. Equity concerns are critical to having the resources to alleviate poverty and improve well-being in emerging nations. Well-being is complex and context-specific, and it must be treated in a manner that respects cultural variation and social autonomy while providing basic human needs. We must go beyond GDP, assessing the numerous objective and subjective components of well-being to track our development (Rogers et al., 2012). Sustainability is gaining traction among academics and practitioners as stakeholders become more conscious of environmental and social challenges. However, little study has been performed to determine the degree to which enterprises in developing economies have incorporated social sustainability components into their supply chain management. The goal of this essay is to analyse the social challenges relevant to suppliers and to establish measurements and variables linked to social sustainability in emerging economies (Mani et al., 2018).

Scholars are increasingly addressing the topic of sustainability both philosophically and practically, as are managers and policymakers. With the increased emphasis on sustainability initiatives, marketing is perfectly positioned to shift its focus from managing customer connections to proactively managing a larger range of marketplace concerns (Hult, 2011). The textile and clothing industry is one of the oldest and most important industries, ensuring the need for clothing, household textiles, technical and protective textiles, industrial textiles, etc. Social sustainability is a growing area of urban planning policy and practice. While the social component of sustainability is now universally recognised as crucial (together with the environmental and economic aspects), it remains under-theorized and unclear in policy discourse and practice. Governments, public agencies, policymakers, non-governmental organisations (NGOs), and companies are increasingly

ISSN 2076-9202

embracing the idea to frame choices regarding urban growth, regeneration, and housing as part of a growing policy debate on city sustainability and resilience. Social sustainability is a relatively new idea in both policy debate and an Although the Brundtland Report created the notion of sustainable development 25 years ago, there is still a large body of scholarly writing on the philosophy, policy, and practice of sustainability. Over the last decade, however, social sustainability has evolved as a study, policy, and practice area. A wide range of stakeholders are participating in projects to use social sustainability as a planning practice, with a special emphasis on the social implications of urban growth, housing, and regeneration. Global players include the World Bank, United Nations Environment Programme, European Investment Bank, and European Bank for Reconstruction and Development, all of which are active in programmes, policies, and research that expressly address social sustainability. Social sustainability must be based on inequality, democracy, and social fairness. The preservation of societal ideals, cultural traditions, and way of life. According to the information of 2014-15 fiscal years, employment and export value obtained from the textile and clothing industry shown below:(Global fashion industry statistics,2018). Employment and export value obtained from the textile and clothing industry in 2014-15 &19, About 60M to 75M people are engaged in the textile, garment, and footwear industries worldwide (Lina,2015). According to the new statics of the BGMEA, approximately there 80 million and In Bangladesh, there are 8 million workers are employed in the RMG clothing & garments sector.

Congruently, statistical information can easily realize the importance of textiles and clothing all over the world. Sustainability issues will not show a direct tangible economic profit, but to practice them, cost reduction will be obtained, reducing expenditure and creating long-term profits. Social sustainability ensures the satisfaction of the employees, a good working environment, a safe working area, maintenance of labor law, ideal-working hours, etc. Ensuring that type of practice reliable and trustworthy relation among company and employees will build up and this will ensure good production scale, minimum level of wastage, minimize relaxation Boredom, etc. type time losses, which will also ensure indirect profit maximization. Overall, the core concept of social sustainability is ensuring long-term benefit by evaluating the people's happiness related to the sector's impact. An study of chosen national and international social sustainability ideas reveals that indicator selection is typically based on a practical grasp of plausibility and current political goals rather than theory. This is due in part to the lack of a defined theoretical framework of social sustainability. Many such notions may stay implicit because they are hidden beneath an apparently random selection of popular sociopolitical indicators. They also use several terms to describe social sustainability.
Furthermore, the interconnections and connections between social, economic, and environmental sustainability are often ambiguous. The three dimensions are often assigned separate priority and are arranged adjacent to one another without being combined into a whole. The analytical findings reflect the frequent assertions regarding sustainability as a somewhat imprecise notion, and there is still a lot of work to be done in adequately defining it (Littig & Grießler, 2005). Social sustainability has always been seen as the weakest of the three pillars—the most difficult to achieve and the easiest to overlook. The academic literature has been conceptualised in many ways, emphasising the theoretical problems in analytically grasping, framing, and defining the word in a manner that is relevant to larger sustainability initiatives and

ISSN 2076-9202

goals. Another study define it as "the improvement of the capabilities of well-being (economic, social or environmental) for all, through the aspiration of equity, on the one hand, and the transmission across the generations on the other hand. Another study usaged of the phrase "just sustainability" to express the relevance of intragenerational and intergenerational fairness in democratic, participatory processes emphasises social justice, particularly environmental justice (Psarikidou & Szerszynski, 2012).

1.2 Statement of the Problem

Social sustainability is becoming more important in today's sustainability debate. To address the challenge of living sustainably, society must participate in social learning, which improves the capacity to make acceptable decisions regarding difficult challenges. In this perspective, sustainable development is concerned with beliefs, attitudes, and interactions between people and the natural environment. Sustainability is inherently cultural, including how political, economic, and biophysical processes impact social systems. This definition of sustainability takes into account values, culture, decision-making, democratic processes, and the social system, as well as the associated systems with which we identify. UNESCO described in 1997 describes ecological sustainability as four interconnected systems: environmental, social and cultural, economic, and political. The systems are linked, interdependent, and intertwined to the point that they cannot be viewed separately. The literature shows that many higher education institutions have included environmental sustainability programmes into their teaching programmes, research, and community outreach. These writers propose for expanding sustainability programmes to include social systems.

When conducting a national review of the status of further and higher education regarding sustainability practices, explicitly draw attention to an institution's ability to sustain their social systems and support the social capital of staff and students, with "critical concern in the hiring, tenure, and promotional systems" (Hammond & Churchman, 2008). In the age of globalization, competition is huge & everywhere among Bangladesh's textile and clothing industry. The competition is not only limited to Bangladesh but also worldwide. Factory sustainability is the bargaining issue of the present age. There are many reasons why the factory faces different problems in the garments and clothing industry in Bangladesh. The garments industry is losing the orders and buyers –new suppliers and the industry's ground, and there is a special report of BGMEA 2019. There are almost 300 sustainable factories in Bangladesh, and among the 6000 factories, 5% of the factories are green or sustainable. The different authorities will try to make the factory sustainable and make the factory more socially sustainable.

Sustainable development is not directly related to production volume and monetary value. Therefore, in most cases, the practice rate of sustainability at the root level is not satisfactory.

Rules and regulations of the country are not properly related to sustainability issues.

Sometimes non-managerial level employees are not properly aware of their rights, which creates an undervaluation of effort. This undervaluation turns into dissatisfaction and remarkably harms productivity.

1.3 Objectives of the study

The present study represents the prospects & challenges of the social sustainability of Bangladesh's textile

ISSN 2076-9202

and RMG industry. Social sustainability is related to the sustainability of the clothing industry. The study's main objective is to maximize the sustainability of textile industries and the challenges the textile factories face in the future. In the following, there are some specific objectives given below.

To examine the present scenario of social sustainability in bangladesh

To analyze the impact of social sustainability on the RMG industry in Bangladesh.

To Investigate the core problems & obstacles to implementing social sustainability.

Explore hypothetic solutions to solve the issue.

1.4 Scope of the Study

The present study represents the prospects & challenges of the social sustainability of Bangladesh's textile and RMG industry. The social sustainability study area is larger compared to the other sustainability study like the economic, environmental, and political. The social sustainability study is related to the social factory norms and forms like the social sustainability compliance, laws and regulations, managerial and non-managerial employees code of conduct, health and hygiene issues, social factory compliance certificate, etc. Mostly, the study covers the RMG sectors of Bangladesh. The following given some specific points of the study where how social sustainability can be achieved. Effective and innovative methods for obtaining complete social sustainability will discuss. Best practices towards the goal will be discussed so that the adoption of those practices can be easier. Determination of actual win-win situation for both the employer and the employee. Further analysis and secondary data collection on this topic can be possible, opening up the door to a specific conclusive result.

2. Literature Review

Clothing is a basic need of human life. Traditionally peoples treat clothing or apparel only as a medium of protection, safety, and social behavior. Nowadays, clothing has become the initial identity of individuals. Common people are just concentrating on purchasing their favorite style, using it according to the choice, and then disposal. Most of the time, the final consumers are not aware of how the cloth was made and what will happen with it after disposal. The clothing life cycle's shown below: (Euratex,2006). Social sustainability, or urban development, should increase the quality of life for all people while also fostering an atmosphere that supports integration and allows culturally and socially diverse groups to coexist. The compact cities debate has had a significant impact on the sustainability agenda in western industrialised cities, implying a strong relationship between urban design and sustainability (Weingaertner & Moberg, 2014).

According to the flow chart, it can be stated that the textile and clothing sector is not as simple as expected. Many processes& organizations are involved in making finished garments consumers generally buy from the retailing shops. The backward linkage of clothing technology needs many workforces responsible for fulfilling the demand for clothing worldwide. So, what is the ultimate solution? How can balance be maintained among environmental, social, and economic issues and maintain proper supply? The only suitable answer is by making the whole process sustainable, and balance can be created.

ISSN 2076-9202

2.1 Social Sustainability: Urban Context

Accessibility (e.g., access to employment, open spaces, local services, resources) • Social capital and networks • Health and well-being • Social cohesion and inclusion (between and among different groups) • Safety and security (real and perceived) • Fair distribution of income, employment • Local democracy, participation and empowerment (community consultation) • Cultural heritage (e.g., local heritage and listed buildings) • Education and training • Equal opportunities and equity • Housing and Community Stability • Connectivity and movement (e.g., pedestrian-friendly, good transport links) • Social Justice (inter and intra-generational) • Sense of place and belonging •Mixed-use and tenure • Attractive public realm • Local environmental quality and amenity

2.2 Social Sustainability: company and product context

Equal opportunities • Education and training • Governance • Health and safety • Employment • Security • Human Rights (e.g., forced labor, child labor, freedom of association) • Indigenous rights • Labour practices (e.g., fair salary, working hours, social benefits to employees) • Fair operating practices (e.g., anti-corruption, fair competition, and supplier relationships) • Cultural heritage • Community involvement and development (e.g., accessibility, community engagement, de-localization, and migration)• Consumer/Product responsibility (e.g., satisfaction, privacy, complaints practices) • Technology development

2.3 Brief on Sustainability

According to the most popular definition of sustainability, from the Brundtland Report of 1987; "Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (Brundtland, 1987)

Sustainability has three pillars, they are:

Social Sustainability

Environmental sustainability

Economic Sustainability

Social sustainability refers to a social system's capacity to operate continuously at a certain degree of social well-being (Sustainability, 2014). To address the social sustainability of academic communities, one must first comprehend the notion. Social sustainability is achieved when official and informal processes, institutions, structures, and connections actively promote current and future generations' capacity to develop healthy and liveable communities (Hammond & Churchman, 2008). Socially sustainable communities provide a high quality of life by prioritising the well-being of current and future members. The conceptual term, social sustainability, "implies inter-relationships and interdependencies built on communication over time; local and global communities in the constant struggle toward living together without exploitation in an ever-changing world" (Murray, 2005). A definition of a conceptual word, such as social sustainability, must be based on a set of rules that characterise the term's features and allow for the emergence of socially sustainable societies. This paper will explore the social sustainability of Australian academic communities according to these concepts.

So, for addressing as sustainable, all social, environmental, and economic sustainability have to maintain.

Sustainability and Textile Value Chain

ISSN 2076-9202



Figure 01: Sustainability and Textile Value Chain

The textile value chain is the whole process by which textile-based companies are operating their business. To ensure proper sustainability in the textile and clothing sector, proper maintenance of every single step is required. All apparel companies are dealing with the maximum workforce, so proper maintenance of social sustainability is most important for them.

2.4 Apparel Companies of Bangladesh at a Glance:

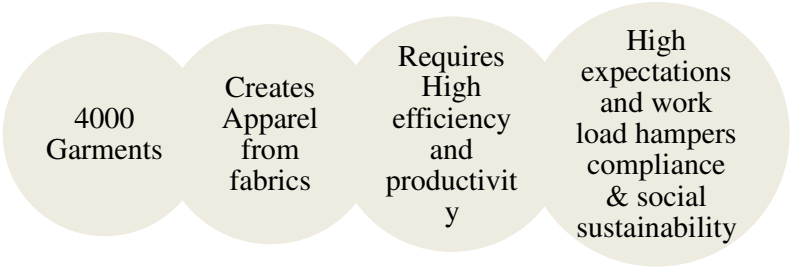


Figure 02 : Apparel Companies

The apparel sector of Bangladesh generally maintains a progressive bundling system (PBS) for clothing production. The progressive bundling system requires more workforce as, according to PBS, multi-tasking ability is not trained properly, so the man responsible for sleeve joining is doing the same thing all over the day. At least 12-15 workers must stitch a complete non –decorative garment of a definite style. So, a huge amount of workforce is required for the entire apparel sector every single day.

2.5 Area of social Sustainability

Social sustainability will include additional sustainable facilities, a sustainable workstation environment, sustainable pay and compensation process, corporate social responsibility (CSR) activities, etc. In a word, social sustainability is maintaining a sustainable relationship with the management, employees, customers, final consumers, and the surrounding people who get the effect of the business directly or indirectly.

ISSN 2076-9202

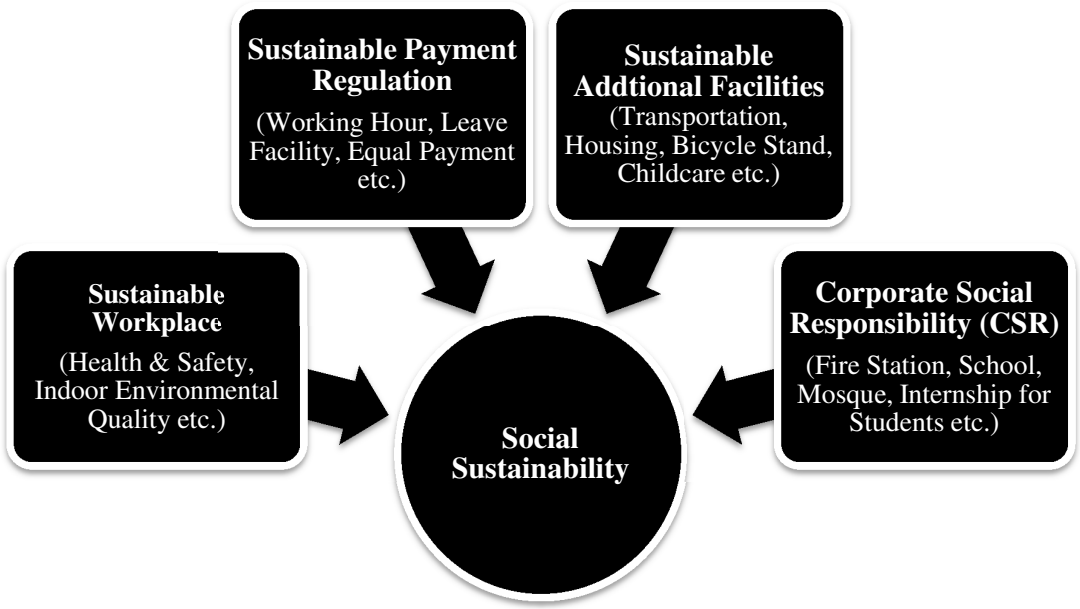


Figure: 03: Area of social sustainability

2.6 Social Sustainability and Corporate Social Responsibility

Industrialisation adds to the harm done to the natural world and human existence. As a consequence, there is an urgent need for organisations to collaborate in sustainable supply chains. With our rising understanding of sustainability, government legislation, and community awareness, sustainable performance is becoming a more significant organisational strategy. However, until far, literature has concentrated on social sustainability to a much lesser level, which is disappointing, since social sustainability practices may assist enhance other elements of sustainability, but all three dimensions are essential to develop a genuinely sustainable firm (H. et al., 2017).

Using the social as the framework for sustainability evaluation provides for a wider range of issues. For starters, it makes the concept more relevant to urban areas, where even the most serious economic and environmental challenges are inextricably linked to the resilience and well-being of the whole social unit. Local communities operate in a larger social context than companies. Second, it emphasises cultural issues, enabling communities to connect their activities to values, meanings, histories, and projections. Third, by adopting "the social" as the general frame, questions of temporal and geographical extension that achieve specific economic, ecological, political, and cultural goals may be brought to the forefront. Fourth, questions of social tension can be explicitly introduced, with tensions in the pursuit of variable objectives explicitly negotiated and managed according to their temporal dimensions (present, near-future, and far-future) or spatial dimensions (local, neighbourhood, city, regional, etc.). The typical trade-off between economic and environmental activities, for example, might be reframed as a conflict between the social entity's short- and long-term needs. This temporalized version, we believe, better aligns with the Brundtland Commission's definition of sustainable development as addressing "the needs of the present without compromising the ability of future generations to meet their own needs." (Magee et al., 2013)

3. Methodology of the Study

ISSN 2076-9202

This study is exploratory research was using mixed methods covering the qualitative and quantitative aspects. The mixed research approach helps build a conceptual theory and overcome any difficulties of research methods (Siyambalapitiya et al., 2018) & used to assess the empirical analysis and measure the social sustainability issues in manufacturing organizations (Masri & Jaaron, 2017). A qualitative approach will be used to collect the data by questionnaire methods –open-ended or closed-ended survey methods. Delphi methods-group opinion/expert opinion, focus group and structured interview, yearly reports, literature and environmental reports, and sustainability reports are the additional quantitative approaches utilised for research data collecting. A mixed study provides both qualitative-primary and quantitative secondary data, which strengthens the research validity (Creswell & Poth, 2017). By taking the information from all sides of the textile and clothing industry about the sustainability of the factory. Factory sustainability is the main issue in Bangladesh, and we have done the study on a sample basis.

3.1 Data Collection and Populations

Exploratory type and questionnaire-based research in nature. Primary and Secondary data-based research. Further studies will be needed to conclude with a decision. Mostly Raw primary data are collected. Some secondary data was also found out after analysis. We have surveyied 56 textile and garments industry, collected data from the 50 factories.

Textile professionals from different factories (as well as compliance departmental responsible) were the target population. To collect the present conditions of the factory towards sustainability, persons related to it will respond most accurately.

For online data collection, Factories were selected according to reputation and easy professional communication process.

For the field trip, travel convenience, reputation, and easy access into the factory got preference.

Measures Taken to Reduce Errors

- Getting some knowledge from more than one individual
- Cross-checking various data for the same organisation.
- The material was evaluated via field tours and visits to corporate websites.
- Regional circumstances are considered throughout the study to ensure that it is done in accordance with facts and realities.

4. Data Analysis & Interpretation

Examining the Present Scenario of Sustainable Development

Concept of Sustainability among Bangladeshi professionals

Theoretically, sustainability means improving the present condition (all social, environmental, and economic) without hampering the future. To know the practical scenario, more than 30 textile professionals were asked about sustainability, and their opinions are:

The textile industry of Bangladesh (Sustainable/ Not sustainable)

The question for the respondents was, do they think the textile industry of Bangladesh is sustainable or not? More than 48% of the respondent answers that the textile industry is not sustainable. 22% of them think it is sustainable, and 29%saidmaybe that means it can be sustainable. On the other hand, it can't also be.

ISSN 2076-9202

As the textile sector of Bangladesh has to face many compliance-related issues like worker unrest, lockout, strike, political unrest, etc. Safety issues like sudden fire, building collapse, etc. So, it is getting difficult to maintain sustainability without proper concentration.

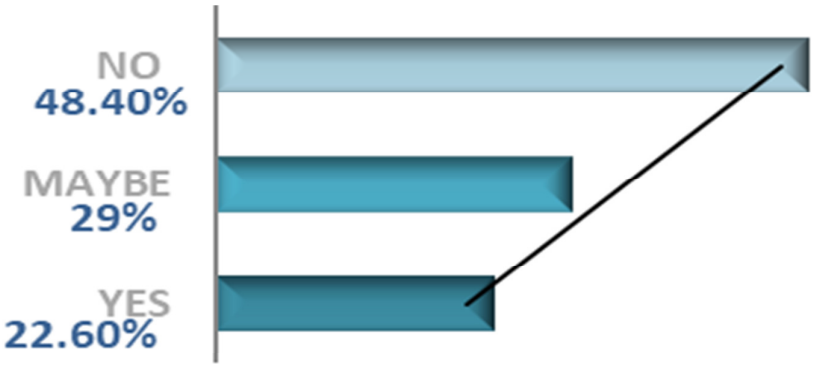


Figure 04: Textile industry of Bangladesh (Sustainable/ Not sustainable)

How long can Bangladesh sustain itself in the world textile sector?

According to the respondents' answers, most of them think that the textile industry of Bangladesh will sustain for 20-30 years more than today. 25% of the respondent thinks that it will sustain 10-20 years; other 25% think that the textile sector will sustain more than the next 50 years and 12.5% think that the textile sector will sustain 30-50 years. As Bangladesh suffers from some sustainability issues, some measures should be taken carefully to hold the market for a long period.

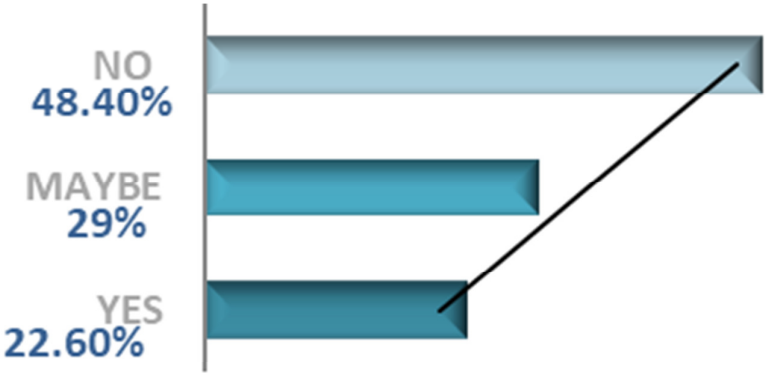


Figure: 05: Present Scenario of sustainability

Outcomes of the Survey

Currently, more than 6000 companies are involved in the textile processing of Bangladesh. Textile raw material collections to the final product distribution, all companies are doing business simultaneously to make the sector successful and more profitable. At present, with their nice efforts, textile and RMG becomes the highest exporting business in Bangladesh. However, the future of the textile industry in Bangladesh is not completely safe. There are some issues to worry about. The workforce is the key strength of Bangladesh

ISSN 2076-9202

in the RMG sector. Proper utilization of a hardworking workforce can uphold the whole scenario in a value-added way. Proper maintenance of social sustainability can speed up the workforce facilities and compliance issues related to the sector, i.e., ensure a happy production process. The current scenario of social sustainability in the Bangladesh textile industry is increasing, but it is still not satisfactory. Much more improvement in compliance, CSR, etc. issue has to be ensured. Government regulations have to be more specific. Implementation of laws and regulations has to ensure reality rather than keeping only as a paper document. Certifications also have to be implemented properly.

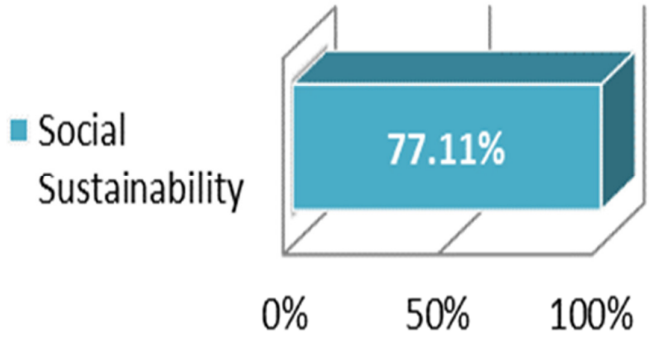


Figure 6: Average Percentage of Social Sustainability Scenario of Major Sectors

Analysis of the survey outcomes:

Outcomes of the questionnaire, which relate to social sustainability in the manufacturing and business field, will be described here. The sample size of this survey was 54 factories from different sectors and areas. By analyzing the result of this survey, an image of the present scenario can be drawn.

Higher Social Sustainability Rate according to paperwork but the reality is not that much satisfactory:

According to the outcome, the average rate of social sustainability is 77.11%, which is quite satisfactory. Due to recent occurrences like the Rana Plaza collapse, Mirpur factory fire or Tazreen Fashions burnout, etc., the government and the buyers or exporters concentrate on the safety of non-managerial employees nowadays. For strict labor law and buyers' regulations manufacturing companies are now quite bound to look after social compliance. This is one of the main reasons for this high percentage.

Nevertheless, this numerical digit is not describing reality properly. Due to a higher workload, organizations still pressure their workers. A low working wage problem is remaining. Insufficient overtime facility, forced overtime, young (below 18) appointments, etc., are the main social issues, which have to pay more concentration.

However, some problems are still countable, but the overall situation of social sustainability is improved. The picture is not completely satisfying, but it cannot be counted as depressing nowadays.

Sustainability Scenario of Major Sectors

This survey was done by concentrating on social on environmental sustainability majorly, six major sectors concentrated the whole thing. They are; sustainable sites, water efficiency, energy & atmosphere, material & resources, indoor environmental quality, compliance & welfare. An individual scenario of each of these

ISSN 2076-9202

sectors will be described:

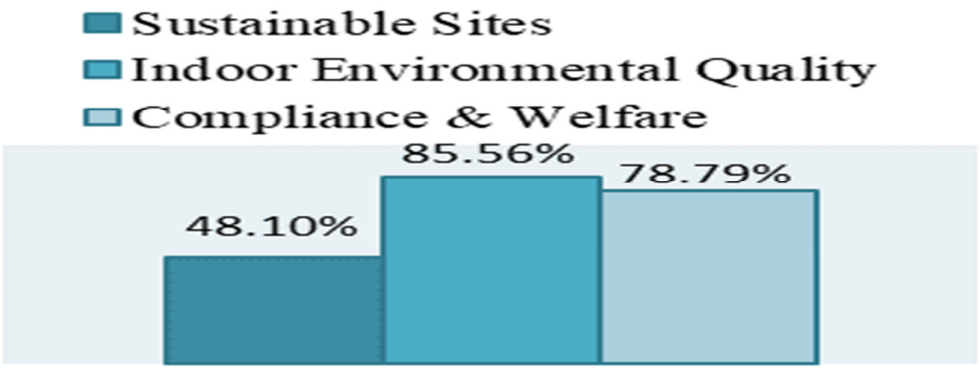


Figure: 07: Present Scenario of sustainability

Sustainable sites indicate the regional sustainability of the factory premises. It deals with the regional facilities like having a local area near the factory so that managerial and non-managerial employees can stay there, bicycle stand for the managerial and non-managerial employees so that those who don't live nearby can also reach into the factory timely by cycle as Bangladesh is an island, so possibilities of natural disasters like heavy rainfall, flood, etc. are high here. So, another concentration factor is the sewage and water drainage facility of the region and factory compound. Without this security during the rainy season rate of absenteeism will be higher due which impacts total production. According to the survey, the total percentage of the sustainable site is 48.10%, which is not satisfactory. If the site location is not sustainable, then managerial and non-managerial employees are unwilling to happily join the company because the distance of their work towards their living place will be high. Besides, this high distance wastage of time and money will occur.

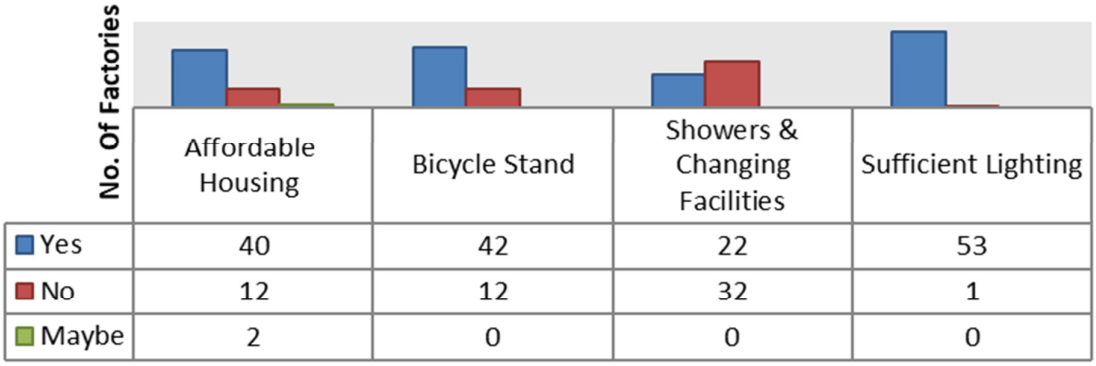
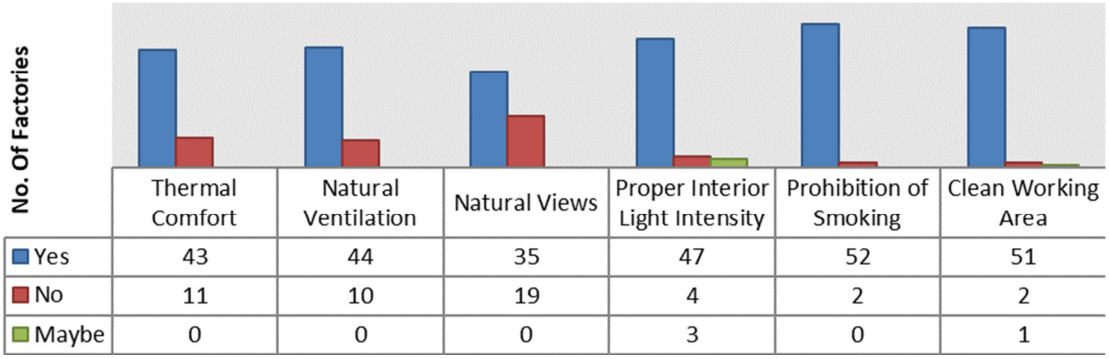


Figure 08: Scenario of basic sustainable issues according to sustainable sites

A few years ago, the internal environment of the factories was not that good. Now the situation is changing. Authorities have become careful about the internal environment. Smoking is prohibited in almost all factories. Because of carefulness in this sector, the percentage of sustainability is 85.56%, which is not bad. However, for a satisfactory result, the percentage must be more.

ISSN 2076-9202

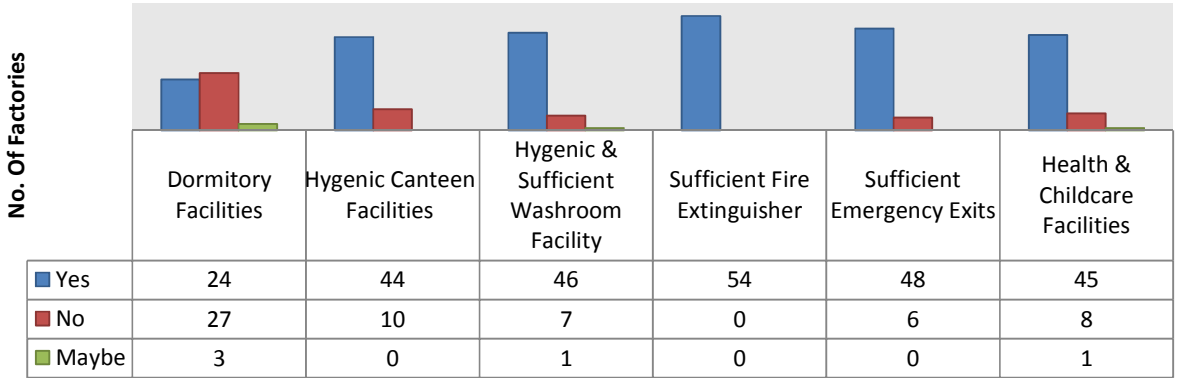


	Thermal Comfort	Natural Ventilation	Natural Views	Proper Interior Light Intensity	Prohibition of Smoking	Clean Working Area
Yes	43	44	35	47	52	51
No	11	10	19	4	2	2
Maybe	0	0	0	3	0	1

Figure 09: Scenario of basic sustainable issues according to Indoor environmental quality

Compliance is the focus of social sustainability. Compliance deals with employees of the organization and their rights & facilities. Bangladesh faces a lot of incidents for being non-compliant and facing some issues nowadays so the buyers not only focus on their products nowadays but also focus on their employee's welfare and satisfaction. The percentage rate of sustainable compliance is 78.79%. The digit is quite satisfactory, but the irony of fate is that sometimes this digit is only a numerical digit, and the execution rate is not that satisfactory. Issues with wages, overtime work, and holidays are also observed.

The scenario of basic compliance issues according to survey outcome:

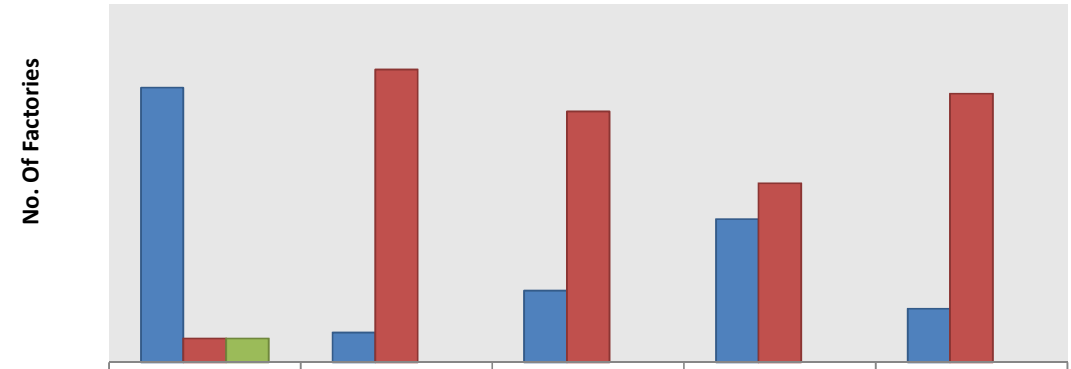


	Dormitory Facilities	Hygenic Canteen Facilities	Hygenic & Sufficient Washroom Facility	Sufficient Fire Extinguisher	Sufficient Emergency Exits	Health & Childcare Facilities
Yes	24	44	46	54	48	45
No	27	10	7	0	6	8
Maybe	3	0	1	0	0	1

Figure 10: Scenario of basic compliance issues according to survey outcome

The scenario of labor-management issues according to survey outcome:

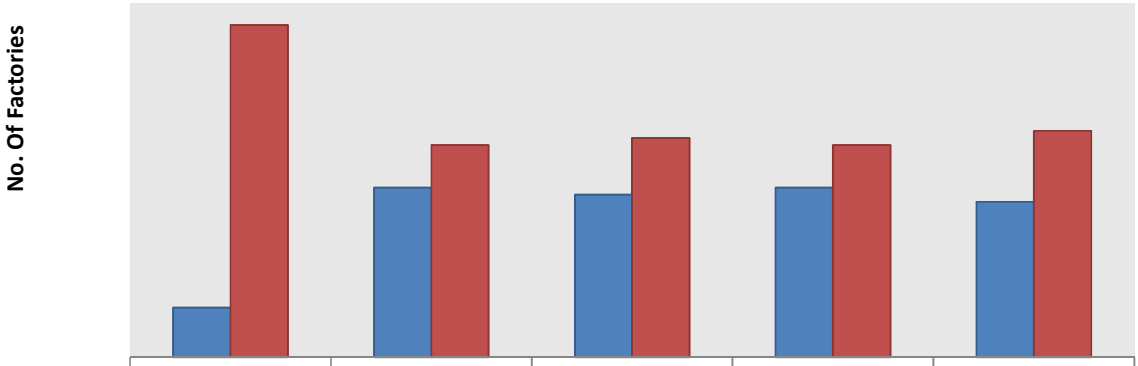
ISSN 2076-9202



	Effective Management System	Forced Labor	Bonded Labor	Prison Labor	Trafficked Labor
Yes	46	5	12	24	9
No	4	49	42	30	45
Maybe	4	0	0	0	0

Figure 11: Scenario of labor-management issues according to survey outcome

The scenario of gender discrimination according to survey outcome:

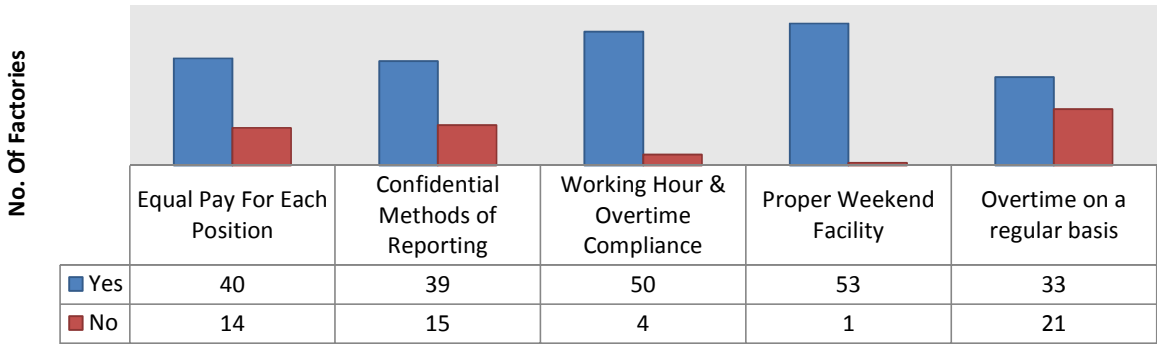


	Harasment & Abuse	Interms of Recruitment	Payment & Promotion	Access to Training	Termination or Retirement
Yes	7	24	23	24	22
No	47	30	31	30	32

Figure 12: Scenario of gender discrimination according to survey outcome

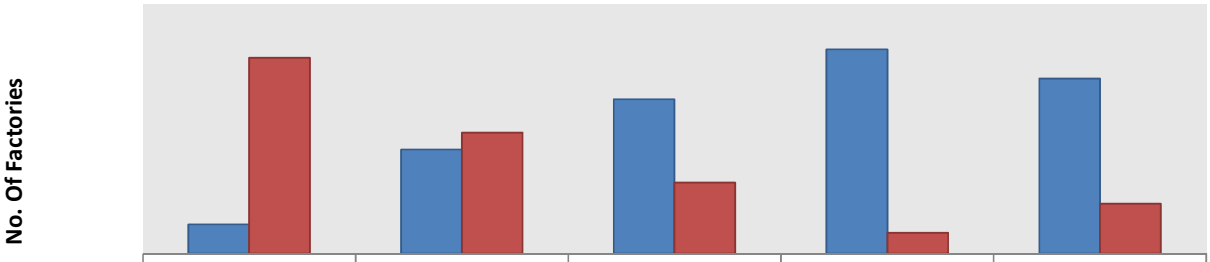
ISSN 2076-9202

The scenario of mandatory compliance rules according to survey outcome:



	Equal Pay For Each Position	Confidential Methods of Reporting	Working Hour & Overtime Compliance	Proper Weekend Facility	Overtime on a regular basis
Yes	40	39	50	53	33
No	14	15	4	1	21

Figure 13: Scenario of mandatory compliance rules according to survey outcome



	Maternity Leave/ Annual Leave/ Social Insurance	No Overtime for Young Workers	Freedom of Workers Association	Adequate Meal Breaks	Prohibition of Hiring Under-Aged Employees
Yes	7	25	37	49	42
No	47	29	17	5	12

Figure: 14 Scenario of mandatory compliance & health hygiene

Standards & Certifications

BSCI & WRAP are the toppers:

Among 54 factories, 32 secured the Business Social Compliance Initiative (BSCI). It is an audit system, which gives the rules and regulations of auditing an organization following human rights, the International Labor Organization (ILO), and national labor law. BSCI deals with promoting the workplace with social compliance. Therefore, BSCI promotes social sustainability.

ISSN 2076-9202

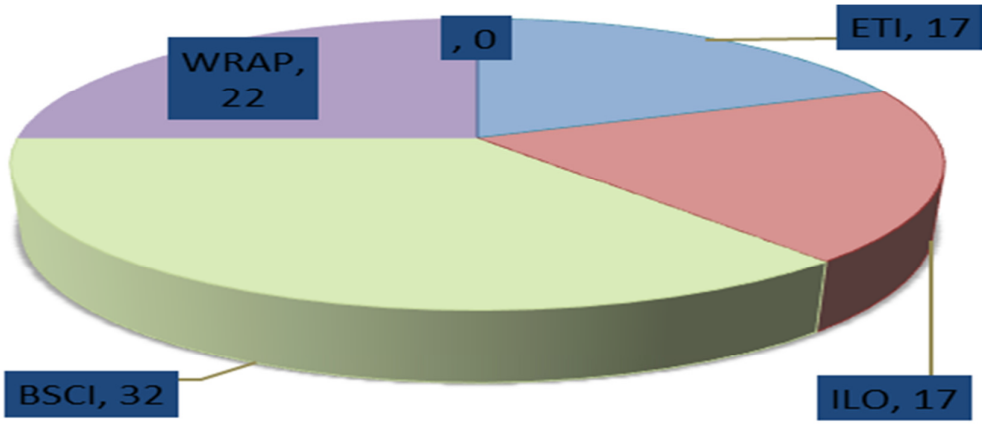


Figure: 15 Standards and Certifications

22 of 54 factories achieved Worldwide Responsible Accredited Production (WRAP) certification. WRAP certification is mainly focused on apparel, sewn products, and footwear. WRAP determines the facility's compliance with its 12 factors, which is relevant to ILO. WRAP also is completely based on compliance and facilitates social sustainability.

Six factories have no certification:

Among 54 factories, six factories could not achieve any type of certification. This can be done for two reasons. Initially, their sustainability rate in compliance was not that satisfactory, so they could not achieve certifications. Another reason can be they are not highly interested in the achievement of certificates; their core concentration is higher production, higher export, and higher business, i.e., traditional business thinking.

Best Social Practices Observed During Survey

- Separate Lockers for every managerial employee.
- Lunch and Prayer room for non-managerial employees.
- Best Non-Managerial employee award.
- Childcare facilities for employees.
- Female supervisor and security guards.
- CSR activities (school, mosque, etc.)
- Insurance for non-managerial employees
- Safe, clean, and ventilated working floor.
- Tree plantation on the production floor.
- A non-managerial employee complains box.
- Fair price shop etc.

5. Findings of the Study

Sustainability study is very important not only for factory survival but also for the factory's growth and development. Sustainability is the discussed issue, and most of the MNCs, Garments & Factories are

ISSN 2076-9202

fighting for survival and making strong competition among the world-class industries. The factory owner is trying to focus on the quality environment, green environments, sufficient air flows, employee & workers welfare, international labor standards, social compliance certificates, suppliers & buyers requirements, and conditions. From the study and analysis, we have got the following findings

I. Most of the factories in Bangladesh are not sustainable. They take sustainability as a less important topic, and they are not aware of the long term.
II. Working hours and overtime-related issues are the most. Sometimes non-managerial employees get pressured for overtime.
III. Completely sustainable factories are facing expansion problems. They cannot expand rapidly as buyers are not ready to pay for their sustainable environment in most cases.
IV. Gender discrimination is occurring. Everyone is talking about women empowerment in public, but only a few are practicing it.
V. Standards are just obtained in some of the factories. No maintenance of certifications is ensured.
VI. Washroom and prayer room facilities are not sufficient.

6. Limitation and future study of the research

In the present study, we have tried to show the prospects and challenges of social sustainability in Bangladesh's clothing and RMG industry. In the study, we have tried to show the impacts of sustainability on Bangladesh's garments or clothing sector. There are many limitations of the study, and our main limitation is the sample size, and we have only taken 1% of total factories. To collect the data, when we have gone to the factories owner are not willing to give the data & information

Shortage of Time	In Bangladesh, more than 6000 (approx.) textile factories are situated for collection of data from a large sample size, more time would be required. More fieldtrips could not possible as because of short time.
Response Rate	Responses from the professionals are not available always as because of their unwillingness and confidentiality of information.
Sampling Procedure	Sampling was done randomly based on recognition and convenience of travelling. Non-probability judgmental sampling procedure was follow for primary data collection.
Complexion in Getting Permission	Another limitation is, getting permission for the fieldtrip or collection of information was little bit complicated as because of rules and regulations of company management.
Irregular or Incomplete Response	Some of the companies could not provide all of the information is as because unbalances in maintenance of proper calculation, confidentiality, unwillingness etc.

7. Conclusions

From the study and data analysis, we have found sustainability is the burning issue of the RMG industry. Factory sustainability is related to factory compliance issues. Factory Compliance is the lifeblood of factory survival. All the compliance is not available in the factory; ISO certification and different bodies are also

ISSN 2076-9202

absent. For the long-term development of the RMG industry, Factory sustainability is essential for factory production and organizational effectiveness. From the study and findings, we may make more sustainable of the factory and ready-made garments industry.

- Strong and strict policy & regulations towards sustainability.
- Creation of awareness about sustainable regulations among managerial & non-managerial employees.
- Development & expansion of the sustainability team in every workplace.
- Ensuring proper compliance and regulation-based training for both the managerial & non-managerial employees.
- Proper evaluation of employees and ensuring employee empowerment.
- Engaging with the CSR (corporate social responsibility) activities in a more effective way.
- The government should enforce proper sustainable law and monitor the progress in an effective way.
- The mindset of the professionals should be changed as sustainability is one of the major parts of the happy production process.

Reference:

Chowdhury, M. S., Siddiqui, K. H.; Paul, S. K. (2021). Role of ethical sourcing in enhancing social sustainability: evidence from the textile and apparel industry of Bangladesh. Journal of Fashion Marketing and Management.

Creswell, J. W., & Poth, C. N. (2017). Qualitative inquiry and research design: Choosing among five approaches. Sage publications.

Dissanayake, D.; Ihalanayake, R. (2019). Social sustainability practices in the textile and clothing supply chain. In Sustainable Fashion Supply Chain Management Springer, Cham., 149–168.

H., B. A., S., K.-S., & J., R. (2017). Assessing the social sustainability of supply chains using Best Worst Method. Resources, Conservation and Recycling, 126, 99–106. https://doi.org/10.1016/j.resconrec.2017.07.020 LK

Hammond, C., & Churchman, D. (2008). Sustaining academic life: A case for applying principles of social sustainability to the academic profession. International Journal of Sustainability in Higher Education, 9(3), 235–245. https://doi.org/10.1108/14676370810885862

Haq, M. A.; Bhuiyan, S. H. (2019). Enhancing Social Sustainability in the Textile and Apparel Industry: A Review of Challenges and Opportunities. International Journal of Sustainable Development & World Policy, 8(3), 32–43.

Hult, G. T. M. (2011). Market-focused sustainability: Market orientation plus! Journal of the Academy of Marketing Science, 39(1), 1–6. https://doi.org/10.1007/s11747-010-0223-4

Littig, B., & Grießler, E. (2005). Social sustainability: A catchword between political pragmatism and social theory. International Journal of Sustainable Development, 8(1–2), 65–79.

Magee, L., Scerri, A., James, P., Thom, J. A., Padgham, L., Hickmott, S., Deng, H., & Cahill, F. (2013). Reframing social sustainability reporting: Towards an engaged approach. Environment, Development and Sustainability, 15(1), 225–243. https://doi.org/10.1007/s10668-012-9384-2

ISSN 2076-9202

Mani, V., Gunasekaran, A., & Delgado, C. (2018). Enhancing supply chain performance through supplier social sustainability: An emerging economy perspective. International Journal of Production Economics, 195(October 2017), 259–272. https://doi.org/10.1016/j.ijpe.2017.10.025

Masri, H. A., & Jaaron, A. A. M. (2017). Assessing green human resources management practices in Palestinian manufacturing context: An empirical study. Journal of Cleaner Production, 143, 474–489. https://doi.org/10.1016/j.jclepro.2016.12.087

Missimer, M., Robèrt, K. H., & Broman, G. (2017). A strategic approach to social sustainability - Part 1: exploring the social system. Journal of Cleaner Production, 140, 32–41. https://doi.org/10.1016/j.jclepro.2016.03.170

Munda, G. (2006). Social multi-criteria evaluation for urban sustainability policies. Land Use Policy, 23(1), 86–94. https://doi.org/10.1016/j.landusepol.2004.08.012

Psarikidou, K., & Szerszynski, B. (2012). Growing the social: Alternative agrofood networks and social sustainability in the urban ethical foodscape. Sustainability: Science, Practice, and Policy, 8(1), 30–39. https://doi.org/10.1080/15487733.2012.11908082

Rahman, M. H.; Paul, S. K. (2018). Improving Social Sustainability in the Ready-Made Garment Industry: A Study on Compliance Status and Challenges. Journal of Textile Science & Fashion Technology, 4(4), 407–413.

Rogers, D. S., Duraiappah, A. K., Antons, D. C., Munoz, P., Bai, X., Fragkias, M., & Gutscher, H. (2012). A vision for human well-being: Transition to social sustainability. Current Opinion in Environmental Sustainability, 4(1), 61–73. https://doi.org/10.1016/j.cosust.2012.01.013

Siddiqui, K. H.; Chowdhury, M. S.; Paul, S. K. (2020). Textile and Ready-Made Garment Sector of Bangladesh: A Comparative Study of Social Sustainability Practices. Industry IGI Global. In Social Sustainability in the Global Textile and Fashion, 207–226.

Siyambalapitiya, J., Zhang, X., & Liu, X. (2018). Green human resource management: A proposed model in the context of Sri Lanka's tourism industry. Journal of Cleaner Production, 201(02), 542–555. https://doi.org/10.1016/j.jclepro.2018.07.305

Weingaertner, C., & Moberg, Å. (2014). Exploring social sustainability: Learning from perspectives on urban development and companies and products. Sustainable Development, 22(2), 122–133. https://doi.org/10.1002/sd.536

ISSN 2076-9202

AUDIT QUALITY, ESG AND CORPORATE FINANCIAL PERFORMANCE

Nguyen Thi Le Ha[1,3], Nguyen Duong Thao Han[2,3]

[1,2] School of Economics, Finance and Accounting, International University, Ho Chi Minh City, Vietnam

[3]Vietnam National University, Ho Chi Minh City, Vietnam

Abstract

The current study aims to develop a research model for investigating the moderating role of audit quality in the relationship between environmental, social, and governance factors and corporate financial performance in the context of an emerging economy, Vietnam. The study gathers a sample of non-financial firms listed on the Ho Chi Minh City Stock Exchange (HOSE) and the Ha Noi Stock Exchange (HNX) from 2017 to 2022. Using panel data estimations, the study examines both the direct effects of environmental, social, and governance on corporate financial performance and the moderating effects of audit quality on the association between environmental, social, and governance factors and corporate financial performance of Vietnamese listed firms. The study emphasizes the importance of prioritizing environmental, social, and governance practices for long-term business success and offers useful reference sources for policymakers, businesses, and investors in Vietnam, an emerging market.

Keywords: ESG; Sustainable development; Audit quality; Financial performance; Vietnam; Big4; Panel data.

Introduction

The global surge in interest surrounding Sustainable Development Goals (SDGs) and Environmental, Social, and Governance (ESG) disclosure has emphasized their significance in corporate operations. In developed countries, international policies such as the United Nation's 2030 Agenda and the European Green Deal have laid out mandatory requirements for all societal components to take responsibility in advancing these goals. In response to growing concerns about sustainability and societal impact, corporations worldwide are increasingly integrating ESG principles into their strategies and decision-making processes (MF Alsayegh et al., 2020). This paradigm shift has not only reshaped the corporate landscape but has also caught the attention of diverse stakeholders, including investors, customers, regulators, and society at large. According to Bloomberg Intelligence, global ESG assets are estimated to reach $50 trillion by 2025, equivalent to one-third of assets under management worldwide. This indicates that ESG is emerging as a leading trend in global investment. This fervor is rooted in the recognition that sustainable practices are not only necessary for environmental and social well-being but are also indispensable for long-term financial success (Boffo & Patalano, 2020).

However, alongside the opportunities presented by this burgeoning trend, companies are confronted with an array of challenges, particularly amidst evolving global risk profiles exacerbated by phenomena such as the

ISSN 2076-9202

economic volatility, climate change, and COVID-19 pandemic. After many consequences of the world economic crisis in 2008, corporate leaders began to focus more on promoting sustainable business development to attract investment capital and improve business efficiency. As more businesses adopt ESG standards, setting sustainable development goals for companies in the new era becomes not only about reputation-building but also about recognizing the tangible economic benefits of practicing ESG. Businesses increasingly realize that ESG practices impact significant economic benefits such as stable growth, long-term revenue, and profits for both the company and investors. Although ESG is considered non-financial factors, it has the potential to financially impact a company's economic variables.

Vietnam is one of the countries most likely to be influenced by the climate change, facing potential economic losses estimated at 14.5% of GDP by 2050 (PWC, 2022). Yet, amidst these challenges lie opportunities for proactive businesses. Vietnam's commitment to embracing ESG standards not only aligns with global sustainability objectives but also positions businesses to attract significant investment, with projections indicating potential climate-related investments amounting to USD 753 billion from 2016 to 2030. Vietnam recently received a 15.5 billion USD commitment from the G7 to reduce coal use. Financial institutions earn $1.7 billion in revenue from issuing bonds to fund ESG projects. In particular, Vietnam ranks second in ASEAN green bond issuance in 2021, with $1.5 billion, which is five times higher than in 2020. This demonstrates a growing interest in the green factor and ESG standards (Nguyen, 2023). In Vietnam, implementing ESG practices not only improves a company's reputation, reduces risks, and increases efficiency, but it also attracts capital, opens new markets, and contributes to Vietnam's Sustainable Development Goals (SDGs). Vietnam's commitment to the 2030 Agenda highlights the critical role of ESG in meeting global standards and aligning with the United Nations' SDGs.

However, despite the growing emphasis on ESG, a fundamental challenge persists in disentangling the relationship between ESG performance and financial outcomes. Most firms publish sustainability reports separately from their financial reports, hindering efforts to gauge the impact of ESG practices on financial performance. Consequently, understanding the underlying correlation between ESG performance and financial outcomes is crucial for fostering informed decision-making and the discourse on ESG investing. Furthermore, the outbreak of COVID-19 in 2020 and the accompanying lockdowns catalyzed numerous adjustments in the ESG principles, prompting organizations to reassess their management and investment strategies. As the world faced the COVID-19 crisis, ESG principles once again became the focus of discussion among companies and investors. This pushes management and investment strategies to shift to ESG instead of traditional financial indicators. Heightened emphasis on accountability, transparency, and data security underscored the pivotal role of ESG principles in navigating uncertain terrain and fostering stakeholder trust amidst unprecedented challenges.

Independent audit firms play a pivotal role in verifying the accuracy and truthfulness of a company's sustainability reporting. The auditor's professional acumen and objectivity create confidence in corporate reporting practices, influencing financial decisions, risk management strategies, ethical conduct, and regulatory compliance (Zahid & Simga-Mugan, 2022). High audit quality ensures the reliability and accuracy of financial reporting, particularly concerning ESG-related disclosures. Robust audit practices enhance transparency and accountability, providing stakeholders with confidence in reported ESG metrics.

ISSN 2076-9202

Consequently, the interplay between audit quality and ESG performance influences investors' perceptions and decisions, impacting firms' access to capital and overall market valuation. Understanding this relationship is crucial for both managers and policymakers seeking to promote sustainable business practices while safeguarding financial integrity and investor trust.

The current study's objectives are as follows.

To determine the correlation between ESG and corporate financial performance in Vietnamese listed companies.

To examine the moderating role of audit quality in the relationship between ESG and corporate financial performance in Vietnamese listed companies.

Literature Review

Review of Related Theories

Stakeholder Theory

The development of Sustainable Development Reports and ESG originates from the idea of R. Edward Freeman's stakeholder theory in 1984 (Velte, 2017). This theory asserts that shareholders are not the only important stakeholders to be considered, but there are also other stakeholders such as employees, communities, citizens.

The stakeholder theory suggests that organizations have an obligation to treat stakeholders equally and in cases where stakeholders have conflicting interests, businesses also have an obligation to ensure optimal harmony between them. The theory is also used to explain why some organizations choose to voluntarily implement Environmental Management Accounting (EMA) to meet the increasing demand for environmental protection information from government agencies, economic organizations, investors, consumers, and businesses.

The most modern stakeholder theory (Freeman, et al., 2010) indicates that stakeholders are individuals or groups that can influence or be influenced by a company's performance and achievements. Companies will strive to have good relationships with stakeholders by meeting the needs for operational and non-financial efficiency as well as strengthening trusted relationships for the long-term benefit of the company (Freeman et al., 2010).

Trade-off Theory

The quality of the environment significantly impacts the standard of living and life expectancy within a society (Shah et al., 2020). Ever since Carroll (1979) introduced the classification of corporate social responsibility (CSR) investments into environmental, social, and governance dimensions, the terms CSR and ESG have been used interchangeably in scholarly discussions. Trade-off theory from neoclassical researchers Friedman, 1970; Vance, 1975; Wright & Ferris, 1997 emphasizes the seminal perspective on the relationship between ESG (Environmental, Social, and Governance) factors and Corporate Financial Performance (CFP). They argue that a company's primary social obligation is to maximize economic benefits for its shareholders, and allocating resources to ESG initiatives raises operating costs, leading to diminished profitability.

Managerial Myopia Theory

Managerial myopia theory, which derived from the time orientation theory in social psychology, suggests

ISSN 2076-9202

that managers have a short-term perspective in their time cognition. They tend to prioritize and highly value immediate outcomes over future development of the enterprise (Stein, 1988; Laverty, 1996; Lin et al., 2019). Rather than considering the long-term growth of the company, myopic managers are more interested in immediate gratification and benefits. Because the costs of socially responsible actions are incurred immediately, the associated long-term benefits are less foreseeable and less attractive to short-term focused investors.

Agency Theory

Agency theory is a principle used to explain and resolve conflicts of interest, agency problems and information asymmetry in the relationship between principals (shareholders) and agents (managers) (Raimo et al., 2021). Based on the agency theory of Jensen and Meckling (1976), it can be argued that ESG engagement represents an agency problem between managers and shareholders. According to this theory, ESG spending is not in the best interest of shareholders because it represents a direct capital outflow that will reduce profits. Previous studies finding evidence consistent with agency theory include Brown et al. (2006), Barnea and Rubin (2010), Schuler and Cording (2006), Allouche and Laroche (2005), Kao et al. (2018), and Borghesi, Houston and Naranjo (2014).

Review of Related Studies

The correlation between ESG and various firm-level factors has been extensively examined in numerous studies over recent decades. Over 2,000 empirical investigations conducted since the mid-twentieth century have focused on testing the relationship between CSR and CFP, with this research trend on the rise (Friede et al., 2015). The literature on ESG can be categorized into two main streams: the first one focuses on the factors that influence CSR disclosure, while the other one examines how ESG affects economic outcomes at the firm level. First, factors influencing CSR disclosure comprise company dimensions, financial leverage, profitability, government ownership, industry sensitivity to environmental issues, board characteristics, internationalization, and corporate reputation (Dyduch & Krasodomska, 2017). Second, a substantial body of research explores how ESG practices influence various firm-level outcomes. Studies indicate that ESG initiatives enhance a company's public perception, leading to increased sales and revenue (Nyame-Asiamah & Ghulam, 2019), while risk-related analyses reveal a negative association between ESG and financial leverage and overall risk profile (Harjoto, 2017).

Despite the significance of factors like company image, leverage, and risk in assessing firm performance, the question remains: do these factors truly lead to improved financial performance? Managers are especially focused on financial performance because of its immediate influence on the value of the firm (Hill & Snell, 1988; Saygili et al., (2022). Although ESG criteria are crucial for investors in evaluating the sustainability of companies, consensus regarding its impact on CFP remains elusive. ESG primarily focuses on non-financial aspects of company operations and management (Nirino et al., 2021). Naeem et al., 2022 conducted a study on the relationship between ESG scores and the operational efficiency of environmentally sensitive industries. Using a Dynamic regression method with a one-year lag for the operational efficiency data of 383 environmentally sensitive companies from 2010 to 2019, the study found the following results: (1) ESG index has no significant correlation with ROA; (2) ESG positively influences Tobin's Q and ROE, contributing to increasing the market value of companies. Ting et al., (2020) corroborated this stance,

ISSN 2076-9202

demonstrating through their analysis of ESG scores from 2014 to 2018 across developed and emerging markets that ESG initiatives indeed bolster firm performance. Conversely, according to the trade-off hypothesis in the literature, it is proposed that ESG initiatives have an adverse effect on CFP due to the associated rise in expenses, reduction in cash flow, and undermine the competitive advantage of firms (Galant and Cadez, 2017). Zahid et al., (2022) investigated the correlation between ESG, CFP, and audit quality in Western European nations. Their results suggest that the adverse effect of ESG on corporate financial performance is more pronounced in firms certified by the Big Four accounting firms. Similarly, other research has explored the U-shaped association between ESG and CFP, indicating that initially, ESG initiatives may detrimentally affect CFP due to cost-benefit imbalances. However, CFP is expected to improve once the ESG level reaches a certain threshold (Nollet et al., 2016).

Three potential explanations for the inconsistent results on the relationship between ESG and CFP have been proposed in previous studies that have addressed the inconsistent findings. First of all, the empirical data will not be comparable due to variations in ESG disclosure and ESG score measures among nations or regions (Brooks and Oikonomou, 2018). Second, the developmental stages of developed and emerging markets differ. Differences in the results of ESG implementation can be attributed to the likelihood that stakeholders in developed countries will be more supportive of a company's ESG strategy than stakeholders in developing countries (Ruan and Liu, 2021). Additionally, the impact of ESG on CFP varies across different industries and sectors due to inherent differences (Yoo and Managi, 2022). The causal relationship between CFP and ESG is complex. The role of each ESG pillar and CFP should be thoroughly examined from a practical standpoint (Lee et al., 2022). According to El Khoury et al., (2021) analysis of the non-linear relationship between the three ESG pillars and CFP in the banking industry, there is a U-shaped relationship between the ESG pillars and CFP. The relationship between Latin American multinational corporations' CFP and ESG in the context of emerging markets was examined by Duque-Grisales and Aguilera-Caracuel (2021). According to the findings, there was a negative correlation between CFP and not just the overall ESG level, but also with each of the pillars.

The relationship between ESG factors and financial performance is not simply a straightforward cause-and-effect scenario. While some experts argue that ESG policies impose costs on companies, potentially leading to decreased profitability, others demonstrate a positive correlation between CFP and ESG components. In short, the existing literature does not provide conclusive evidence linking ESG initiatives to a firm's financial performance. The direction of this relationship appears to vary based on the market studied and the specific profitability metrics utilized. The absence of a conclusive relationship and a predominant focus on developed countries creates an opportunity for future research, and our research fill this gap, particularly in the context of the Vietnamese market. Furthermore, recent research often oversimplifies the connection between ESG and financial performance, disregarding potential moderating factors like audit quality. Thus, it's crucial to explore neglected areas, such as audit quality, to develop a more comprehensive understanding of the ESG-CFP relationship. Notably, Zahid et al. (2022) found that increased audit quality, as measured by Big 4 auditors, in conjunction with ESG, may detrimentally impact a firm's historical financial performance. However, there's still limited understanding of the extent to which audit quality moderates the relationship between ESG and financial performance. Hence, this study

ISSN 2076-9202

investigates the correlation between ESG and corporate financial performance in Vietnamese listed companies, with a specific focus on the moderating influence of audit quality.

Hypothesis Development

ESG and Corporate Financial Performance

The trade-off theory is supported by studies indicating negative correlations, wherein ESG practices increase operational expenses and detrimentally impact Corporate Financial Performance (CFP) (Wang & Bansal, 2012; Zahid et al., 2022). Additionally, research indicating U-shaped or inverted U-shaped associations suggests that the relationship between ESG and CFP is influenced by the extent of ESG investments (Brammer & Millington, 2008). Barnett and Salomon (2012) illustrate a U-shaped relationship, suggesting that initially, ESG activities may impede CFP due to costs outweighing benefits, but later on, the connection reverses and becomes positive.

Furthermore, researchers have examined the impact of ESG on various metrics of corporate performance within developing markets. Duque-Grisales and Aguilera-Caracuel (2021) examined the ESG-CFP relationship among multinational corporations in Latin America's emerging markets. Their findings indicate that ESG initiatives incur additional costs for companies, negatively affecting CFP. For instance, investments in clean energy technology aimed at reducing pollution emissions may strain a company's cash flow, ultimately leading to a decline in CFP. El Khoury et al., (2021) investigated ESG-CFP relationship for 108 East Asian listed firms operating in the Industrials sector for the period from 2011 to 2017, considering accounting measures (Return on Assets (ROA) and Return on Equity (ROE)) and market indicators (Stock Return (RET) and Price-to-Book ratio (PB)).

While some experts argue that ESG policies are nothing more than a cost to a company, resulting in a decrease in profitability (Kim & Lyon, 2015), others demonstrate a positive correlation between CFP and ESG components (Shahzad et al., 2022). In short, there is insufficient evidence in the literature to draw a firm-specific conclusion about the relationship between ESG and financial performance. The literature reviewed above demonstrates how the direction of the relationship between ESG and CFP varies based on the profitability indexes used and the market in which the research was conducted. The unavailability of a conclusive relation creates an opportunity for this research fill the gap.

Hypothesis 1 (H1): *ESG and its components have a negative impact on Corporate Financial Performance (CFP).*

Audit Quality, ESG and Corporate Financial Performance

The agency theory developed by Jensen and Meckling (1976) states that auditing is a crucial tool for improving ESG performance, limiting opportunistic behavior, and reducing information inequality. The effectiveness of ESG performance and transparency in corporate activities correlates with the higher quality of audits, leading to enhanced legitimacy and reputation for firms (Hammami & Zadeh, 2020). An external financial audit entails a comprehensive risk assessment of various aspects of a business that could impact the accuracy of financial information, including financing ESG practices, corporate reputational risk, allocation of corporate resources, and firm profitability, particularly if company's ESG practices have a material impact on its financial performance or if there are risks related to reputational damage that could affect financial reporting. Consequently, financial auditors are implicitly trained in ESG practices and strategies, thereby

ISSN 2076-9202

deterring corporate misconduct and aiding firms in improving their practices while mitigating reputational risks (Asante-Appiah & Lambert, 2022). The oversight and corrective function of high-quality audits can enhance corporate financial outcomes, including ESG practices. Additionally, it can prevent misconduct and financial manipulation, which harm reporting profitability and other financial metrics. Indeed, Chen et al., (2016) suggest that higher quality financial data is advantageous for a company's non-financial disclosures (such as ESG reporting). Notably, the credibility of annual reports, including voluntarily provided supplementary data such as ESG reporting, is bolstered by firms' commitment to employing high-quality auditors (Zahid et al., 2022a, b, c).

Recent research suggests that clients of the Big Four auditing firms tend to exhibit stronger financial performance (Phan et al., 2020), attributing this to the rigorous auditing standards upheld by accredited audit firms, which ensure the reliability, transparency, and value of financial statements, while promoting sound corporate governance and internal controls. Dakhli (2021) explores the influence of audit quality as a moderating factor, revealing that the favorable effect of CSR is more pronounced among French companies audited by Big Four firms. The proxies used to measure financial performance were ROA, ROE, and Tobin's Q. Therefore, companies emphasizing environmental and social responsibility often engage Big Four auditing firms and maintain elevated reporting standards, emphasizing their commitment to transparency and integrity in business operations.

Considering the relation between financial and nonfinancial audits with ESG reporting and Corporate Financial Performance (CFP), audit quality serves as a moderating factor influencing the relationship between ESG and CFP. It improves the quality of ESG initiatives from the perspective of financial reporting and fosters trust in corporate financial decisions, shedding light on the financial implications of ESG practices. Therefore, audit quality is anticipated to positively moderate the ESG–CFP relationship in the context of Vietnamese market, given that higher audit quality enhances ESG practices (by limiting opportunistic behaviors and resolving agency conflicts) and ensuring regulatory compliance in a developing market.

Hypothesis 2 (H2): *Audit quality significantly moderates the relationship between ESG and Corporate Financial Performance (CFP).*

Research Methodology

Research Design

The research design is based on quantitative methodology in order to examine the correlation between audit quality, ESG practices, and corporate financial performance. The rationale behind choosing a quantitative approach is for the purpose of evaluating relationships, which is consistent with previous research efforts in this field (Chen et al., 2018; Hernandez et al., 2020; Singh et al., 2020). The importance of ESG practices and their impact on firm performance is increasingly recognized in the context of sustainability. However, the extent of disclosure of these practices varies among countries and companies. To investigate these relationships and identify firms engaged in ESG reporting, secondary data from the Thomson Reuters Eikon database is used, consistent with previous research findings (Li et al., 2019; Franceschelli et al., 2019). The comprehensive data catalogue provided by the Eikon database includes corporate financial data and ESG disclosure information for Vietnamese listed companies, which would be challenging to gather in a different

ISSN 2076-9202

way. Moreover, the Screener and DataStream Formula functions assist in gathering crucial data via Thomson Reuters Eikon for Excel.

Initially, the secondary data from non-financial listed companies headquartered in Vietnam, encompassing both the Ho Chi Minh City Stock Exchange (HOSE) and the Ha Noi Stock Exchange (HNX), in the 6-year period from 2017 to 2022 will be collected. To ensure consistency in the analysis, financial firms are excluded in the study due to variations in accounting standards, which would have hindered meaningful comparisons of financial statements (Doni et al., 2019). Financial companies adhere to different reporting regulations, necessitating their exclusion from our study. Additionally, we eliminated companies lacking available financial performance indicators or ESG data, as ESG disclosure is typically voluntary, resulting in limited reporting among firms. However, in 2020, The Ministry of Finance issued Circular No. 96/2020/TT-BTC dated November 16, 2020, which mandates certain ESG reporting requirements for public and listed companies in Vietnam (ESG Asia Report 2022). Specifically, Vietnamese public and listed companies are obligated to include an ESG report in their annual reports. Subsequently, the sample underwent further filtering based on independent, dependent, control, and moderating variables. Following meticulous scrutiny, we selected 295 companies, resulting in 1,770 firm-year observations, due to data unavailability for some companies.

The following multivariate regression model is estimated to test the hypothesized relationship between ESG and CFP:

$$CFP_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 Size_{i,t} + \beta_3 FL_{i,t} + \beta_4 Div_payout_{i,t} + \beta_5 PTB_{i,t} + \beta_6 COVID_{19} + \sum_{i=1}^{n} \beta_n Industry_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n Year_Dummies_{i,t} + \varepsilon_{i,t} \quad (1)$$

In Equation (1), "i" denotes the firm, and "t" represents the time in years. "CFP" signifies the financial performance, gauged through metrics such as Sales Revenue (ln (Rev)), Return on Assets (ROA) and Return on Equity (ROE). "ESG" refers to the environmental, social, and governance scores. "Size" denotes the natural logarithm of the total assets of the firm. "Financial leverage (FL)" is quantified as the ratio of total debt to total assets. "Dividend payout (Div)" is measured as the dividend paid divided by total assets, while "PTB" stands for the price-to-book ratio. Additionally, we incorporate industry, and year dummies to mitigate common endogeneity issues that arise over time across various industries. "Ɛ" represents the error term.

To explore the moderating role of audit quality and the cost of audits in the ESG-CFP nexus, an interaction term is included, "Big4×ESG," which reflect the moderating effect of audit quality on the ESG and CFP nexus:

$$CFP_{i,t} = \alpha + \beta_1 ESG_{it} + \beta_2 Big4_{i,t} \times ESG_{i,t} + \beta_3 Size_{i,t} + \beta_4 FL_{i,t} + \beta_5 Div_payout_{i,t} + \beta_6 PTB_{i,t} + \beta_7 COVID_{19} + \sum_{i=1}^{n} \beta_n Industry_dummies_{i,t} + \sum_{i=1}^{n} \beta_n Year_Dummies_{i,t} + \varepsilon_{i,t} \quad (2)$$

ISSN 2076-9202

Equation (2) describes the model in detail, wherein all variables remain consistent with Equation (1), except for the interaction term, denoted as Big4 × ESG, which aims to capture the moderating influence of audit quality.

Variable Measurement

Dependent Variables

The dependent variable of this study is corporate financial performance (CFP). In line with earlier studies, Sales Revenue, Return on Assets (ROA) and Return on Equity (ROE) were selected as the accounting measures to explore ESG-CFP relationship. Sales revenue is the natural logarithm of net sales in a year. They are some of the most common measures used in literature (Cho et al., 2019; Alareeni & Hamdan, 2020; Chakroun & Amar, 2021; Zahid et al., 2022).

Independent variables

ESG score and its components (environmental, social, and governance) are used as independent variables. The ESG score is a multidimensional index created from the results of disclosures about the environment, social issues, and governance (Buallay et al., 2020; Neitzert & Petras, 2022). All ESG metrics are sourced from Thomson Reuters database, which covers over 85% of the global market cap and includes more than 630 ESG metrics publicly available to create a subset of 186 comparable measures. These measures are then categorized into ten groups. The final ESG score scales are from 0 to 100, where a higher score indicates superior ESG performance (Refinitiv, 2020).

Moderating Variables

In this study, audit quality serves as a moderating factor. Based on previous research, audit quality is operationalized using the Big Four accounting firms, comprising Deloitte, Ernst & Young (EY), KPMG, and PriceWaterhouseCoopers (PwC). These firms are renowned for their established reputations, incentivizing them to deliver high-caliber auditing services (Angelo, 1988; Watkins et al., 2004). It is represented as a dummy variable, with a value of 1 indicating that a Big Four firm conducts the audit of the company's financial statements, and 0 otherwise.

Control Variables

Four control variables are widely applied from previous studies including firm size, financial leverage, dividend payout, and price-to-book value, aimed at capturing the effects of size, flexibility, profitability, and firm growth, respectively (Margolis et al., 2009; Andersen & Dejoy, 2011; Aouadi & Marsat, 2016; Flammer, 2015; Atan et al., 2018).

The first control variable of the study is firm size. Firm size is measured as the natural logarithm of total assets (Zhu et al., 2014). The second control factor, financial leverage is measured as the ratio of total liabilities to total assets. Additionally, dividend payout is measured as the ratio of dividends paid to total assets (Benlemlih, 2019). The price-to-book value, indicating a company's growth opportunities, is computed as the ratio of the market value of shares to the book value of equity. Finally, the COVID-19 as a control variable is also included in the model to see if there is any change in the impact of ESG scores on financial performance during COVID-19 compared to the previous period.

Conclusion

ISSN 2076-9202

The present study's purpose is to design a research framework for exploring how ESG factors impact a company's financial performance (CFP) and how audit quality, particularly the involvement of Big4 auditors, moderates the relationship between ESG and financial performance. Secondary data of non-financial firms listed on both the Ho Chi Minh City Stock Exchange (HOSE) and the Ha Noi Stock Exchange (HNX) from 2017 to 2022 will be collected, processed and analyzed to figure out the association among independent and dependent variables. Research findings will hold significant implications for managers and policymakers in emerging countries.

References

Alareeni, B. A., & Hamdan, A. (2020). ESG impact on performance of US S&P 500-listed firms. *Corporate Governance, 20*(7), 1409-1428. https://doi.org/10.1108/CG-06-2020-0258

Allouche, J., & Laroche, P. (2005). A meta-analytical investigation of the relationship between corporate social and financial performance. Revue de gestion des Ressources Humaines, 57, 18–41. https://hal.archives-ouvertes.fr/hal-00923906

Alsayegh, M. F., Abdul Rahman, R., & Homayoun, S. (2020). Corporate Economic, Environmental, and Social Sustainability Performance Transformation through ESG Disclosure. Sustainability, 12(9), 3910. https://doi.org/10.3390/su12093910

Andersen, M. L., & Dejoy, J. S. (2011). Corporate Social and Financial Performance: The Role of Size, Industry, Risk, R&D, and Advertising Expenses as Control Variables. Business and Society Review, 116(2), 237–256. https://doi.org/10.1111/j.1467-8594.2011.00384

Aouadi, A., & Marsat, S. (2016). Do ESG Controversies Matter for Firm Value? Evidence from International Data. Journal of Business Ethics, 151(4), 1027–1047. https://doi.org/10.1007/s10551-016-3213-8

Aqabna, S. M., Aga, M., & Jabari, H. N. (2023). Firm Performance, Corporate Social Responsibility, and the Impact of Earnings Management during COVID-19: Evidence from MENA Region. Sustainability, 15(2), 1485. https://doi.org/10.3390/su15021485

Asante-Appiah, B., & Lambert, T. A. (2023). The role of the external auditor in managing environmental, social, and governance (ESG) reputation risk. Review of Accounting Studies, 28, 2589–2641. https://doi.org/10.1007/s11142-022-09706-z

Atan, R., Alam, Md. M., Said, J., & Zamri, M. (2018). The impacts of environmental, social, and governance factors on firm performance: Panel study of Malaysian companies. Management of Environmental Quality, 29(2), 182–194. https://doi.org/10.1108/meq-03-2017-0033

Barnea, A., & Rubin, A. (2010). Corporate social responsibility as a conflict between shareholders. Journal of Business Ethics, 97(1), 71–86. https://doi.org/10.1007/s10551-010-0496-z

Barnett, M. L., & Salomon, R. M. (2012). Does it pay to be really good? Addressing the shape of the relationship between social and financial per formance. Strategic Management Journal, 33(11), 1304–1320. http://dx.doi.org/10.1002/smj.1980

Benlemlih, M. (2019). Corporate social responsibility and dividend policy. Research in International Business and Finance, 47, 114-138. http://dx.doi.org/10.2139/ssrn.2566876

Bhaskaran, R. K., Ting, I. W. K., Sukumaran, S. K., & Sumod, S. D. (2020). Environmental, social and governance initiatives and

ISSN 2076-9202

wealth creation for f irms: An empirical examination. Managerial and Decision Economics, 41(5), 710–729. https://doi.org/10.1002/mde.3131

Bodhanwala, S. and Bodhanwala, R. (2023), "Environmental, social and governance performance: influence on market value in the COVID-19 crisis", Management Decision, Vol. 61 No. 8, pp. 2442-2466. https://doi.org/10.1108/MD-08-2022-1084

Boffo, R., and R. Patalano (2020), "ESG Investing: Practices, Progress and Challenges", OECD Paris, www.oecd.org/finance/ESG-Investing-Practices-Progress-and-Challenges.pdf

Bondy, K., Moon, J., & Matten, D. (2012). An Institution of Corporate Social Responsibility (CSR) in Multi-National Corporations (MNCs): Form and Implications. Journal of Business Ethics, 111, 281–299. https://doi.org/10.1007/s10551-012-1208-7

Borghesi, R., Houston, J. F., & Naranjo, A. (2014). Corporate socially responsible investments: CEO altruism, reputation, and shareholder interests. Journal of Corporate Finance, 26(C), 164-181. https://doi.org/10.1016/j.jbankfin.2024.107130

Brammer, S., & Millington, A. (2008). Does it pay to be different? An analysis of the relationship between corporate social and financial performance. Strategic Management Journal, 29(12), 1325–1343. https://doi.org/10.1002/smj.714

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. The British Accounting Review, 50, 1-15. https://doi.org/10.1016/j.bar.2017.11.005

Brown, L. D., & Caylor, M. L. (2006). Corporate governance and firm valu ation. Journal of Accounting and Public Policy, 25(4), 409–434. https://doi.org/10.1016/j.jaccpubpol.2006.05.005

Buallay, A. (2019). Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector. Management of Environmental Quality, 30(1), 98-115. https://doi.org/10.1108/MEQ-12-2017-0149

Buallay, A., Kukreja, G., Aldhaen, E., Al Mubarak, M., & Hamdan, A. M. (2020). Corporate social responsibility disclosure and firms' performance in Mediterranean countries: A stakeholders' perspective. EuroMed Journal of Business, 15(3), 361-375. https://doi.org/10.1108/EMJB-05-2019-0066

Buchanan, J. L., Commerford, B. P., & Wang,E.(2021).Auditor actions and the deterrenceofmanageropportunism:Theimportanceofcommunicationtothe board and consistency with peer behavior. The Accounting Review, 96(3), 141–163.

Busch, T., & Friede, G. (2018). The robustness of the corporate social and financial performance relation: A second-order meta-analysis. Corporate Social Responsibility and Environmental Management, 25(4), 583–608. https://doi.org/10.1002/csr.1480

Chairani, C., & Siregar, S. V. (2021). The effect of enterprise risk management on financial performance and firm value: The role of environmental, social and governance performance. Meditari Accountancy Research, 29(3), 647-670. https://doi.org/10.1108/MEDAR-09-2019-0549

Chakroun, S., Ben Amar, A., & Ben Amar, A. (2022). Earnings management, financial performance and the moderating effect of corporate social responsibility: Evidence from France. Management Research Review, 45(3), 331-362.

ISSN 2076-9202

https://doi.org/10.1108/MRR-02-2021-0126

Chen L., Srinidhi B., Tsang A., Yu W. (2016). Audited financial reporting and voluntary disclosure of corporate social responsibility (CSR) reports. Journal of Management Accounting Research, 28(2), 53–76. https://doi.org/10.2308/jmar-51411

Chen, C.S., Yu, C.C., Hu, J.S., 2018. Constructing performance measurement indicators to suggested corporate environmental responsibility framework. Technol Forecast Soc Change 135, 33–43. https://doi.org/10.1016/j.techfore.2017.05.033

Cho, S. J., Chung, C. Y., & Young, J. (2019). Study on the relationship be tween CSR and financial performance. Sustainability, 11(2), 343. https://doi.org/10.3390/su11020343

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling Theory: A Review and Assessment. Journal of Management, 37(1), 39-67. https://doi.org/10.1177/0149206310388419

Dakhli, A. (2021). Does financial performance moderate the relationship be tween board attributes and corporate social responsibility in French firms? Journal of Global Responsibility, 12(4), 373–399. https://doi.org/10.1108/JGR-02-2021-0016

David, P., Bloom, M., & Hillman, A. J. (2007). Investor activism, managerial responsiveness, and corporate social performance. Strategic Management Journal, 28(1), 91–100. https://doi.org/10.1002/smj.571

De Lucia, C., Pazienza, P., & Bartlett, M. (2020). Does good ESG lead to better f inancial performances by firms? Machine learning and logistic regression models of public enterprises in Europe. Sustainability, 12(13), 5317. https://doi.org/10.3390/su12135317

Dewi, K., & Monalisa, M. (2016). Effect of corporate social responsibility disclosure on financial performance with audit quality as a moderating variable. Binus Business Review, 7(2), 149–155. https://doi.org/10.21512/bbr.v7i2.1687

Doni, F., Larsen, M., Bianchi Martini, S., & Corvino, A. (2019). Exploring integrated reporting in the banking industry: The multiple capitals approach. Journal of Intellectual Capital, 20(1), 165-188. https://doi.org/10.1108/JIC-11-2017-0146

Duque-Grisales, E., & Aguilera-Caracuel, J. (2021). Environmental, Social and Governance (ESG) Scores and Financial Performance of Multilatinas: Moderating Effects of Geographic International Diversification and Financial Slack. Journal of Business Ethics, 168, 315–334. https://doi.org/10.1007/s10551-019-04177-w

Dyduch, J., & Krasodomska, J. (2017). Determinants of corporate social re sponsibility disclosure: An empirical study of Polish listed companies. Sustainability, 9(11), 1934. https://doi.org/10.3390/su9111934

El Khoury, R., Nasrallah, N., Alareeni, B., 2021. ESG and financial performance of banks in the MENAT region: concavity–convexity patterns. Journal of Sustainable Finance & Investment 1–25. https://doi.org/10.1080/20430795.2021.1929807

Eva Horváthová, (2010), Does environmental performance affect financial performance? A meta-analysis, Ecological Economics, 70, (1), 52-59. https://doi.org/10.1016/j.ecolecon.2010.04.004

Flammer, C. (2015). Does Corporate Social Responsibility Lead to Superior Financial Performance? A Regression Discontinuity Approach. Management Science, 61(11), 2549–2568. https://doi.org/10.1287/mnsc.2014.2038

Franceschelli, M.V., Santoro, G., Giacosa, E., Quaglia, R., 2019. Assessing the determi nants of performance in the recycling

business: evidence from the Italian context. Corporate Social Responsibility and Environmental Management 26 (5), 1086–1099. https://doi.org/10.1002/csr.1788

Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & De Colle, S. (2010). Stakeholder theory: The state of the art. New York: Cambridge University Press. https://doi.org/10.5465/19416520.2010.495581

Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. Journal of Sustainable Finance & Investment, 5(4), 210–233. https://doi.org/10.1080/20430795.2015.1118917

Galant, A., & Cadez, S. (2017). Corporate social responsibility and financial performance relationship: A review of measurement approaches. Economic Research–Ekonomska Istraˇzivanja, 30(1), 676–693. https://doi.org/10.1080/1331677X.2017.1313122

Galema, R., Plantinga, A., & Scholtens, B. (2008). The stocks at stake: Return and risk in socially responsible investment. Journal of Banking & Finance, 32(12), 2646–2654. https://doi.org/10.1016/j.jbankfin.2008.06.002

Ghosh, S. (2017). Reporting of CSR activities in India: Are we still at a nascent stage even after the legal mandate? In M. Nayan & S. René (Eds.), Corporate Social Responsibility in India: Cases and Development after the Legal Mandate (pp. 133–147). Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-319-41781-3_10

Giannopoulos, G., Kihle Fagernes, R. V., Elmarzouky, M., & Afzal Hossain, K. A. B. M. (2022). The ESG Disclosure and the Financial Performance of Norwegian Listed Firms. Journal of Risk and Financial Management, 15(6), 237. https://doi.org/10.3390/jrfm15060237

Hammami, A., & Zadeh, M. H. (2020). Audit quality, media coverage, envi ronmental, social, and governance disclosure and firm investment effi ciency: Evidence from Canada. International Journal of Accounting and Information Management, 28(1), 45–72. https://doi.org/10.1108/IJAIM-03-2019-0041

Harjoto, M. A. (2017). Corporate social responsibility and degrees of operating and financial leverage. Review of Quantitative Finance and Accounting, 49(2), 487–513. https://doi.org/10.1007/s11156-016-0598-5

Hernandez, J., Yanez-Araque, B., & Moreno-Garcia, J. (2020). Moderatingeffect of firm size on the influence of corporate social responsibility inthe economic performance of micro-, small- and medium-sized enter-prises. Technological Forecasting and Social Change, 151(9), 119774. https://doi.org/10.1016/j.techfore.2019.119774

Kao, E. H., Yeh, C.-C., Wang, L.-H., & Fung, H.-G. (2018). The relationship between CSR and performance: Evidence in China. Pacific-Basin Finance Journal, 51(C), 155-170. https://doi.org/10.1016/j.pacfin.2018.04.006

Karami, M., Samimi, A., & Ja'fari, M. (2020). Advanced Journal of Chemistry-Section B Natural Products and Medical Chemistry The Impact of Effective Risk Management on Corporate Financial Performance. https://doi.org/10.22034/ajcb.2020.109686

Khan, M. K., Naeem, K., & Xie, M. (2022). Does managerial ability transform organization from the inside out? Evidence from sustainability performance of financially constrained firms in an emerging economy. Borsa Istanbul Review, 22(5), 897–910. https://doi.org/10.1016/j.bir.2022.06.006

Kim, E.-H., & Lyon, T. P. (2015). Greenwash vs. brownwash: Exaggeration and undue modesty in corporate sustainability

ISSN 2076-9202

disclosure. Organization Science, 26(3), 705–723. https://doi.org/10.1287/orsc.2014.0949

Kusumawardani, A., Che Haat, M., Saputra, J., Yusliza, M., Muhammad, Z., & Talib Bon, A. (2021, March). A Review of Corporate Financial Performance Literature: A Mini-Review Approach. In 11th Annual International Conference on Industrial Engineering and Operations Management, https://doi.org/10.46254/AN11.20210713

Lee, M. T., Raschke, R. L., & Krishen, A. S. (2022). Signaling green! firm ESG signals in an interconnected environment that promote brand valuation. Journal of Business Research, 138, 1–11. https://doi.org/10.1016/j.jbusres.2021.08.061

Lee, S. P., & Isa, M. (2020). Environmental, social and governance (ESG) practices and performance in Shariah firms: Agency or stakeholder theory? Asian Academy of Management Journal of Accounting and Finance, 16(1), 1–34. https://doi.org/10.21315/aamjaf 2020.16.1.1

Li, J., Haider, Z.A., Jin, X., Yuan, W., 2019. Corporate controversy, social responsibility and market performance: international evidence. J. Int. Financial Markets, Institutions and Money 60, 1–18. https://doi.org/10.1016/j.intfin.2018.11.013

Lim, L. G., Tuli, K. R., & Grewal, R. (2020). Customer Satisfaction and Its Impact on the Future Costs of Selling. *Journal of Marketing, 84*(4), 23–44. https://doi.org/10.1177/0022242920923307

Lin, L. Y., Shi, W., Prescott, J. E., & Yang, H. (2019). In the Eye of the Beholder: Top Managers' Long-Term Orientation, Industry Context, and Decision-Making Processes. Journal of Management, 45(8), 3114-3145. https://doi.org/10.1177/0149206318777589

Liu, P., Zhu, B., Yang, M., & Chu, X. (2022). ESG and financial performance: A qualitative comparative analysis in China's new energy companies. Journal of Cleaner Production, 379, 134721. https://doi.org/10.1016/j.jclepro.2022.134721

Liu, Y., Saleem, S., Shabbir, R., Shabbir, M. S., Irshad, A., & Khan, S. (2021). The relationship between corporate social responsibility and financial per formance: A moderate role of fintech technology. Environmental Science and Pollution Research, 28(16), 20174–20187. https://doi.org/10.1007/s11356-020-11822-9

Maji, S.G. and Lohia, P. (2023), "Environmental, social and governance (ESG) performance and firm performance in India", Society and Business Review, Vol. 18 No. 1, pp. 175-194. https://doi.org/10.1108/SBR-06-2022-0162

Margolis JD, Elfenbein HA, Walsh JP (2009) Does it pay to be good and does it matter? A Meta-Analysis of the relationship between corporate social and f inancial performance. SSRN Electron J 1–68. http://dx.doi.org/10.2139/ssrn.1866371

Matten, D., & Moon, J. (2008). "Implicit" and "explicit" CSR: A conceptual framework for a comparative understanding of corporate social re sponsibility. Academy of Management Review, 33(2), 404–424. https://doi.org/10.5465/amr.2008.31193458

Naeem, N., Cankaya, S., & Bildik, R. (2022). Does ESG performance affect the financial performance of environmentally sensitive industries? A comparison between emerging and developed markets. Borsa Istanbul Review, 22, S128–S140. Borsa Istanbul Anonim Sirketi. https://doi.org/10.1016/j.bir.2022.11.014

Naseem, T., Shahzad, F., Asim, G. A., Rehman, I. U., & Nawaz, F. (2020). Corporate social responsibility engagement and firm performance in Asia Pacific: The role of enterprise risk management. Corporate Social Responsibility and Environmental Management, 27(2), 501–513. https://doi.org/10.1002/csr.1815

ISSN 2076-9202

Neitzert, F., & Petras, M. (2022). Corporate social responsibility and bank risk. Journal of Business Economics, 92, 397–428. https://doi.org/10.1007/s11573-021-01069-2

Nirino, N., Santoro, G., Miglietta, N., & Quaglia, R. (2021). Corporate contro versies and company's financial performance: Exploring the moderating role of ESG practices. Technological Forecasting and Social Change, 162, 120341. https://doi.org/10.1016/j.techfore.2020.120341

Nollet, J., Filis, G., & Mitrokostas, E. (2016). Corporate social responsibility and financial performance: A non-linear and disaggregated approach. Economic Modelling, 52, 400–407. https://doi.org/10.1016/j.econmod.2015.09.019

Nyame-Asiamah, F., & Ghulam, S. (2019). The relationship between CSR activity and sales growth in the UK retailing sector. Social Responsibility Journal, 16(3), 387–401. https://doi.org/10.1108/SRJ-09-2018-0245

Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate Social and Financial Performance: A Meta-Analysis. Organization Studies, 24(3), 403-441. https://doi.org/10.1177/0170840603024003910

Parikh, A., Kumari, D., Johann, M., & Mladenović, D. (2023). The impact of environmental, social and governance score on shareholder wealth: A new dimension in investment philosophy. Cleaner and Responsible Consumption, 8. https://doi.org/10.1016/j.clrc.2023.100101

Phan, T., Lai, L., Le, T., & Tran, D. (2020). The impact of audit quality on performance of enterprises listed on Hanoi Stock Exchange. Management Science Letters, 10(1), 217–224. https://doi.org/10.5267/j.msl.2019.8.001

PWC. 2022. "Vietnam ESG Readiness Report 2022 From ambition to impact." https://www.pwc.com/vn/en/publications/vietnam publications/esg-readiness-2022.html.

Qureshi, M. A., Akbar, M., Akbar, A., & Poulova, P. (2021). Do ESG Endeavors Assist Firms in Achieving Superior Financial Performance? A Case of 100 Best Corporate Citizens. Sage Open, 11(2). https://doi.org/10.1177/21582440211021598

Raimo, N., Caragnano, A., Zito, M., Vitolla, F., & Mariani, M. (2021). Extending the benefits of ESG disclosure: The effect on the cost of debt financing. Corporate Social Responsibility and Environmental Management, 28(4), 1412-1421. https://doi.org/10.1002/csr.2134

Revelli, C., & Viviani, J. (2015). Financial Performance of Socially Responsible Investing (SRI): What Have We Learned? A Meta-Analysis. Strategy & Social Policies eJournal. https://doi.org/10.1111/beer.12076

Ruan, L., & Liu, H. (2021). Environmental, Social, Governance Activities and Firm Performance: Evidence from China. Sustainability, 13(2), 767. https://doi.org/10.3390/su13020767

Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. Academy of management Journal, 40(3), 534-559. https://doi.org/10.5465/257052

Saygili, E., Arslan, S., & Birkan, A. O. (2022). ESG practices and corporate f inancial performance: Evidence from Borsa Istanbul. Borsa Istanbul Review, 22(3), 525–533. https://doi.org/10.1016/j.bir.2021.07.001

Schuler, D., & Cording, M. (2006). A Corporate Social Performance–Corporate Financial Performance Behavioral Model for

ISSN 2076-9202

Consumers. Academy of Management Review, 31, 540-558. https://doi.org/10.5465/amr.2006.21318916

Sen, S., & Bhattacharya, C. B. (2001). Does Doing Good Always Lead to Doing Better? Consumer Reactions to Corporate Social Responsibility. Journal of Marketing Research, 38(2), 225-243. https://doi.org/10.1509/jmkr.38.2.225.18838

Shahzad, F., Baig, M. H., Rehman, I. U., Saeed, A., & Asim, G. A. (2022). Does intellectual capital efficiency explain corporate social responsibility engagement-firm performance relationship? Evidence from environmental, social and governance performance of US listed firms. Borsa Istanbul Review, 22(2), 295–305. https://doi.org/10.1016/j.bir.2021.05.003

Shakil, M. H., Mahmood, N., Tasnia, M., & Munim, Z. H. (2019). Do environmental, social and governance performance affect the financial performance of banks? A cross-country study of emerging market banks. Management of Environmental Quality: An International Journal, 30(6), 1331–1344. https://doi.org/10.1108/MEQ-08-2018-0155

Shanaev, S., & Ghimire, B. (2022). When ESG meets AAA: The effect of ESG rating changes on stock returns. Finance Research Letters, 46. https://doi.org/10.1016/j.frl.2021.102302

Singh, S. K., Giudice, M. del, Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. Technological Forecasting and Social Change, 150. https://doi.org/10.1016/j.techfore.2019.119762

Sinha Ray, Rupamanjari, and Sandeep Goel. 2022. "Impact of ESG score on financial performance of Indian firms: static and dynamic panel regression analyses." Applied Economics:1-14. Sinha Ray, R., & Goel, S. (2023). Impact of ESG score on financial performance of Indian firms: static and dynamic panel regression analyses. Applied Economics, 55(15), 1742-1755. https://doi.org/10.1080/00036846.2022.2101611

Statman, M. (2006). Socially responsible indexes: Composition, performance, and tracking error. Journal of Portfolio Management,32(3), 100–109. https://doi.org/10.3905/jpm.2006.628411

Tarmuji, I., Maelah, R., & Tarmuji, N. H. (2016). The impact of environmental, social and governance practices (ESG) on economic performance: Evidence from ESG score. International Journal of Trade, Economics and Finance, 7(3), 67–74. https://doi.org/10.18178/ijtef.2016.7.3.501

Ting, I. W. K., Azizan, N. A., Bhaskaran, R. K., & Sukumaran, S. K. (2020). Corporate Social Performance and Firm Performance: Comparative Study among Developed and Emerging Market Firms. Sustainability, 12(1), 26. https://doi.org/10.3390/su12010026

Velte, P. (2017). Does ESG performance have an impact on financial performance? Evidence from Germany. Journal of Global Responsibility, 8(2), 169-178. https://doi.org/10.1108/JGR-11-2016-0029

Wang, T., & Bansal, P. (2012). Social responsibility in new ventures: Profiting from a long-term orientation. Strategic Management Journal, 33(10), 1135–1153. https://doi.org/10.1002/smj.1962

Wong, W. C., Batten, J. A., Ahmad, A. H., Mohamed-Arshad, S. B., Nordin, S., & Adzis, A. A. (2021). Does ESG certification add firm value? Finance Research Letters, 39. https://doi.org/10.1016/j.frl.2020.101593

Wright, P., & Ferris, S. P. (1997). Agency Conflict and Corporate Strategy: The Effect of Divestment on Corporate Value. Strategic Management Journal, 18, 77-83. https://doi.org/10.1002/(SICI)1097-0266(199701)18:1<77::AID-SMJ810>3.0.CO;2-R

ISSN 2076-9202

Yoo, S., Managi, S., 2022. Disclosure or action: evaluating ESG behavior towards f inancial performance. Finance Research Letters. 44, 102108. https://doi.org/10.1016/j.frl.2021.102108

Zahid, R. M. A., & Simga-Mugan, C. (2022). The impact of International Financial Reporting Standards adoption on the integration of capital markets. International Journal of Finance & Economics,1–22. https://doi.org/10.1002/ijfe.2684

Zahid, R. M. A., Khan, M. K., Anwar, W., & Maqsood, U. S. (2022). The role of audit quality in the ESG-corporate financial performance nexus: Empirical evidence from Western European companies. Borsa Istanbul Review, 22, S200–S212. https://doi.org/10.1016/j.bir.2022.08.011

Zahid, R. M. A., Khurshid, M., & Khan, W. (2022a). Do chief executives matter in corporate financial and social responsibility performance nexus? A dynamic model analysis of Chinese firms. Frontiers in Psychology, 13, 897444. https://doi.org/10.3389/fpsyg.2022.897444

Zahid, R. M. A., Taran, A., Khan, M. K., & Chersan, I. C. (2023). ESG, dividend payout policy and the moderating role of audit quality: Empirical evidence from Western Europe. Borsa Istanbul Review, 23(2), 350–367. https://doi.org/10.1016/j.bir.2022.10.012

Zhu, Y., Sun, L.-Y., & Leung, A. S. (2014). Corporate social responsibility, firm reputation, and firm performance: The role of ethical leadership. Asia Pacific Journal of Management, 31(4), 925–947. https://doi.org/10.1007/s10490-013-9369-1

ISSN 2076-9202

LEADERSHIP SKILLS: INDISPENSABLE IN LEADING TO UP-GRADATION OF THE ORGANIZATION STRUCTURE

Dr. Radhika Kapur
Design thinker and Visiting Faculty at Delhi University, India

Abstract

Women, belonging to all communities, categories and backgrounds have the main aim of acquiring empowerment opportunities. They are generating information in terms of the strategies and methods, which would enable them to lead to up-gradation of their overall living conditions. In educational institutions of all levels and in various types of organizations, women are acquiring leadership positions. The leaders are vested with number of job duties. They have the authority and responsibility of leading to overall functioning of the organizations in an adequate manner. In other words, they need to hone their skills and abilities to lead to up-gradation of the organization structure. The leaders need to be well-versed in terms of measures and approaches that would enable them to do well in their jobs and achieve desired goals. The leaders and the other members of the organization, irrespective of their job positions in the hierarchy need to work in collaboration and integration with each other. The laws and policies should be formulated by the leaders in such a manner that would be focused towards promoting well-being and goodwill. Therefore, leadership skills are regarded as indispensable in leading to up-gradation of the organization structure. The main concepts that are taken into account in this research paper are, understanding the meaning and significance of leadership skills, factors in terms of which leadership skills need to be up-graded and factors highlighting how leadership skills contribute in promoting women empowerment.

Keywords: Communities, Empowerment Opportunities, Goals, Leadership Skills, Living Conditions, Organizations, Working Environment

In the present existence, women, belonging to all communities and backgrounds are acquiring empowerment opportunities. They are putting into operation the strategies and methods, which would enable them to lead to up-gradation of their overall living conditions. In educational institutions of all levels and in various types of organizations, women are acquiring leadership positions. These are principals, directors, instructors, supervisors, employers and so forth. The leaders are vested with the authority and responsibility of leading to overall functioning of the organizations in an adequate manner. It is comprehensively understood that within the course of implementation of job duties and achievement of goals, there are occurrence of various types of problems (Leadership Skills, 2021). Hence, leaders need to be experienced and informative. Furthermore, they need to possess an approachable nature and an amiable attitude. The subordinates usually approach their leaders, when they are overwhelmed by various types of problems. These are usually professional in nature. But in some cases, they may discuss personal problems as well.

ISSN 2076-9202

Therefore, leadership skills need to be honed in terms of providing solutions to various types of problems.

The leaders are vested with the authority and responsibility of leading to up-gradation of the overall structure of the organizations. For this purpose, there are various factors that need to be taken into account, i.e. conducting research on regular basis in terms of methods, procedures, job duties and various aspects of the organizations; inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; making wise and productive decisions; implementing time management skills; augmenting analytical, critical thinking and problem-solving skills; managing resources in an adequate manner; making available infrastructure, amenities and facilities; implementing grievance redresser procedures; implementing peaceful conflict resolution methods; promoting teamwork; organizing training and development programs; forming cordial and amiable terms and relationships with others and putting in measures to create a pleasant and amiable working environment. When the individuals in leadership positions are implementing all these factors, they will contribute significantly in promoting well-being of members and leading to enhancement of the overall structure of the organizations. Therefore, leaders need to be dedicated towards leading to up-gradation of the overall structure of the organizations throughout their jobs.

With advancements taking place and with the advent of technologies, the leaders need to make use of modern, scientific and innovative methods. The utilization of these methods will facilitate in the implementation of job duties in a less time consuming and efficient manner. Getting engaged in regular practice will enable the individuals to be well-versed in terms of them (Leadership Skills, 2021). In some cases, the individuals are aware, whereas, in other cases, they are not aware. The various types of modern, scientific and innovative methods are, maps, charts, graphs, models, images, pictures, designs, structures, various types of technologies and so forth. In educational institutions of all levels, the instructors are imparting information in terms of these methods. Whereas, in various types of organizations, there are training and development programs. The employees get enrolled in these programs at the time of recruitment as well as within the course of implementation of job duties. These programs impart information in terms of various aspects of the organizations. Therefore, leadership skills need to focus on putting into operation modern, scientific and innovative methods.

The job duties in some cases are manageable, whereas, in other cases, they are complicated. But development of motivation will enable the individuals to do well and generate the desired outcomes. The individuals in leadership positions are required to develop motivation among members towards implementation of job duties and achievement of goals. In educational institutions of all levels, the instructors are developing motivation among students by giving good grades, remarks of appreciation, certificates, trophies, medals, prizes and monetary rewards. On the other hand, in various types of organizations, the supervisors or employers give rewards such as, increase in pay, paid vacations, promotional opportunities, remarks of appreciation, certificates, trophies, and medals. When these are given the students as well as the employees develop motivation. Furthermore, they are able to provide solutions to various problems. When motivation is developed, the mind-sets of the individuals will be stimulated towards the implementation of job duties. Therefore, factors to develop motivation among students and employees need to be focused upon throughout the job duties of leaders.

ISSN 2076-9202

Understanding the Meaning and Significance of Leadership Skills

In educational institutions of all levels and in various types of organizations, there are number of individuals in leadership positions. They are required to carry out number of job duties in promoting well-being of the members and in leading to up-gradation of the overall structure of the organizations. The leaders need to develop motivation among members and stimulate their mind-sets. When there are occurrence of various types of problems, they need to be solved. Furthermore, they need to be prevented from giving rise to barriers within the course of implementation of job duties and achievement of goals. The leaders need to be well-versed in terms of implementation of managerial functions. The various types of managerial functions are, planning, organizing, directing, staffing, controlling, co-ordinating and leading. Leaders need to be experienced and informative. Furthermore, they need to possess adequate information in terms of job duties. Therefore, the meaning and significance of leadership skills is understood, when the leaders make use of them to carry out their job duties in a well-organized manner.

It is broadly understood that within the course of implementation of job duties and achievement of goals, there are occurrence of various types of problems. In some cases the problems may take place in a major form, whereas, in other cases, they may take place in a minor form. In some cases, their influence may be more, whereas, in other cases, the influence may be less. One of the important aspects is, they need to be prevented from giving rise to impediments within the course of implementation of job duties. Hence, leaders need to be experienced and informative. Furthermore, they need to possess an approachable nature and an amiable attitude. When students or are the employees are overwhelmed by various problems, they approach their leaders. The leaders need to conduct an analysis of the problems and make provision of effective solutions to them. The leaders need to make provision of counselling and guidance services to the members. Therefore, the meaning and significance of leadership skills is understood, when the leaders implement counselling and guidance services and provide solutions to various types of problems in an adequate manner.

The individuals in leadership positions are implementing approaches and methods, which would enable them to lead to up-gradation of the overall structure of the organizations. In educational institutions of all levels and in various types of organizations, women are acquiring leadership positions. Factors in terms of which leadership skills need to be up-graded are, formulating laws and policies, providing solutions to various types of problems, implementing modern, scientific and innovative methods, development of motivation among subordinates, making wise and productive decisions, implementing time management skills, augmenting analytical, critical thinking and problem-solving skills, promoting teamwork, managing resources in a satisfactory manner, organizing training and development programs, formulating measures to create a pleasant and amiable working environment and leading to up-gradation of the overall structure of the organizations. Therefore, the meaning and significance of leadership skills is understood, when the leaders render a significant contribution in putting into operation measures and approaches, which would prove to be favourable in promoting well-being and goodwill.

Factors in terms of which Leadership Skills need to be Up-graded

In educational institutions of all levels and in various types of organizations, there are number of individuals in leadership positions. They are primarily focused upon guiding and leading the other members in the right direction. When leaders are imparting them information in terms of various aspects, they need to

ISSN 2076-9202

ensure, they depict honesty, righteousness and truthfulness (The Core Leadership Skills you need in Every Role, 2021). When there are occurrence of limitations, the members need to work in co-ordination and integration with each other. The research studies have indicated that in some cases, job duties are carried out on an individual basis, whereas, in other cases, teamwork is promoted. Leaders usually take pleasure in implementation of job duties, when the students or employees are to work in a team. Through communicating with each other in an effective manner, individuals, irrespective of their job positions in the hierarchy are able to generate information in terms of methods and approaches. Furthermore, individuals in leadership positions put emphasis on honing of their skills. Factors in terms of which leadership skills need to be up-graded are stated as follows:

Providing Solutions to various types of Problems

It is comprehensively understood that within the course of implementation of job duties and achievement of goals, there are occurrence of various types of problems. In some cases the problems may take place in a major form, whereas, in other cases, they may take place in a minor form. The important aspect is, they need to be prevented from giving rise to impediments within the course of implementation of job duties. Hence, leaders need to be experienced and informative. Furthermore, they need to possess an approachable nature and an amiable attitude. The subordinates usually approach their leaders, when they are overwhelmed by various types of problems or in case of other concerns. These are usually professional in nature. But in some cases, when they form sociable terms and relationships, they may discuss personal problems as well. Hence, leadership skills need to be honed in terms of providing solutions when there are occurrence of various types of problems. Therefore, providing solutions to various types of problems is a factor in terms of which leadership skills need to be up-graded. This factor needs to be reinforced through the job duties of leaders.

Implementing Modern, Scientific and Innovative Methods

In all types of organizations, the leaders need to make use of modern, scientific and innovative methods. The utilization of these methods will facilitate in the implementation of job duties in a less time consuming and efficient manner. Getting engaged in regular practice will enable the individuals to be well-versed in terms of them. In some cases, the individuals are aware, whereas, in other cases, they are not informative. The various types of modern, scientific and innovative methods are, maps, charts, graphs, models, images, pictures, designs, structures, various types of technologies and so forth. In educational institutions of all levels, the instructors are imparting information in terms of these methods. Whereas, in various types of organizations, there are training and development programs. The employees get enrolled in these programs at the time of recruitment as well as within the course of implementation of job duties. These programs impart information in terms of various aspects of the organizations. Therefore, implementing modern, scientific and innovative methods is a factor in terms of which leadership skills need to be up-graded. This factor has proven to be beneficial to a major extent to all the members of the organizations.

Development of Motivation

The job duties in some cases are manageable, whereas, in other cases, they are complicated. But development of motivation will enable the individuals to do well in their jobs and generate the desired outcomes. The individuals in leadership positions are required to develop motivation among members

ISSN 2076-9202

towards implementation of job duties and achievement of goals. In educational institutions of all levels, the instructors are developing motivation among students by giving good grades, remarks of appreciation, certificates, trophies, medals, prizes and monetary rewards. On the other hand, in various types of organizations, the supervisors or employers give rewards such as, increase in pay, paid vacations, promotional opportunities, remarks of appreciation, certificates, trophies, and medals. When these are given the students as well as the employees develop motivation. Furthermore, they are able to provide solutions to various problems. When motivation is developed, the mind-sets of the individuals will be stimulated towards the implementation of job duties. Therefore, development of motivation is a factor in terms of which leadership skills need to be up-graded. This factor leads to an increase in retention rate and causes a decline in the drop-out rate.

Making Wise and Productive Decisions

Decision making is an integral part of the lives of the individuals. Within various types of organizations, the leaders are vested with the authority and responsibility of making wise and productive decisions. The decisions are made in terms of various aspects of the organizations, i.e. goals and objectives, job duties, resources, infrastructure, amenities, facilities, training and development programs and overall environmental conditions. When decisions are made, it needs to be ensured, they prove to be efficacious and meaningful to the members as well as the overall structure of the organizations. In the implementation of the decision making processes, one needs to conduct the analysis of the alternatives. After the analysis is conducted, one makes selection of the alternative, which is regarded as most suitable and meaningful. In some cases, discussion meetings are called and other members are provided with the opportunities to express their ideas and viewpoints. Therefore, making wise and productive decisions is a factor in terms of which leadership skills need to be up-graded. This factor plays an important role in doing well in one's job duties and achievement of desired goals and objectives.

Implementing Time Management Skills

In various types of organizations, the individuals in leadership positions are vested with number of job duties. They need to implement time management skills. These skills will enable the leaders to take out sufficient amount of time for all tasks and activities. They assign priorities to the tasks and avoid procrastination. The tasks, which are regarded as important are carried out first. In some cases, the job duties are time consuming. Hence, the individuals need to make sure, they do well in them and achieve the desired goals. The leaders are required to work for long hours. They are required to form cordial and pleasant terms and relationships with other members. The leaders are required to guide their subordinates as well in the implementation of these skills. These have the major advantage of enabling all the members to take out sufficient amount of time for all tasks and functions. As a consequence, they will incur the feelings of pleasure and contentment. Therefore, implementing time management skills is a factor in terms of which leadership skills need to be up-graded. This factor contributes in incurring the feeling of job satisfaction.

Promoting Teamwork

In some cases, job duties are carried out on an individual basis, whereas, in other cases, there are certain job duties, which need to be carried out in a team. Hence, teamwork is promoted. Leaders usually take pleasure in implementation of job duties, when the students or employees are to work in a team. The

ISSN 2076-9202

teamwork is the concept, when individuals are working on any tasks and assignments in a team. A team can be of two or more individuals. When a team comprises of four or more members, there is a team leader. He or she is vested with the authority and responsibility of supervising the job duties. The teamwork proves to be beneficial to the members as well as the organizations as a whole (Leadership Skills, 2021). The team members divide the job duties among themselves. Furthermore, they come to know each other's cultures and backgrounds. The members do not feel work pressure and are able to carry out their job duties in a well-organized manner. Therefore, promoting teamwork is a vital factor in terms of which leadership skills need to be up-graded.

Managing Resources in a Satisfactory Manner

In leading to overall functioning of the organizations in an adequate manner, it is of utmost significance to manage resources in a satisfactory manner. These need to be utilized only in the required areas. In other words, wastage of all types of resources should be prevented. The various types of resources that need to be managed are, human, financial, technical and material resources (25 Leadership Skills you need to Learn Fast, 2021). Human resources are the personal. They need to make use of their educational qualifications, competencies, skills and abilities to carry out their job duties in a well-organized manner. Financial resources are the monetary resources. These need to be planned and made use of in a satisfactory manner. Technical resources are the various types of technologies used. Material resources are the tools, machines, devices, and equipment. The individuals need to be well-equipped in terms of measures to manage these resources in a satisfactory manner. The leaders and other members work in collaboration with each other in managing resources. Therefore, managing resources in a satisfactory manner is a crucial factor in terms of which leadership skills need to be up-graded.

Organizing Training and Development Programs

The organization of training and development programs is the job duty of the individuals in leadership positions. When employees get recruited in organizations, they are required to go through training and development programs. Through these programs, the employees are generating information in terms of various aspects of the organizations. These are, history, personnel, departments, goals and objectives, job duties, resources, infrastructure, amenities, facilities, and overall environmental conditions. Within the course of implementation of job duties as well, the employees get enrolled in these programs to acquire information in terms of modern, scientific and innovative methods. The trainers make use of various types of training methods in these programs, i.e. lectures, case studies, field-work, role plays, vestibule training and so forth. The goals and objectives and job duties are the main aspects that needs to be taken into consideration in initiating these programs. The leaders also impart information among subordinates, which would prove to be beneficial to them. Therefore, organizing training and development programs is a significant factor in terms of which leadership skills need to be up-graded.

Formulating Measures to create a Pleasant and Amiable Working Environment

In the creation of a pleasant and amiable working environment, there are various factors that need to be taken into account, i.e. communicating with each other in an effective manner; depicting the traits of helpfulness and co-operation; possessing an approachable nature and an amiable attitude; being well-equipped in terms of job duties and responsibilities; forming positive viewpoints in terms of various

ISSN 2076-9202

factors and individuals; working in collaboration and integration with others; formulating laws and policies; inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; providing solutions to various problems in an effective manner; implementing peaceful conflict resolution methods; promoting teamwork; forming cordial and amiable terms and relationships with others and developing motivation towards the implementation of job duties and achievement of goals. When the individuals in leadership positions are implementing all these factors, they will contribute in an effective manner in the formation of suitable working environmental conditions. Furthermore, these factors need to be acknowledged by other members of the organizations as well. Therefore, formulating measures to create a pleasant and amiable working environment is an essential factor in terms of which leadership skills need to be up-graded.

Leading to Up-gradation of the overall Structure of the Organizations

The leaders are vested with the authority and responsibility of leading to up-gradation of the overall structure of the organizations. For this purpose, there are various factors that need to be taken into account, i.e. conducting research on regular basis in terms of methods, procedures, job duties and various aspects of the organizations; inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; making wise and productive decisions; implementing time management skills; augmenting analytical, critical thinking and problem-solving skills; managing resources in an adequate manner; making available infrastructure, amenities and facilities; implementing grievance redresser procedures; implementing peaceful conflict resolution methods; promoting teamwork; organizing training and development programs; forming cordial and amiable terms and relationships with others and putting in measures to create a pleasant and amiable working environment. When the individuals in leadership positions are implementing all these factors, they will contribute significantly in promoting well-being of members and leading to enhancement of the overall structure of the organizations. Therefore, leading to up-gradation of the overall structure of the organizations is a significant factor in terms of which leadership skills need to be up-graded.

Factors highlighting how Leadership Skills contribute in Promoting Women Empowerment

In order to acquire empowerment opportunities, the women need to focus on various factors. These are, acquisition of good-quality education, augmenting skills and abilities, generating information in terms of methods and procedures, coping with problems and challenges in an effective manner and forming cordial terms and relationships with others. Furthermore, women need to pay attention towards up-gradation of leadership skills. When they are in leadership positions in various types of organizations or households, they not only carry out the managerial functions or job duties of supervising and guiding others, but they are also rendering an important contribution in the acquisition of empowerment opportunities. As a consequence, they will lead to up-gradation of personality traits and overall standards of living. In the present existence, women, belonging to all communities are supported by family and community members to acquire empowerment opportunities. Factors highlighting how leadership skills contribute in promoting women empowerment are, guiding and leading others in the right direction; formulating laws and rules; enhancing one's overall personality traits and promoting community well-being. These are stated as follows:

Guiding and Leading others in the Right Direction

ISSN 2076-9202

The leaders are required to guide and lead other members within the organization as well as homes in the right direction. When the individuals are overwhelmed by various problems, the leaders are vested with the authority and responsibility of leading and directing others. Leaders need to be experienced and informative. Furthermore, they need to possess an approachable nature and an amiable attitude. The subordinates usually approach their leaders, when they are overwhelmed by various types of problems. It is of utmost significance for the leaders to enhance professionalism among themselves as well as the other members. The up-gradation of leadership skills will enable them to do well in their jobs and achieve desired goals. Therefore, guiding and leading others in the right direction is a vital factor highlighting how leadership skills contribute in promoting women empowerment.

Formulating Laws and Rules

In educational institutions of all levels, in various types of organizations and within homes as well, the women in leadership positions formulate laws and rules. The primary aim is to enhance professionalism among individuals and lead to overall functioning of the organizations in an efficient manner. The job duties are performed in accordance to the laws and rules. Furthermore, when job duties are carried out in accordance to them, the individuals are able to do well in their jobs and generate the desired outcomes. The overall functioning of the educational institutions and organizations takes place in a satisfactory manner. Within homes, when these are formulated and followed, the individuals become more disciplined. Therefore, formulating laws and rules is a significant factor highlighting how leadership skills contribute in promoting women empowerment.

Enhancing one's overall Personality Traits

The women lead to enhancement of one's overall personality traits through acquisition of empowerment opportunities. The various aspects that are taken into account in enhancement of personality traits are, possessing an approachable nature and an amiable attitude; being well-versed in terms of job duties and responsibilities; promoting good health; managing body weight; inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; making wise decisions; augmenting analytical, critical thinking and problem-solving skills; depicting the traits of helpfulness and co-operation and augmenting communication skills. When the women will be well-versed in terms of these aspects, they will lead to up-gradation of their overall personality traits. Furthermore, they are able to acquire empowerment opportunities as well. Therefore, enhancing one's overall personality traits is a crucial factor highlighting how leadership skills contribute in promoting women empowerment.

Promoting Community Well-being

When women will acquire empowerment opportunities, they will be able to contribute in an efficacious manner in promoting community well-being. They will acquire opportunities to put into operation the job duties in a well-organized manner. When they are putting into practice various tasks and activities to promote community well-being, they are not only incurring the feelings of pleasure and contentment among themselves, but also the community members. Empowerment opportunities will enable women to implement job duties, which will lead to alleviation of the societal problems of poverty, illiteracy, unemployment, homelessness and crime and violence. The individuals, belonging to all communities and age groups experience these problems and aim to provide solutions to them. Furthermore, they need to be prevented

ISSN 2076-9202

from giving rise to impediments within the course of achievement of goals and objectives. Therefore, promoting community well-being is an important factor highlighting how leadership skills contribute in promoting women empowerment.

Conclusion

In the present existence, women, belonging to all communities and backgrounds are acquiring empowerment opportunities. They are implementing approaches and methods, which would enable them to lead to up-gradation of the overall structure of the organizations. In educational institutions of all levels and in various types of organizations, women are acquiring leadership positions. Factors in terms of which leadership skills need to be up-graded are, providing solutions to various types of problems, implementing modern, scientific and innovative methods, development of motivation, making wise and productive decisions, implementing time management skills, promoting teamwork, managing resources in a satisfactory manner, organizing training and development programs, formulating measures to create a pleasant and amiable working environment and leading to up-gradation of the overall structure of the organizations. Factors highlighting how leadership skills contribute in promoting women empowerment are, guiding and leading others in the right direction; formulating laws and rules; enhancing one's overall personality traits and promoting community well-being. Finally, it can be stated, up-gradation of leadership in all types of organizations will facilitate implementation of job duties in a satisfactory manner and achievement of desired goals.

Bibliography

Leadership Skills. (2021). Retrieved September 17, 2021 from skillsyouneed.com

Leadership Skills. Become an Exceptional Leader. (2021). Retrieved September 17, 2021 from mindtools.com

Leadership Skills: Definitions and Examples. (2021). Indeed Career Guide. Retrieved September 17, 2021 from in.indeed.com

25 Leadership Skills you need to Learn Fast. (2021). Leadership & General Management. Retrieved September 17, 2021 from imd.org

The Core Leadership Skills you need in Every Role. (2021). Centre for Creative Leadership. Retrieved September 17, 2021 from ccl.org

ISSN 2076-9202

STAKEHOLDERS AND ESG DISCLOSURE

Nguyen Thi Le Ha[1,3], Tran Ngoc Hoang Khanh[2,3]

[1,2] School of Economics, Finance and Accounting, International University, Ho Chi Minh City, Vietnam

[3]Vietnam National University, Ho Chi Minh City, Vietnam

Abstract:
The present study attempts to develop a research framework for discovering the influence of stakeholder factors on the Environmental, Social, and Governance (ESG) disclosure practices of firms listed on the Hong Kong Stock Exchange (HKEX). With an evolving ESG landscape in Asia, particularly under the stringent frameworks established by HKEX, the research aims to particularly explore the impact of specific stakeholder groups including investors, regulatory bodies, and customers on the ESG disclosures of these listed firms. Quantitative approach is employed to investigate how these stakeholder pressures affect the quality and scope of ESG reporting. The findings are expected to offer insights into the dynamics driving corporate ESG strategies in Hong Kong's financial hub, contributing to the broader goals of sustainable development and corporate accountability.

Key words: Board Diversity, Corporate Governance, Customer Pressure, ESG Disclosure, Hong Kong Stock Exchange, Shareholder Pressure.

Introduction

Environmental, Social, and Governance (ESG) criteria have become fundamental in shaping the operational and reporting strategies of companies worldwide. The integration of ESG factors into business strategies and reporting is being driven by a combination of regulatory pressure, investor preferences, and social expectations, signaling more sustainable economic practices. It has become an important topic globally as stakeholders pressure companies to provide greater transparency on sustainability issues (Nguyen et al., 2019). There is growing evidence that stakeholder engagement and activism influence the level and quality of corporate ESG disclosure (Amran et al., 2020).

Particularly in Asia, the ESG landscape is rapidly evolving with markets such as China, Japan, and Singapore leading the way in implementing ESG reporting standards and sustainability initiatives. For instance, Japan has incorporated ESG criteria into its corporate governance code to encourage companies to address sustainability issues (Tokyo Stock Exchange, 2021). However, despite these advancements, there is considerable variation in how ESG practices are adopted and reported across different markets and sectors within the region, pointing to a diverse set of challenges and opportunities (ASEAN, 2022).

Hong Kong, a significant financial hub, has seen higher regulatory focus and market-driven demand for enhanced ESG disclosures. The Hong Kong Exchanges and Clearing Limited (HKEX) has enhanced its ESG reporting framework, mandating more comprehensive disclosures that align with international best practices (HKEX, 2021). This regulatory push is complemented by growing investor demand for detailed and reliable ESG information, which is increasingly considered critical for investment decisions (PwC,

ISSN 2076-9202

2022). Despite these efforts, the variability in the quality and extent of ESG disclosures among listed companies suggests that external stakeholder pressures and expectations might play a crucial role in shaping corporate ESG practices.

Despite the growing emphasis on ESG practices, there is a notable variability in the depth and breadth of ESG disclosures among firms listed on the Hong Kong Stock Exchange. Research indicates that this variability could be significantly influenced by stakeholder engagement and expectations (PwC, 2022). However, the specific impacts of different stakeholder groups—ranging from investors to regulatory bodies—on ESG disclosure practices remain under - explored. This gap in understanding can hinder the effectiveness of ESG initiatives and the strategic alignment of disclosures with stakeholder expectations, potentially impacting firms' market valuation and stakeholder trust.

The current research aims to dig into the multifaceted influence of stakeholder factors on ESG disclosure practices among firms listed in Hong Kong. By identifying key stakeholder groups and analyzing their impact on the scope, quality, and effectiveness of ESG reporting, the study seeks to uncover the dynamics at play in the regional market's approach to corporate sustainability. This investigation is expected to yield critical insights into the ways stakeholder pressures shape corporate ESG strategies, potentially guiding future policy enhancements and helping corporate leaders refine their sustainability initiatives. Ultimately, the research will contribute to a deeper understanding of how enhanced stakeholder engagement can lead to more meaningful and effective ESG disclosures, thus supporting the broader goals of corporate accountability and sustainable development in Hong Kong's vibrant economic landscape.

Literature Review

Related Theories

Stakeholder Theory

Stakeholder theory has become a prominent framework for understanding the relationship between business and society (Parmar et al., 2010). Originally conceptualized by Freeman in 1984, stakeholder theory asserts that a firm has certain responsibilities towards groups and individuals that can influence or are impacted by its operations. These stakeholders include but are not limited to shareholders, employees, customers, suppliers, communities, NGOs, and governmental bodies (Freeman, 1984).

In the context of ESG disclosures, stakeholder theory suggests that firms are motivated to report on ESG matters not only due to regulatory requirements but also to meet the expectations and demands of multiple stakeholders including investors, customers, employees, and the wider community. This theory helps in understanding the varying influences stakeholders have on the strategic decisions of a firm, especially in terms of transparency and accountability in ESG practices (Mitchell, Agle, & Wood, 1997).

A core tenet of stakeholder theory is that long-term firm performance and viability depends on effectively managing stakeholder relationships by adequately addressing their needs and priorities (Amran et al., 2020). Stakeholders can employ various mechanisms to pressure companies, such as regulatory control, economic leverage through investment or purchase decisions, protests and media campaigns, lawsuits, and voting power within governance structures (Nguyen & Tran, 2021). Firms that fail to satisfy key stakeholders risk losing their social legitimacy and license to operate (Pham et al., 2020). However, those that align business practices with stakeholder demands can build reputation, trust, and competitive advantage.

ISSN 2076-9202

Signaling Ttheory

Signaling theory offers another relevant perspective for examining corporate ESG disclosure. The theory proposes that in contexts of information asymmetry, firms can signal unobservable positive qualities to stakeholders through visible actions (Connelly et al., 2011). Within voluntary non-financial reporting, increased transparency around sustainability issues may allow companies to signal environmental or social responsibility, enhancing corporate image and legitimacy (Amran et al., 2020).

Researchers suggest sustainability disclosure serves as a signal to indicate unobservable qualities like ethical leadership, good governance, or effective risk management (Duong et al., 2017). Stakeholders receive and interpret these signals when making decisions to potentially reward responsible firms through continued investment, purchase loyalty, career commitment, or community approval (Nguyen & Tran, 2021). Over time, responsiveness to stakeholder interests and expectations institutionalizes ESG reporting norms (Pham et al., 2020).

Signaling theory aligns closely with stakeholder perspective in explaining corporate disclosure behaviors (Vu et al., 2018). Firms signal to elicit positive stakeholder reactions which further institutionalize organizational practices. Literature documents signaling effects related to specific ESG disclosure elements like carbon emissions figures, supply chain codes of conduct, and independent assurance statements indicating reporting credibility (Parmar et al., 2010). Further research can clarify signaling mechanisms at play for Vietnamese companies amid pressures to improve sustainability transparency.

Institutional Theory

Instituitional theory offers another useful lens for analyzing corporate sustainability disclosure. The theory examines how organizational behaviors are influenced by the cultural, regulatory, and social environments in which firms are embedded (Scott, 1987). Companies gain legitimacy and ensure survival by conforming to the rules, norms, and expectations prevailing in their institutional contexts (Amran et al., 2020).

The regulatory requirements set forth by HKEX, including the updated ESG disclosure guidelines, create institutional pressures that companies must adhere to. These guidelines encourage firms to adopt similar ESG practices to conform to the expected norms and gain legitimacy in the eyes of stakeholders and regulators. This form of isomorphism is evident in how companies in Hong Kong increasingly integrate global sustainability standards into their operations to meet both local and international expectations, thereby securing their legitimacy and operational license (DiMaggio & Powell, 1983; Scott, 2008).

Hypothese Development

Board Diversity and ESG

In recent years, board gender diversity has become a critical component of corporate governance structure around the world (Terjesen et al., 2009). WOCB fits well into the framework of stakeholder theory. Although boards have to manage the interests of the various stakeholders through firms' CSR via corporate disclosure (Harjoto et al., 2015; Jain and Jamali, 2016), some directors may lack expertise in the CSR issue (Paine, 2014). However, according to Boulouta (2013) and Harjoto et al. (2015), boards with female directors are more likely to invest in ESG. The stakeholder theory posits several reasons for such a possibility. As such, women are more concerned with the welfare of others. In practical terms, these communal characteristics appear to lead female directors to better Board gender diversity and ESG

ISSN 2076-9202

disclosure address stakeholders' interests, unlike their male director counterparts, who tend to be more concerned with shareholders and economic concerns (Adams et al., 2011). Due to female directors' psychological characteristics, backgrounds and experience, they are more likely to be involved in strategic issues that affect the firm's ESG and its stakeholders. According to Nielsen and Huse (2010), "women may be particularly sensitive to – and may exercise influence on-decisions pertaining to certain organizational practices, such as corporate social responsibility and environmental politics"

H1: There is a positive relationship between board diversity and the ESG score.

Customer Pressure and ESG

Customers are increasingly considering corporate sustainability as a crucial factor in their purchasing decisions. This shift in consumer behavior exerts pressure on companies to not only engage in environmentally and socially responsible activities but also to disclose these practices transparently in their ESG reports. According to stakeholder theory, customers are key stakeholders whose interests companies must prioritize to maintain their competitive edge and market share. As customers demand more information on corporate sustainability practices, firms are likely to respond by enhancing their ESG disclosures to meet these expectations and build customer trust and loyalty (Sen & Bhattacharya, 2001). From the perspective of signaling theory, robust ESG disclosures serve as a signal to customers that a company is committed to ethical practices and sustainability. This can differentiate a company in the marketplace, attracting and retaining customers who prioritize environmental and social values (Servaes & Tamayo, 2013). Research has demonstrated that customer awareness and activism are significant drivers of corporate sustainability efforts. Companies in consumer-facing industries, in particular, are found to be more responsive to customer concerns regarding environmental and social issues, often resulting in better ESG performance and disclosure (Bhattacharya & Sen, 2004; Ioannou & Serafeim, 2012).

H2: Increased customer pressure positively influences the ESG disclosure score of firms

Shareholder Pressure and ESG

Shareholder pressure plays a significant role in motivating firms to enhance their ESG disclosures. This relationship is grounded in the principle that shareholders, as principal stakeholders, can exert considerable influence on corporate governance and strategic decisions, including ESG practices. Research supports the notion that when shareholders actively engage with management on ESG issues, it leads to greater transparency and improved ESG performance. Investors are beginning to see the potential of sustainability as a tool for creating a more equal and just society as well as a safer and more prosperous one. As a consequence, shareholders are utilizing their voting power and other forms of influence to pressure businesses to improve their ESG effectiveness (Cadez et al., 2019, Lee et al., 2018). Shareholders are increasingly concerned with the ESG performance and impacts of their investee companies across all sectors. Previous studies (Holderness and Sheehan, 1988; Margaritis and Psillaki, 2010; Crisostomo et al., 2013) have proved that shareholders in firms with a high level of ownership concentration can put higher pressure by constantly keeping a watch on corporate sustainability. Empirical studies have found that shareholder activism is associated with improved ESG reporting and performance. For example, when shareholders file resolutions related to environmental and social issues, it often leads to better disclosure practices as firms respond to these pressures by providing more comprehensive information on their ESG activities (Cadez et

ISSN 2076-9202

al., 2019; Lee et al., 2018)

H3: Increased shareholder pressure is associated with higher ESG scores

Research Methodology

Research Design

Quantitative research will be utilized to objectively measure how various stakeholder pressures influence ESG disclosure scores. The design will be cross-sectional, analyzing data at a single point in time across multiple firms. A quantitative approach allows for precise measurement of relationships between variables through statistical analysis. This approach is suitable for testing specific hypotheses derived from theories such as stakeholder theory, signaling theory, and institutional theory. Stata software will be employed to process the collected data and examine the research model.

Research Model:

To explore the effect of stakeholders on corporate ESG disclosure, the regression model from (Jiang et al., 2020; Zhang and Li, 2022) was adopted.

$$ESGD_{i,t} = a_0 + a_1 \times WOCB_{i,t} + a_2 \times CUS_{i,t} + a_3 \times SHARE_{i,t} + a_4 \times SIZE_{i,t} + a_5 \times LEV_{i,t} + \varepsilon_{i,t}$$

Where i, t are firm i in year t

Dependent variable is the ESG disclosure score

Independent variables include Women on corporate board, Customer pressure and Shareholder pressure

Firm size and Leverage are also included as control variables because they can affect the ESG disclosure score. ε is the error item.

Variables Measurement

Dependent Variable

The ESG score data is collected from Thomson Reuters Eikon. The ESG score provided by Eikon quantifies a company's performance on a range of environmental, social, and governance criteria. These scores are derived from publicly available data evaluated against standardized criteria, making them a robust indicator of how well companies manage ESG risks and opportunities relative to their industry peers. The score ranges from 0 (D-) at its poorest to 100 (A+) at its best.

Independent Variable

The independent variable women on coporate board is calculated by the percentage of women on corporate board. This data is also taken from Eikon. Customer pressure is measured by the classification of industries based on customer proximity as suggested by Sweeney and Coughlan (2008) and Branco and Rodrigues (2008). The variable shareholder pressure adopts value 1 if the firm has multiple large shareholders (MLS). The MLS is a very common ownership structure in China and due to (Cai et al., 2016), they define MLS hold more than 10% of company share. Otherwise, companies do not satisfy this condition will receive value 0.

Control Variable

In empirical research, especially studies involving corporate performance or governance like ESG disclosure, it's crucial to control for variables that might influence the primary relationship being examined. This study treat firm size and leverage as control variables because their relationship with ESG score has been proven from previous studies and by controlling for firm size and leverage, the study can provide more insights

ISSN 2076-9202

into the specific impacts of stakeholder pressures on ESG disclosures. The firm size can be calculated by the natural logarithm of total assets. Leverage is measured by total debt divided by total equity.

Sample and Data Collection

Data on firms listed on Hong Kong Stock Exchange (HKEX) from 2021 to 2023 will be gathered. The reason for collecting the data over such time period is that HKEX has been instrumental in pushing for enhanced ESG disclosures, including a mandatory update in 2021 that aligns with international standards. Among 2533 firms from HKEX presented in the Thomson Reuters database, only 246 firms are found to have ESG scores. Excluding firms which do not have related data for the research, the final sample includes 236 listed firms.

Conclusion

The present study raises the question – "How specific stakeholders like shareholders, regulatory bodies, and customers affect ESG disclosures of firms listed on the Hong Kong Stock Exchange?". In order to answer the study question, the researchers firstly design a conceptual framework that indicates the linkage between different factors of stakesholder and ESG disclosure practices. Quantitative research method is employed to conduct the study. Stata software will be used to process the secondary data on firms listed on Hong Kong Stock Exchange (HKEX) from 2021 to 2023. The research results are expected to provide a deeper understanding of how enhanced stakeholder engagement can lead to more meaningful and effective ESG disclosures, thus supporting the wider goals of corporate accountability and sustainable development in Hong Kong.

References

Adams, R. B., De Haan, J., Terjesen, S., & Van Ees, H. (2011). The role of board gender and foreign ownership in the CSR performance of Chinese listed firms. Journal of Corporate Finance, 17(3), 971-982.

Amran, A., Lee, S. P., & Devi, S. S. (2020). The influence of governance structure and strategic corporate social responsibility toward sustainability reporting quality. Business Strategy & Development, 3(1), 2–13.

Boulouta, I. (2013). Hidden connections: The link between board gender diversity and corporate social performance. Journal of Business Ethics, 113(2), 185-197.

Cadez, S., Czerny, A., & Leitner, S. (2019). Corporate sustainability and shareholder activism in the management literature. Journal of Management and Sustainability, 9(1), 22-37.

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling theory: A review and assessment. Journal of Management, 37(1), 39-67.

Crisostomo, V. L., Freire, F. S., & Vasconcellos, F. C. (2013). Corporate social responsibility, firm value and financial performance in Brazil. Social Responsibility Journal, 9(1), 74-85.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. American Sociological Review, 48(2), 147-160.

Harjoto, M. A., Laksmana, I., & Lee, R. (2015). Board diversity and corporate social responsibility. Journal of Business Ethics,

ISSN 2076-9202

132(4), 641-660.

Holderness, C. G., & Sheehan, D. P. (1988). The role of majority shareholders in publicly held corporations: An exploratory analysis. Journal of Financial Economics, 20, 317-346.

Ioannou, I., & Serafeim, G. (2012). What drives corporate social performance? The role of nation-level institutions. Journal of International Business Studies, 43(9), 834-864.

Jain, T., & Jamali, D. (2016). Looking inside the black box: The effect of corporate governance on corporate social responsibility. Corporate Governance: An International Review, 24(3), 253-273.

Lee, M. D., James, K. H., & Kim, Y. T. (2018). The impacts of climate risk on the sustainability of global supply chains. Supply Chain Management: An International Journal, 23(4), 256-270.

Margaritis, D., & Psillaki, M. (2010). Capital structure, equity ownership and firm performance. Journal of Banking & Finance, 34(3), 621-632.

Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. Academy of Management Review, 22(4), 853-886.

Nielsen, S., & Huse, M. (2010). The contribution of women on boards of directors: Going beyond the surface. Corporate Governance: An International Review, 18(2), 136-148.

Paine, L. S. (2014). Sustainability in the boardroom: Lessons from Nike's playbook on making a difference. Harvard Business Review, 92(6), 86-94.

Parmar, B. L., Freeman, R. E., Harrison, J. S., Wicks, A. C., Purnell, L., & De Colle, S. (2010). Stakeholder theory: The state of the art. The Academy of Management Annals, 4(1), 403-445.

Pham, A., Pham, Q., Nguyen, X. M., & Nguyen, H. T. (2020). Climate change and firms' voluntary environmental protection in a transition economy. Journal of Environmental Management, 100-120.

Scott, W. R. (1987). The adolescence of institutional theory. Administrative Science Quarterly, 32(4), 493-511.

Sen, S., & Bhattacharya, C. B. (2001). Does doing good always lead to doing better? Consumer reactions to corporate social responsibility. Journal of Marketing Research, 38(2), 225-243.

Servaes, H., & Tamayo, A. (2013). The impact of corporate social responsibility on firm value: The role of customer awareness. Management Science, 59(5), 1045-1061.

Terjesen, S., Sealy, R., & Singh, V. (2009). Women directors on corporate boards: A review and research agenda. Corporate Governance: An International Review, 17(3), 320-337.

Vu, O. T., Tower, G., & Scully, G. (2018). CSR disclosure by Vietnamese listed firms and its driving forces. The Journal of Developing Areas, 52(4), 55-72.

ISSN 2076-9202

PROBLEM SOLVING ABILITY, SELF-EFFICACY, INFORMATION SEEKING BEHAVIOUR AND UTILIZATION OF MANAGERS IN LARGE-SCALE MANUFACTURING COMPANIES IN NIGERIA

PROF. SUNDAY OLANREWAJU POPOOLA
DEPARTMENT OF LIBRARY, ARCHIVAL AND INFORMATION STUDIES,
UNIVERSITY OF IBADAN, IBADAN, NIGERIA
E-mail: **drpopoola@gmail.com**
Telephone No. : +234-081-048-12624
https://orcid.org/0000-0002-5564-1126

ABSTRACT
This study investigated the self-efficacy, information seeking behaviour and utilisation as facilitators of problem solving ability of managers in large-scale manufacturing companies in Nigeria. The research design adopted for the study was survey method. The validated questionnaire was used for data collection from the 500 managers in ten large-scale manufacturing in Nigeria, out of which 425 responded resulting in 85 percent response rate. The study found that the respondents had high self-efficacy, good information seeking behaviour, and high problem solving ability. It was also found that self-efficacy, information seeking behaviour and utilisation had significant correlations with the problem solving ability of the respondents. More importantly, self-efficacy, information seeking behaviour and utilisation were significant facilitators of problem solving ability of the managers in large-scale manufacturing companies in Nigeria. It is therefore recommended that the board of management in these manufacturing companies should endeavour to give due consideration to self-efficacy, information seeking behaviour and utilisation when planning to improve problem solving ability of their managers.

Keywords: Self-efficacy, Information seeking behaviour, Information utilisation, Managers,, Large-scale manufacturing companies, Nigeria

Biodata
Sunday Olanrewaju Popoola is a professor in the Department of Library, Archival and Information Studies, University of Ibadan, Ibadan, Nigeria. His research interests include Information and Technology Use for Organisational Development, Records and Information management; and Knowledge management

ISSN 2076-9202

INTRODUCTION

Managers create and maintain a conducive internal environment within manufacturing company, so that others can work efficiently and effectively to realise the business goals of the company. A manager's job consists of planning, organising, directing and controlling the resources of the organisation like manufacturing company. These resources include people, jobs or positions, technology, facilities and equipment, materials and supplies, information, and money. In the process of performing their job functions, managers encounter several problems relating to efficient allocation of resources, best marketing strategy to use, inventory control, mechanisms for improving staff productivity, methods of producing high quality goods, investment analysis, selecting the most critical paths for managing projects and programmes, etc.

However, the problem solving ability of managers in a manufacturing company will assist in carrying out their job functions as it is expected of them. The owners of manufacturing companies will like to hire managers with the creative problem solving ability. The problem solving ability may be defined within the context of this study as the knowledge and skills possessed by a manager in providing lasting solutions to difficulties arise when performing their job functions in an organisation like a manufacturing company. Finding best solution to complex business problems by the managers in the manufacturing companies may depend on their self-efficacy beliefs. According to Bandura (1997), self-efficacy is people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. A strong self-efficacy enhances human accomplishment and personal well-being in several ways; business managers with high assurance in their capabilities approach complex business problems as challenges of work life to be solved rather than as threats to be avoided. They approach threatening situation with confidence that they can exercise control over them. Such an efficacious outlook produces personal accomplishment and reduces vulnerability to depression (Multon, Brown & Lent, 1991; Pajares, 1997; Bandura, 2000). In contrast, managers with low self-efficacy shy away from difficult tasks or complex organisational problems which they see as threats to their work life. Self-efficacy beliefs have been found to be related to clinical problems such as work addiction (Marlatt, Baer & Quigley, 1995); social skills (Moe & Zeiss, 1982); and assertiveness (Lee, 1983; 1984).

However, self-efficacy beliefs determine how people, like managers in business organisations feel, think, motivate themselves and behave. Such beliefs produce these diverse effects through four major processes which include cognitive, motivational, affective and selection processes (Bandura, 1994). Many of the challenges of work life are group problems requiring collective or team effort to produce significant change. The strength of groups, organisations and even nations depend partly on people's sense of collective efficacy that they can solve the problems they face and improve their lives through unified effort (Wood & Bandura, 1989). Managers' beliefs in their collective efficacy may influence what they choose to do as a group, how much effort they put into it, their endurance when collective efforts fail to produce desired results, and their likelihood of success (Schwarzer, 1992). Arguably, the self-efficacy of managers in business organisations like manufacturing companies could assist in long way to improve their problem solving abilities.

The current thinking in the business world is that information, labour, capital, land and technology as well as energy are the basic resources that must be fully utilised for organisational development and success.

ISSN 2076-9202

Consequently, managers in business organisations continually seek for information and utilise it for problem solving and to formulate strategic plans.

It is understood that information needs arise when an individual finds himself in a problem situation, when he/she no longer can manage with the knowledge that he/she possesses (Talja, 1992; Adesanya, 2023). It is the information need that triggers information seeking which is caused by uncertainty due to a lack of understanding, gap in meaning, or a limited construct (Kuhlthau, 1993). When managers are faced with complex business problems that require urgent solutions, the gap in their knowledge of the problem situation may force them to seek and use reliable and comprehensive information. Wilson (1997) reiterated that one of the motives for information seeking of any individual such as manager is to gain information to improve one's self-efficacy in coping with problems of whatever kind. Information-seeking behaviour may be defined as the totality of manners (active or passive) that managers exhibit in an organisation in order to identify the needed information, gain access to, retrieve and use information to solve their business problems. In modern organisations, employees effective information-seeking behaviour is found to affect their job performance, their ability to cope with uncertainty in tasks, their knowledge acquisition, and their maintenance of comfortable social relationships with colleagues (Hart & Rice, 1991; Leckie, Pettigrew & Sylvain, 1996; Morisson, 2002; Vakkari, 2003). Information-seeking seems very important to newcomers in an organisation who need new task skills as well as social information to adapt to a new environment (Miller & Jablin, 1991). Morrison (2002) averred that the need for achievement may be a contingent variable for information seeking and use of an individual in an organisation. It must be noted that the source quality, access cost, need for achievement, nature of the problem, and personality dimension (Heinstrom, 2003), task performance (Bystrom, 2000), individual characteristics (Allen & Kim, 2001), productivity (Popoola, 2002), were found to affect information seeking behaviour of their users' group.

However, it must be borne in mind that the end result of information seeking is use irrespective of the work environment of an individual. In a nutshell, information-seeking behaviour of managers in any business organisation will definitely affect their information utilisation. Information utilisation is the right application of processed data, facts, news, options, messages, symbols, images, sounds, signals, signs, voices, databases, computer programme (software), ideas, graphics and imaginations obtained from both published and unpublished sources that are capable of improving knowledge state of a manager on a random event to provide lasting solutions to problems in his/her organisation.

When considering information utilisation of managers in business organisations, it is very important to examine the information sources utilised, information services used, types of information utilised, nature of information systems used and criteria for selection of information sources for use as well as purpose of using information. Kobrin et al (1980) found that managers in American firms relied on their colleagues, subordinates, other firms, banks and personal observations during frequent trips to other countries. Miller (2001) was of the view that business information could better be sourced from direct contact with customers, printed information documents and electronic information sources. Correria and Wilson (1997) reported that managers in the Portuguese chemical industry utilised reports, memoranda and oral communication to scan their business environment. Similarly, it was posited that managers spend a substantial percentage of their time in personal contact with people both inside and outside the organisation to obtain useful information

ISSN 2076-9202

(Mintzberg, 1973; Luthans, 1988; Kotter, 1982). Choo (1994) studied the perception and use of information sources by chief executives in Canadian telecommunications industry and found that few of them personally used the company library and online database services.

Hamzat (2017) and Jones (2023) remarked that managers in the Nigerian business organisations are competent with good problem solving skills. Katzer and Fletcher (1992) posited that by virtue of their position, managers receive more information from more sources through more channels than almost anyone else in an organisation. In Nigeria, the managers believe that their self-efficacy, that is, the belief that one's actions are responsible for successful outcomes, stimulates the better performance of their business organisations particularly manufacturing firms. Be that as it may, is it right to say that self-efficacy, information-seeking behaviour and utilisation could be antecedents of problem solving ability of managers in large-scale manufacturing companies in Nigeria? further, it has been observed that researchers in the field of Library and Information Science have not shown interest in linking self-efficacy, information-seeking behaviour and utilisation of managers in business organisations to their problem solving ability. It is against this backdrop that the present study investigates the self-efficacy, information-seeking behaviour and utilisation as facilitators of problem solving ability of managers in large-scale manufacturing companies in Nigeria.

OBJECTIVES OF THE STUDY

The specific objectives of the study are as follow:

Determining the level of problem solving ability of the respondents.

Determining the most exhibited information-seeking behaviour of the respondents.

Ascertaining the major information sources utilised by the respondents.

Determining the types of information utilised by the respondents.

Ascertaining the level of correlations that exist among self-efficacy, information-seeking behaviour, information utilisation and problem solving ability of the respondents.

Finding out if self-efficacy, information-seeking behaviour, and information utilisation significantly facilitate problem solving ability of the respondents.

Determining the relative contribution of self-efficacy, information-seeking behaviour and utilisation to the facilitation of problem solving ability of the respondents.

HYPOTHESES

The following hypotheses guided the conduct of this study and they were tested at α =0.05 level of significance.

There are no significant correlations among self-efficacy, information-seeking behaviour, information utilisation and problem solving ability of managers in large-scale manufacturing companies in Nigeria.

Self-efficacy, information-seeking behaviour and information utilisation will not significantly facilitate problem solving ability of managers in large-scale manufacturing companies in Nigeria.

LITERATURE REVIEW

Problem solving has been defined as higher-order cognitive process that requires the modulation and control of more routine or fundamental skills (Goldstein & Levin, 1987; Johnson, 2023). Problem solving is an integral part of managerial functions in any organisation like manufacturing company. Several problems like

ISSN 2076-9202

low sales, low quality products, financial crimes, staff low productivity, use of obsolete equipment, wastage of materials, poor market share, poor management perception of information, industrial conflicts, double taxation by government, low demand for products by the consumers, public negative attitudes towards home manufactured goods, inadequate local raw materials for production, and poor infrastructural facilities are militating against the success and survival of most manufacturing companies in Nigeria. The dimensions of problem of any business organisation which could be familiar, new, simple and complex must be ascertained by the managers before providing solution to it. Problem dimensions take into account characteristics of the information need that are idiosyncratic to the user group, to the individual in that group, and to that person's problematic situation (Macmullin & Taylor, 1984).

However, there are many approaches to problem solving, depending on the nature of the problem and the managers involved in the problem. The more classical, rational approach is typically employed and involves stating the problem, clarifying description of the problem, analysing causes, identifying alternatives, assessing each alternative, choosing the best one, implementing it, and evaluating whether the problem was solved or not. Tuyo (2011) and Bernard (2024) equally reiterates that problem solving process involves identifying problems, defining problems, choosing team, analysing problems, choosing solutions and implementing solutions. It must be noted that the ability of manager in business organisations like manufacturing companies to be more effective problem solvers means the ability to use rational approach to solve complex problems.

Nonetheless, researchers have examined self-appraisal variables such as self-concept, self-efficacy, self-esteem and self-adequacy as they relate to the applied problem solving or copings stress (Bandura, 1982; Erickson, 2023). Indeed, self-efficacy belief is very important for manager to accomplish any difficult tasks or complex business problem assigned to him/her. According to Bandura (1986, 1997) and Stajkovic and Luthans (1998), self-efficacy refers to an individual's beliefs about his/her abilities to mobilise cognitive resources and courses of action need to successfully execute a specific task within a given context. Past studies have shown that the higher the person's self-efficacy, the more likely he/she will be to initiate tasks, sustain effort toward task accomplishment, and persist when problems are encountered or even in the face of failure (Bandura, 2001; Jacob, 2023; Samuel, 2024). Bandura (2000) stressed the relevance of cognitive mastery modelling to learn thinking skills and how to apply them by observing the decision rules and reasoning strategies successful models use as they arrive at solutions to problems and make effective decisions in developing self-efficacy in practising managers in organisations.

Gist (1989) trained managers how to generate ideas to improve the quality of organisational functioning and customer service by providing them guidelines and practice in innovative problem solving. Arguably, self-efficacy may be used to facilitate problem solving and decision making of managers in business organisations. Adewumi (2008) and Ajayi (2024) averred that self-efficacy of managers may be used to explain their problem solving ability and decision making as well as innovation capability.

Managers in business organisations such as manufacturing companies need accurate, reliable and timely information for problem solving. The need to provide urgent solutions to complex problems necessitate information seeking by the managers in business organisations. Ojedokun (2007) sees information as statement of facts, figures, ideas and creative works of the human intellect; which are logically or by way of

ISSN 2076-9202

reasoning interrelated, and have been communicated, recorded, published and distributed formally or informally or in any format. It must be noted that at every stage of problem solving, managers need relevant and current information. Information seeking behaviour of the managers will be of tremendous help in their problem solving process. Information seeking is thus natural and necessary mechanism of human existence (Marchionini, 1995). Information seeking behaviour is the purposive and meaningful searching for information by an individual as a result of an expressed need to satisfy some goal. Information seeking behaviour of managers or any user group involves purposes of seeking information, the types of information which are being sought, and the ways and sources with which the needed information is being sought (Leckie, Pettigrew & Sylvain, 1996).

More so, many of the problems managers faced in their workplaces involve uncertainty and ambiguity, they specifically seek and use business qualitative and quantitative data such as prices of goods, sales volume, inflation rate, exchange rate, interest rate, export and import quotas, unemployment rate, wages and salaries, taxation, government expenditures, supply of raw materials, crime rate, population matters, scientific and technical information, etc to provide them with a sense of the hidden or informal dimensions of the situation. Managers often times, gather information from both internal and external business environment to resolve uncertainty and ambiguity arise from their organisational business operations. Belkin, Brooks and Oddy (1982) stated that the information seeking is based on a worker's task or problem. Problem formulation and problem solving have been identified in information seeking studies (Kuhlthau, 1991) as distinct steps in task performance. Xie (2000) and Adegoke (2024) submitted that information users normally employ their general cognitive skills and knowledge to represent their problem or task, establish a set of sub-goals to fulfil the overall goals and develop techniques and strategies to seek the required information. He further stated that users' personal information infrastructures are also developed during the information seeking process when users gain knowledge and skills to adapt to different situations and problems. Some of these strategies are searching, tracking, selecting, comparing, acquiring, consulting and trial and error as noted by Ikojo-Odongo and Ocholla (2004). Similarly, Ellis (1984) identified some other strategies like starting or surveying, chaining, browsing, differentiating, monitoring and extraction of information. O'Reilly (1982) and Morrison (2002) noted that active information seeking is of particular importance to problem solving.

However, Houtari and Wilson (2001) reported that managers in Finnish Publishing Companies made use of meetings and personal contact to obtain internal information and personal contact to get hold of external information at the level of the company, and meetings and personal contact to obtain internal information but telecommunications (phone and fax) to get hold of external information at the level of marketing and sales. Jorosi (2006) studied the information needs and information seeking behaviours of small and medium sized enterprises' managers in Botswana and found that they spent time seeking customer and competition information. They also sourced their needed information from customers, business associates, newspapers, broadcast media and government publications. Similarly, Daft, et. al. (1988) found that Chief Executive Officers (CEOs) in high performing firms in Texas made more and better use of information. Kotter (1982) studied the information behaviour of fifteen successful general managers of nine corporations in various industries in cities across United States and reported that they relied more on information from discussions with individuals than on books, magazines, or reports. Managers in large-scale manufacturing companies

ISSN 2076-9202

work in an information rich environment. Several sources of information both personal and impersonal sources are available to them from which their needed information could be accessed and used for problem solving. Butcher (1998), in a survey of top Japanese firms, established that Japanese managers spent much time collecting and processing business intelligence and used business information to perform their managerial functions. Popoola and Haliso (2004) found that female managers in oil companies in Nigeria made use of company records, colleagues, textbooks and journals when making decisions. De Alwis and Higgins (2001) confirmed that managers in Singapore's manufacturing companies made a very low use of CD-ROM databases and online information services in their decision making process. It must be noted that in problem solving process of managers in business organisations, choosing best alternative methods calls for rational decision making. Popoola (2006) showed that information availability and utilisation significantly influenced decision making of managers in large-scale manufacturing companies in Nigeria. Adewale (2016) reiterated that managers in business organisations need to collect and make use of statistical information and electronic information services in their problem solving process.

The theoretical framework on which this study is anchored is the media richness of the rational choice theories of information channel selection. The most popular of the rational choice models is media richness theory (Daft & Lengel, 1984; Daft, et. al. 1987). Information richness is viewed as the ability of a medium to promote shared meaning or to convey information. The theory predicts that managers will select a channel depending on the ambiguity of the situation. Managers are likely to select richer media for situations that are highly equivocal, and less rich media for non-ambiguous, recurring problems or established, routine situations. This is because in situations of high ambiguity, rich information is needed to overcome different frames of references, clarify situations, and resolve conflicting opinions. However, once equivocality is reduced, lean channels can satisfy information requirements of managers. More so, using rich media for situations of low ambiguity is inefficient as the additional cues, referred to as interpersonal noise (Lea, 1991), would only serve to distract the manager's attention from the information content. This theory is considered relevant to this present study because it is assumed that the managers will seek, and select needed information from rich media for problem solving.

METHODOLOGY

This study utilised descriptive research design of survey method. When samples are true representative of the population, survey method provides the basis for valid generalisation on the population of study based on information gathered. A sample size of 500 managers were drawn from ten manufacturing companies located in Lagos metropolis and were quoted on Nigerian Stock Exchange. A self-developed questionnaire tagged Self-efficacy, Information Seeking-Behaviour, Information Utilisation and Problem Solving Ability of Managers (SEISBUPSA) Scale was used for data gathering. The questionnaire was divided into five main sections. Section A deals with demographic information of the respondents such as gender, age, marital status, educational qualification, job tenure, etc. Section B deals with self-efficacy of the respondents. It is a 10-item scale developed by Schweitzer and Jerusalem (1995). The response format ranged from strongly agree (SA) = 4 to strongly disagree (SD) = 1. It has a cronbach-alpha reliability coefficient of 0.75. Section C deals with information-seeking behaviour of the respondents. It is a 20-item scale developed by the researcher. The response format ranged from very true of me = 4 to not true of me = 1. It has a reliability

ISSN 2076-9202

coefficient (α=0.88) using cronbach-alpha method. Section D deals with information sources utilisation of the respondents. It is a 18-item scale developed by the researcher. It was measured on a-4 point scale using the response format that ranged from very highly utilised = 4 to not utilised = 1. It has reliability coefficient of (α=0.76) using cronbach-alpha method. Section E deals with types of information utilised by the respondents. It is a18-item scale developed by the researcher. It was measured on a-4 point scale using the response format that ranged from very highly utilised = 4 to not utilised = 1. It has reliability coefficient of (α=0.78) using cronbach-alpha method. Section F deals with problem solving ability of the respondents. It is a 12-item problem solving inventory (PSI) developed by Popoola (2017) with five point likert response format ranging from strongly disagree (SD) = 1 to strongly agree (SA) = 5.

The typical examples of the items in the PSI are: I usually able to think up creative and effective alternatives to solve a problem, when I am confused by a problem, one of the things I do is survey the situation and consider all the relevant pieces of information, etc. The reliability of the PSI is 0.84 using cronbach-alpha method. The five hired and trained research assistants who were postgraduate students from the Department of Library, Archival and Information Studies, University of Ibadan, Ibadan administered SEISBUC scale on 500 sampled managers from the ten large-scale manufacturing companies producing food/beverages and drugs in Lagos metropolis. Of these sampled 500 managers, 425 responded and copies of their SEISBUPSA scale were found valid for analysis giving a response rate of 85 percent (See Table 1). The correlation analysis and multiple regression analysis were used to analyse the data with the aid of Software Package for Social Sciences (SPSS).

Table 1: Questionnaire Administration and Retrieval

Company	Sample	Number responded	Response rate (%)
7-up Bottling Plc.	50	50	100
Bit Treat Plc.	50	50	100
Cadbury Nigeria Plc.	50	50	100
Flour Mills Nigeria, Plc.	50	40	80
Nigeria Flour Mills, Plc.	50	40	80
Nestle Nigeria Plc	50	50	100
Nigeria Bottling Company Plc.	50	50	100
National Salt Nigeria Plc.	50	30	60
May and Baker Nigeria Plc.	50	30	60
Glaxo Smithkline Consumer Plc.	50	35	70
Total	500	425	85

ISSN 2076-9202

Table 2: Descriptive Statistics of Self-efficacy of the Respondents

S/N	Items	$\bar{x}$	SD	Variance
1.	I can always manage to solve difficult problems if I try hard enough.	4.00	0.103	0.011
2.	It is easy for me to stick to my aims and accomplish my goals.	3.99	0.124	0.015
3.	If someone opposes me, I can find means and ways to get what I want.	3.89	0.128	0.016
4.	I am confident that I could deal efficiently with unexpected events.	3.98	0.114	0.013
5.	Thanks to my resourcefulness, I know how to handle unforeseen situations.	3.96	0.126	0.016
6.	I can solve most problems if I invest the necessary effort.	3.94	0.120	0.014
7.	I can remain calm when facing difficulties because I can rely on my coping abilities.	3.90	0.118	0.014
8.	When I am confronted with a problem, I can usually find several solutions.	3.92	0.111	0.012
9.	If I am in trouble, I can usually think of something to do.	3.89	0.122	0.015
10.	No matter what comes on my way, I am usually able to handle it.	3.86	0.110	0.012

Going by the test norm of the self-efficacy scale, a score of 1-13 by the respondent indicates low self-efficacy, 14-26 moderate self-efficacy and 27-40 high self-efficacy. The overall mean score of self-efficacy of the respondents is ($\bar{x}$ = 26.86, SD = 5.72) since this mean score falls between the interval 27-40, one can infer that the managers in the large-scale manufacturing companies in Nigeria have high self-efficacy. The reasons being that the majority of them claimed that: They can always manage to solve difficult problems if they try hard, it is easy for them to stick to their aims and accomplish their goals; they are confident that they could deal efficiently with unexpected events; Thanks to their resourcefulness, they know how to handle unforeseen circumstances, they can solve most problems, if they invest the necessary effort, and when they are confronted with a problem, they can usually find several solutions among others.

ISSN 2076-9202

Table 3: Mean Scores of Information Seeking Behaviour of the Respondents

S/N	Items	$\bar{X}$	SD	Variance
1.	When faced with difficult task, I visit our corporate library and record office to seek for the needed information.	4.98	0.64	0.410
2.	When I experienced information overload in my workplace, I adopt filtering method to obtain relevant information for use.	4.96	0.56	0.314
3.	Information sources accessibility is very important to me than source reliability when seeking for information.	2.98	0.28	0.078
4.	Most often, I seek for the needed information from workmates and professional colleagues.	4.99	0.48	0.230
5.	I regularly browse through the internet through known search engines to seek and obtained information.	3.35	0.22	0.048
6.	I always assess available information sources by credibility, relevance and reliability criteria before obtaining information there from.	4.92	0.56	0.314
7.	Despite my tight work schedules, I devote enough time for seeking accurate, complete and reliable information for problem solving.	4.20	0.36	0.130
8.	I update my knowledge through library current awareness service.	4.94	0.46	0.212
9.	I disregard attributes of good information when seeking for the needed information from the available sources.	1.48	0.16	0.026
10.	Most often, I do not bother my head validating the data that comes to my desk by cross-checking the source.	2.40	0.18	0.032
11.	I seek for more information from the corporate information system using chaining strategy.	4.80	0.24	0.058
12.	I do hesitate to use known and unknown search keys to track down and retrieved needed information from the available information materials.	4.91	0.42	0.176
13.	My cognitive ability makes me seek information from online database most frequently and makes sense out of it.	4.92	0.62	0.384

ISSN 2076-9202

14.	Less frequently, I direct my information queries for answering to information management professionals.	4.88	0.48	0.230
15.	Studying the government and company documents before obtaining information therefrom is most preferable for decision making.	4.86	0.44	0.194
16.	Scanning through the literature to locate and select required information for business planning is a manager's top priority.	4.93	0.47	0.221
17.	Given consideration to the subject content, factual data and currency of information in documents are very important to a manager in searching for needed information.	4.95	0.38	0.144
18.	Business managers depend so much on official meetings and query every information sources when searching for job related information.	2.42	0.13	0.017
19.	Generally, managers express their information needs explicitly, interact with available information resources and seek information.	3.30	0.29	0.084
20.	I regularly attend professional association meeting to obtain needed information.	3.64	0.18	0.032

Table 3 presents the mean scores of information seeking behaviour of the respondents. Going by the constructed test norm of the information seeking behaviour scale by Popoola (2007), a score of 1-26 indicates poor information seeking behaviour, 27-53 fair information seeking behaviour and 54-80 good information seeking behaviour. Since the overall mean score of information seeking behaviour of the respondents is ($\bar{x}$ = 50.84, SD = 7.82) and falls within the interval 27-53, one can deduce that the managers in the large-scale manufacturing companies in Nigeria have good information seeking behaviour. The reasons being that the majority of the respondents claimed that: When faced with difficulty task, they visit their corporate library and record office to seek for the needed information; Most often, they seek for the needed information from workmates and professional colleagues; Given consideration to the subject content, factual data and currency of information in documents are very important to a manager in searching for needed information; they update their knowledge through library current awareness service and scanning through the literature to locate and select required information for business planning is a manager's top priority and when they experienced information overload in their workplace, they adopt filtering method to obtain relevant information for use among others.

Table 4: Descriptive Statistics of the Types of Information Utilised by the Respondents

S/N	Types of Information	$\bar{X}$	SD
1.	Prices of goods and services.	3.99	0.212

ISSN 2076-9202

2.	Sources of raw materials.	3.99	0.211
3.	State of technology.	3.98	0.201
4.	Tax laws.	3.96	0.202
5.	Monetary and fiscal policies.	3.96	0.201
6.	Nature of competition.	3.95	0.203
7.	Energy availability/cost.	3.93	0.203
8.	Trade regulations.	3.92	0.203
9.	Wages and salaries.	3.90	0.204
10.	Population and demographic data.	2.98	0.198
11.	Scientific information.	2.96	0.194
12.	Environmental management.	2.95	0.193
13.	Information-flow infrastructure.	2.88	0.186
14.	Costs of advertisement.	2.80	0.184
15.	Household budget.	1.68	0.182
16.	Political matters.	1.64	0.096
17.	Security management.	1.60	0.092
18.	Socio-cultural.	1.58	0.042

Table 4 presents the descriptive statistics of the types of information utilised by the respondents. The major types of information utilised by the respondents are prices of goods and services, sources of raw materials, state of technology, tax laws, monetary and fiscal policies, nature of competition, energy availability/cost, trade regulations, and wages and salaries. It is very surprising to see that information on house budget, political matters, security management and socio-cultural are less given attention for use by the respondents, that is to say, they are occasionally utilised by the respondents.

Table 5: Descriptive Statistics of Information Sources Utilised by the Respondents

S/N	Information Sources	$\bar{X}$	SD
1.	Customers	3.97	0.112
2.	Colleagues	3.97	0.111
3.	Subordinate staff	3.96	0.110
4.	Trade literature	3.95	0.113
5.	Company files	3.95	0.112
6.	Textbooks/Journals	3.94	0.115
7.	Government publications	3.93	0.114
8.	Reports/Feasibility studies	3.91	0.116
9.	Newspapers/Magazines	3.90	0.118
10.	Radio/Television	3.90	0.117
11.	Internet/E-mails	2.99	0.119

ISSN 2076-9202

12.	Company library	2.99	0.121
13.	Encyclopeadia	2.97	0.120
14.	Business/professional associates	2.96	0.119
15.	Competitors	2.94	0.118
16.	Indexes/Abstracts	1.05	0.102
17.	Theses/Dissertations	1.03	0.103
18.	Conference proceedings	1.02	0.101

Table 5 presents information sources utilised by the respondents. The major sources of information utilised by the respondents are customers, colleagues, subordinate staff, trade literature, company files, textbooks/journals, government publications, reports/feasibility studies, newspaper/magazines, and radio/television. It is also noted that indexes/abstracts, theses/dissertations and conference proceedings as authoritative sources of information were never utilised by the respondents.

Table 6: Descriptive Statistics of Problem Solving Ability of the Respondents

S/N	Items	$\bar{X}$	SD
1.	I can easily identify the problem confronting the smooth running of my organisation	3.94	0.102
2.	Often times, I specify the problem to be solved.	3.75	0.116
3.	I regularly make statement about the problem to be tackled.	3.76	0.118
4.	I always analyse the problem to be solved by me.	3.84	0.128
5.	Much priority is placed on data collection on problem to be solved by me.	3.91	0.212
6.	I usually collect relevant information on problem to find solutions to in my workplace.	3.82	0.148
7.	Occasionally, I list and evaluate alternative solutions to the problems facing my organisation.	1.08	0.126
8.	Most often times, I select the optimum solution from alternative solutions to a given problem.	3.88	1.24
9.	I never care to draw up an action plan to implement the optimum solution to a given problem.	1.14	0.102
10.	Most frequently, I carry out the decision required to execute the solution to a problem.	3.92	0.117
11.	I always ensure to re-check that planned benefits actually accrue or re-check that solution has actually worked.	3.74	0.122
12.	I never bother to deploy essential resources to implement solutions to the problems in my workplace.	2.08	0.098

ISSN 2076-9202

Going by the problem solving ability scale test norm, the maximum score of a respondent is 48. The score of 1-16 implies low problem solving ability, 17-32 moderate problem solving ability and 33-48 high problem solving ability. Since the mean score ($\bar{x}$ = 34.75, SD = 6.94) of the problem solving ability of the respondents falls within the interval 33-48, it is deduced that they have high problem solving ability. The reasons being that the majority of the respondents claimed that: they can easily identify the problem confronting the smooth running of their organisations; most frequently, they can carry out the decision required to execute the solution to a problem; much priority is placed on data collection on problem to be solved by them; most often times, they select the optimum solution from alternative solutions to a given problem; they care to draw up an action plan to implement the optimum solution to a given problem; they always analyse the problem to be solved by them and they usually collect relevant information on problem to find solutions to in their workplaces among others.

FINDINGS

Demographic Profiles of the Respondents

The gender distribution of the respondents show that 272 (64%) are males while 153 (36%) are females. One can deduce that male managers dominated the managerial positions of the surveyed large-scale manufacturing companies in Nigeria. The age distribution of the respondents ranged between 27 and 54 years with mean ($\bar{x}$ = 38.52, SD = 4.58) years. Of the 425 respondents, 315 (74%) are married while the rest 110 (26%) are single. The academic qualifications of the respondents varied between bachelor degree to master degree certificates in Business administration, Accounting/Finance, Marketing, Economics, Sociology, Psychology, Engineering and Sciences. The average employment size of the surveyed companies was ($\bar{x}$ = 1058, SD = 45). The companies surveyed were into the production of food and pharmaceutical products.

However, the results obtained in analysing the data collected using Pearson's product moment correlation method are shown in Table 7.

Table 7: Descriptive Statistics and Intercorrelation Matrix of all Variables of Interest

S/N	Variable	$\bar{x}$	SD	1	2	3	4
1.	Problem solving ability (PSA)	165.28	12.82	1.000			
2.	Information seeking behaviour (ISB)	62.66	9.80	0.622 p=0.024	1.000		
3.	Information utilisation (IU)	54.14	8.68	0.664 p=0.018	0.555 p=0.0028	1.000	
4.	Self-efficacy (SE)	34.75	6.94	0.634 p=0.034	0.611 p=0.032	0.562 p=0.029	1.000

NB: All $p<0.05$ significant

As can be seen from Table 1, there is a significant correlation between problem solving ability and information seeking behaviour of the respondents ($r=0.622$, $p<0.05$). There is also a significant correlation between problem solving ability and information utilisation of the respondents ($r=0.664$, $p<0.05$).

ISSN 2076-9202

Self-efficacy which is a psychological construct has a significant correlation with problem solving ability of the respondents (r=0.634, p<0.05). One can therefore deduce that problem solving ability has significant associations with self-efficacy, information seeking behaviour and information utilisation of managers in packaging companies in Nigeria.

Nevertheless, Table 8 shows the results of multiple regression analysis that was conducted to test whether self-efficacy, information seeking behaviouir and information utilisation significantly facilitate problem solving ability of the respondents.

Table 8: Summary of Multiple Regression of Problem Solving Ability on Self-efficacy, Information Seeking Behaviour and Utilisatioin of the Respondents

Source of variation	Df	SS	MS	F-ratio	Sig. P
Due to Regression	3	54,856	18285.33		
Due to Error	396	86,488	218.40	83.71	0.029
Total	399	141,344	18,503.73		

Multiple R (adjusted) = 0.6488

Multiple R squared (adjusted) = 0.4209

Standard Error of Estimate (SEE) = 14.7784

The results of data analysis in Table 2 shows that self-efficacy, information seeking behaviour and information utilisation have significant multiple correlation with problem solving ability of the respondents (R=0.6488, p<0.05). In addition, self-efficacy, information seeking behaviour and information utilisation simultaneously appear to be significant facilitators of problem solving ability of the respondents (F=83.72, df = 3; 396, p<0.05). Further data analysis confirms that each of the criterion measures – self-efficacy (B=0.4222, df = 396, t = 5.03, p<0.05), information seeking behaviour (B=0.4064, df=396, t=5.98, p<0.05), and information utilisation (B=0.4836, df=396, t=6.36, p<0.05) significantly facilitate problem solving ability of the respondents. More importantly, self-efficacy contributes 52.48 percent (Beta = 0.5248), information seeking behaviour contributes 40.28 percent (Beta = 0.4028) and information utilisation contributes 58.94 percent (Beta = 0.5894) to the facilitation of problem solving ability of managers in large-scale manufacturing companies in Nigeria. It must be pointed out at this juncture that the linear combination of self-efficacy, information seeking behaviour and information utilisation of the respondents can be attributed to about 42.09 percent (Multiple R (adjusted) = 0.4209) of the total variance in the problem solving ability of the respondents. The summary for test of significance of self-efficacy, information seeking behaviour and utilisation to the facilitation of problem solving ability of the respondents in presented is Table 9.

Table 9: Summary of Test of Significance of Self-efficacy, Information Seeking Behaviour and Utilisation to the Facilitation of Problem Solving Ability of the Respondents

Variable	B	SE(B)	Beta	T	Sig. P.
Constant	0.2842	0.062		4.88	0.008*
Self-efficacy (SE)	0.4222	0.084	0.5248	5.03	0.029*
Information seeking behaviour (ISB)	0.4064	0.068	0.4028	5.98	0.036*
Information utilisation (IU)	0.4836	0.076	0.5894	6.36	0.004*

ISSN 2076-9202

* Sig. at p<0.05

B = Unstandardised regression weight

Beta = Standardised regression weight

DISCUSSION OF FINDINGS

Bandura (1997) asserted that self-efficacy can develop through four fundamental sources namely mastery experiences: past experiences of success or command; vicarious experience by observing the success and failures of others; verbal persuasion, and physiological states or emotional activation.

Bandura (2001) also reiterated that efficacy beliefs differ in generality, strength and level. The study found that the respondents had high self-efficacy. It must be noted that people with high self-efficacy beliefs perceive troubles as challenges, are highly committed to the activities they perform, invest more time and effort in their job functions, think strategically to tackle problems, recover easily from failure, feel they have control over the majority of their job stressors and feel they are less vulnerable to stress and depression (Bandura, 2008). Managers with high self-efficacy believe that they are capable of solving complex problems and yet desired solutions.

It was found that the respondents had high problem solving ability. Managers with high problem solving ability are great human asset to the large scale manufacturing companies. They are not afraid to perform complex tasks and produce better results. Tuyo (2011) posited that people with high problem solving skills acquire and use reliable and timely information to solve complex problems or deal with difficult situations arising from their daily work activities. Adewale (2016) posited that managers with high problem solving ability recognised problems when and where they occur; expect developing problems while they are still in an infant state; determine an objective or goal of the problem to be solved; generate several possible solutions to the problem; evaluate systematically the possible solutions against a set of predetermined criteria parameters, and thus lead to an effective and suitable solution; plan for the execution of the solution in an organised manner and assess the results of the solution and monitor for future problems.

The study also revealed that the respondents had good information seeking behaviour and the most exhibited information seeking behaviour by them were: when faced with difficult task, I visit our corporate library and record office to seek for the needed information; most often, I seek for the needed information from workmates and professional colleagues; when I experienced information overload in my workplace, I adopt filtering method to obtain relevant information for use; Given consideration to the subject content, factual data and currency of information in documents are very important to a manager in searching for needed information; I update my knowledge through library current awareness service; and scanning through the literature to locate and select required information for business planning is a manager's top priority among others. Ademola (2017) posited that managers in manufacturing companies might use chaining: following footnotes and citations in known material or forward chaining from know items through citation indexes; browsing: semi-directed or semi-structured searching; differentiating: using known differences in information sources as a means of filtering the amount of information obtained; monitoring: keeping up-to-date or current awareness searching; extracting: selectively identifying relevant information from a source; and verifying relevant information from a source; and verifying: checking the accuracy of information obtained from a source. Abel (2018) averred that managers in business organisations in Nigeria

ISSN 2076-9202

had good information seeking habit and used information intelligently for their managerial performance.

The study also confirmed that customers, colleagues, subordinate staff, trade literature, company files, textbooks/journals, government publications, reports/feasibility studies, newspapers/magazines and radio/television were the major information sources used by the respondents. Previous studies equally reported that managers in the manufacturing companies made use of customers, colleagues, subordinate staff, company files, textbooks, government publications, reports/feasibility studies, newspapers/magazines, journals, radio/television to source their needed information to perform their roles (Kobrin et. al., 1980; Jorosi, 2006; Popoola & Haliso, 2004; Correria & Wilson, 1997; Kotter, 1982; de-Alwis & Higgins, 2001; Popoola, 2018; Choo, 1994; Popoola, 2006; Case, 2002). Managers in business organisations like manufacturing companies utilised different types of information to resolve problems confronting their organisational business operations. However, this study showed that the most specific types of information utilised by the respondents were prices of goods and services, sources of raw materials, state of technology, tax laws, monetary and fiscal policies, nature of competition, energy availability/cost, trade regulations and wages and salaries.

Past studies also found that managers in the manufacturing firms utilised the following types of business information to enhance their problem solving and decision making activities: market information, information on regulations, competitor, inflation rate, scientific information, technological information, human resource management, taxation, socio-cultural, unemployment, and geographical (Popoola & Okiki, 2013; Popoola, 2011; Popoola, 2012; Aderemi, 2024).

It was established that self-efficacy, information seeking behaviour and information utilisation had significant correlations with problem solving ability of the respondents. Abel (2018) also submitted self-efficacy and information searching may affect the strategy used by managers to solve the problems confronting their organisations. Popoola (2017) similarly established that information acquisition and utilisation had significant correlations with problem solving skills of managers in microfinance banks in Nigeria. Adedeji (2018) remarked that collection, selection and use of reliable and relevant information were very important factors in enhancing problem solving ability of managers in the manufacturing firms. It was further established that self-efficacy, information seeking behaviour and information utilisation whether individually and jointly were significant facilitators of problem solving ability of managers ini large-scale manufacturing companies in Nigeria. Adetona (2016) noted that emotional intelligence, self-efficacy beliefs and information use were critical factors necessary to improve problem solving and decision making of managers in the manufacturing firms. In fact, the capability of managers to solve complex problems in any organisation must be premised on their self-efficacy beliefs, good information gathering behaviour and intelligent use of information.

CONCLUSION AND RECOMMENDATIONS

Managers in industrial organisations swim in the sea of information. Their business environment is also rich in information. When the need arises to solve complex problems, managers are forced to seek for quality information to address the situation and provide lasting solutions to such problems. The self-efficacy belief of the managers provides them the opportunity to search for needed information, locate it, retrieve it and use it for problem solving. Information is a great resource necessary for managers in industrial

ISSN 2076-9202

organisations to achieve success.

Problem solving is a complex skill that managers needs and required by their organisations so as to gain competitive advantage and survive in the business world. Therefore, it was revealed in the present study that: the managers in the large-scale manufacturing companies in Nigeria had good information seeking behaviour, high self-efficacy and high problem solving ability and they made intensive use of information to enhance their problem solving ability. There were significant positive correlations among self-efficacy, information seeking behaviour, information utilisation and problem solving of the respondents. Indeed, self-efficacy, information seeking behaviour and information utilisation, individually and jointly were significant facilitators of problem solving ability of the respondents. Based on the findings of this study, it is therefore recommended that the management of large-scale manufacturing companies in Nigeria should endeavour to give due consideration to self-efficacy, information seeking behaviour and information utilisation when planning to improve problem solving ability of their managers. They should encourage their managers to seek and use quality information to enhance their problem solving ability. Information literacy skills training may be given to reinforce their information seeking behaviour and use for good problem solving ability.

REFERENCES

Abel, A. A. (2018). Information searching habit and managerial performance in Nigerian business organisation. *Journal of Industrial Organisation*, Vol. 12, No. 4, pp. 250-262.

Adedeji, B. A. (2018). Usefulness of quality information in problem solving of workers in organisation. *Journal of Business Studies Review,* Vol. 15, No. 4, pp. 120-132.

Adegoke, B. B. (2024). Information as a Strategic Weapon for Solving Problems by Managers in Business Organisations. *Strategic Management Review*, 5(4):220-231.

Ademola, A. B. (2017). A survey of information needs and searching strategies of managers in Nigerian manufacturing companies. *Journal of Management Science*, Vol. 10, No. 2, pp. 150-161.

Aderemi, S. O. (2024). Information Requirement and Use for Decision Making of Managers in Manufacturing Industry in Nigeria. *Journal of Creativity and Change Management,* 5(1):110-121.

Adesanya, A. O. (2023). Information Needs and Use of Employees in Organisations. *Management Studies Quarterly*, 4(3):150-162.

Adetona, A. O. (2016). Emotional intelligence and self-efficacy the critical factor of organisational development. *Personnel Management Journal,* Vol. 8, No. 2, pp. 150-164.

Adewale, B. O. (2016). Data management and problem solving in private sector organisations in Nigeria. *Business Administration Studies*, Vol. 10, No. 2, pp. 38-52.

Ajayi, A. A. (2024). Self-Efficacy and Decision making Quality of Managers in Insurance Companies. *Management and Information Technology Journal,* 3(2):140-151.

ISSN 2076-9202

Allen, B. L. and Kim, K. S. (2001). Person and context in information seeking: Interaction between cognitive and task variables. *New Review of Information Behaviour Research,* Vol. 2, pp. 1-16.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist,* Vol. 37, pp. 122-147.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Prentice-Hall, Englewood Cliff, NJ.

Bandura, A. (1994). Self-efficacy. In Ramachandran, V. S. (Ed.) *Encyclopedia of Human Behaviour.* New York: Academic Press, Vol. 4, pp. 71-81.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W.H. Freeman and Company, New York, NY.

Bandura, A. (2000). Cultivate self-efficacy for personal and organisational effectiveness. In Locke, E. A. (Ed.) Handbook principles of organisational behaviour, Blackwell, Oxford, pp. 120-136.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, Vol. 52, No. 1, pp. 1-26.

Bandura, A. (2008). Toward an agentic theory of the self. In H. Marsh, R. G. Graven and D. M. McInerney (Eds.), *Advances in self research, self-processes, learning, and enabling human potential* (pp. 15-49). NC: Information Age Publishing.

Belkin, N. J., Brooks, H. M. and Oddy, R. N. (1982). Ask for information retrieval. *Journal of Documentation,* Vol. 38, No. 2, pp. 61-71.

Bernard, S. R. (2024). Relevance of Information in Problem Solving of Employees in Engineering Firms. *Journal of Engineering and Management Science*, 4(1):110-119.

Butcher, A. (1998). *Meeting managers' information needs: Managing information report*. London: Aslib.

Bystrom, K. (2000). The effects of task complexity on the relationship between information types acquired and information sources used. *New Review of Information Behaviour Research,* Vol. 1, pp. 85-101.

Case, D. (2002). Looking for information: A survey of research on information seeking, needs and behaviour. Amsterdam: Academic Press.

Choo, C. W. (1994). Perception and use of information sources in environmental scanning. *Library and Information Science Research,* Vol. 16, No. 1, pp. 23-40.

Correira, Z. and Wilson, T. D. (1997). Scanning the business environment for information: A grounded theory approach. *Information Research*, Vol. 2, No. 4, pp. 1-12.

Daft, R. L. and Lengel, R. H. (1984). Information richness: A new approach to managerial behaviour and organisational design. *Research ion Organisational Behaviour*, Vol. 6, pp. 191-233.

Daft, R. L., Lengel, R. H. and Trevino, L. K. (1987). Message equivocability, media selection and manager performance: Implications for information systems. *MIS Quarterly,* Vol. 11, No. 3, pp. 354-365.

de-Alwis, S. M. and Higgins, S. E. (2001). Information as a tool for management decision making: A case study of Singapore. *Information Research*, Vol. 7, No. 1, pp. 1-37.

ISSN 2076-9202

Ellis, D. A. (1989). Behavioural approach to ifnromation retrieval system design. *Journal of Documentation,* Vol. 45, No. 3, pp. 177-212.

Erickson, O. M. (2023). Core Self-Evaluation Traits and Problem Solving Ability of Workers in Public Enterprises in Nigeria. *Journal of Sociology and Religion,* 5(3):80-89.

Gist, M. E. (1989). The influence of training method on self-efficacy and idea generation among managers. *Personal Psychology,* Vol. 42, pp. 787-805.

Goldstein, F. C. and Levin, H. S. (1987). Disorders of reasoning and problem solving ability. In M. Meier, A. Benton and Diller (Eds.) *Neuropsychological rehabilitation.* London: Taylor and Francis Group.

Hamzat,, Q. A. (2017). The qualities of good managers and decision makers in Nigerian business organisations. *Business Management Quarterly*, Vol. 6, No. 4, pp. 20-26.

Hart, P. J. and Rice, R. E. (1991). Using information from external database type, organisational differences and outcomes. *Information Processing and Management*, Vol. 27, No. 5, pp. 461-479.

Heinstrom, J. (2003). Personality dimensions and their influence on information behaviour. *Information Research*, Vol. 9, No. 1, pp. 1-12.

Huotari, M. L. and Wilson, T. D. (2001). Determining organisational information needs: The critical success factors approach. *Information Research,* Vol. 6, No. 3, paper 108.

Ikoja-Odongo, R. and Ocholla, D. N. (2004). Information seeking behaviour of the informal sector entrepreneurs: The Uganda experience. *Libri,* Vol. 54, No. 1, pp. 54-66.

Jacob, M. A. (2023). Self-Efficacy and Job Performance of Employees in Nigerian Banking Industry. *Journal of Science and Business Management*, 5(2):115-126.

Johnson, A. B. (2023). Higher Order Cognitive Skills and Performance of Workers in Blue-collar Jobs. *Social Sciences and Technology Management*, 2(2):110-118.

Jones, R. R. (2023). Managerial Competencies in Nigerian Business Organisations. *Journal of Management Review,* 3(1):60-71.

Jorosi, B. N. (2006). The information needs and information seeking behaviours of SME managers in Botswana. *Libri*, Vol. 56, pp. 97-77.

Kobrin, S. J., Basek, J., Blank, S. and Palombara, J. L. (1980). The assessment and evaluation of non-economic environments by American firms. *Journal of International Business Studies*, Vol. 11, No. 1, pp. 32-47.

Kotter, J. P. (1982). *The general manager.* New York, NY, Free Press,

Kuhlthau, C. C. (1991). Inside the search process: Information seeking from user's perspective. *Journal of the American Society for Information Science*, Vol. 42, No. 5, pp. 361-371.

Kuhlthau, C. C. (1993). Seeking meaning: A process approach to library and information services, 2nd ed., Westport, CT,

ISSN 2076-9202

Libraries Unlimited.

Lea, M. (1991). Rationalist assumptions in cross-media comparisons of computer mediated communication. *Behaviour and Information Technology,* Vol. 10, No. 21, pp. 153-172.

Leckie, K., Pettigrew, K., and Syluain, C. (1996). Modelling the information seeking of professionals: A general model derived from research on engineers, healthcare professionals, and lawyers. *Library Quarterly*, Vol. 66, No. 2, pp. 161-193.

Lee, C. (1983). Self-efficacy and behaviour as predictors of subsequent behaviour in an assertiveness training programme. *Behaviour Research and Therapy*, Vol. 21, pp. 225-232.

Lee, C. (1984). Accuracy of efficacy and outcome expectation to academic achievement and persistence. *Journal of Counselling Psychology,* Vol. 33, pp. 265-269.

Luthans, F. (1988). Successful versus effective real managers. *Academy of Management Executive,* Vol. 2, No. 2, pp. 127-132.

Macmillin, S. E. and Taylor, R. S. (1984). Problem dimensions and information traits. *Information Society* Vol. 3, No. 1, pp. 91-111.

Marchionini, G. (1995). *Information seeking in electronic environments*. Cambridge: Cambridge University Press.

Marlatt, A. A., Baer, J. S. and Quigley, A. A. (1995). Self-efficacy and addictive behaviour. In A. Bandura (Ed.) *Self-efficacy in changing societies* (pp. 289-316). New York: Cambridge University Press.

Miller, M. A. (2001). Influence of business information sources utilisation on workers' productivity. *Journal of Corporate Banking Management*, Vol. 10, No. 2, pp. 58-64.

Miller, V. D., and Jablin, F. M. (1991). Information seeking during organisational entry: influence, tactics and a model of the process. *The Academy of Management Review*, Vol. 16, No. 1, pp. 92-120.

Mintzberg, H. (1973). *The nature of managerial work.* New York: Harper and Row Publishers.

Moe, K. O. and Zeiss, A. M. (1982). Measuring self-efficacy expectations for social skills: A methodological inquiry. *Cognitive Therapy and Research*, Vol. 6, pp. 191-205.

Morrison, E. W. (2002). Information seeking within organisations. *Human Communication Research,* Vol. 28, No. 2, pp. 229-242.

Multon, K. D., Brown, S. D. and Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta analytic investigation. *Journal of Counselling Psychology* Vol. 38, pp. 30-38.

O'Reilly, C. A. (1982). Variations in decision makers' use of information sources: The impact of quality and accessibility of information. *Academy of Management Journal*, Vol. 25, No. 4, pp. 756-771.

Ojedokun, A. A. (2007). *Information literacy for tertiary education students in African*. Ibadan: Third World Information Services Limited.

Pajares, F. (1997). Current directions in self-efficacy research. In M. Maehr and P. R. Pintrich (Eds.) *Advances in motivation and achievement*, Vol. 10 (pp. 1-49) Greenwich, CT: JAI Press.

Popoola, S. O. (2002). Information-seeking behaviour and use as correlates of perceived work performance of corporate insurance managers in Nigeria. *Ife Behavioural Research*, Vol. 4, No. 1, pp. 14-34.

Popoola, S. O. (2006). Influence of information availability and utilization on decision-making of managers in large-scale manufacturing industries in Nigeria. *South African Journal of Libraries and Information Science*, Vol. 72, No. 1, pp. 45-55.

Popoola, S. O. (2011). Relational analysis of creativity, information seeking behaviour and utilization of managers in petroleum marketing companies in Nigeria. *Communicate: Journal of Library and Information Science,* Vol. 13, No. 2, pp. 1-20.

Popoola, S. O. (2012). Job tenure, education, information acquisition and use as factors influencing organisational innovation of managers in chemical and paint companies in Nigeria. *Communicate: Journal of Library and Information Science*, Vol. 14, No. 1, pp. 65-84.

Popoola, S. O. (2017). Problem solving skills, information acquisition and utilisation among managers in microfinance banks in Nigeria. *Information and Knowledge Management*, Vol. 7, No. 2, pp. 21-30.

Popoola, S. O. (2018). Self-efficacy, information accessibility and utilisation as determinants of creativity of managers in packaging companies in Nigeria; *Journal of Information Engineering and Applications,* Vol. 8, No. 7, pp. 38-50.

Popoola, S. O. and Haliso, Y. (2004). Information utilisation in decision making among female managers in oil companies in Nigeria. *Nigerian Journal of Applied Psychology*, Vol. 8, No. 2, pp. 145-163.

Popoọla, S. O. and Okiki, O. C. (2013). Information availability and utilisation as determinants of creativity of managers in commercial banks in Nigeria. *Information and Knowledge Management* Vol. 3, No. 8, pp. 22-34.

Samuel, A. A. (2024). Self-Efficacy and Creative Problem Solving of Chief Executives in Kenyan Manufacturing Companies. *Journal of Finance and Economics,* 2(2):78-94.

Schwartzer, R. and Jerusalem, A. (1995). Generalized self-efficacy scale. In J. Weinmann, S. and A. Johnson (Eds.) *Measures in health psychology: A user's portfolio* (pp. 35-37) Windsor, U.K.: NFER-NELSON.

Schwarzer, R. (1992). *Self-efficacy: Thought control of action.* Washington, DC: Hemisphere.

Stajkovic, A. and Luthans, F. (1998). Self-efficacy and work-related performance: A metal-analysis. *Psychological Bulletin*, Vol. 124, pp. 240-261.

Talja, S. (1992). Constituting information and use as research objects. In Vakkari, P. et. al., (Eds.) *Information seeking in context*. London: Taylor Graham, pp. 67-80.

Tuyo, M. (2011). Problem solving skills, information preference and use by library managers. *Journal of Applied Information Science and Technology,* Vol. 5, No. 1, pp. 16-29.

Vikkari, P. (2003). Task-based information retrieval process: A summary and generalisation of a longitudinal study. *Journal of Documentation,* Vol. 57, No. 1, pp. 44-60.

Wilson, T. D. (1997). Information behaviour: An interdisciplinary perspective. *Information Processing and Management,* Vol. 33, No. 4, pp. 551-572.

ISSN 2076-9202

Wood, R. and Bandura, A. (1989). Impact of conceptions of ability on self-regulation mechanisms and complex decision making. *Journal of Personality and Social Psychology*, Vol. 56, pp. 407-415.

Xie, H. (2000). Shifts of interactive intentions and information seeking strategies in interactive information retrieval. *Journal of the American Society for Information Science*, Vol. 51, No. 9, pp. 841-857.

ISSN 2076-9202

UNDERSTANDING THE IMPORTANCE OF NEGOTIATION SKILLS WITHIN ORGANIZATIONS

Dr. Radhika Kapur
Design thinker and Visiting Faculty at Delhi University, India

Abstract

Within all types of organizations, there are occurrence of situations, which enable the management and union to put into practice negotiation skills. The negotiation takes place among the individuals in terms of in terms of various aspects of the organizations, job duties, measures, strategies, pay, reimbursements, and various factors related to the overall working environment. The workforce should be provided with the rights to express their demands before the management. On the other hand, the management should acquire an efficient understanding of the needs and demands of the workforce. They are vested with the authority and responsibility of creating an environment in a manner, where the workforce are able to concentrate on their job duties in a well-organized manner. The workforce are the ones, who make use of their knowledge, skills and abilities to do well in their job duties, achieve organizational goals and lead to up-gradation of the overall structure of the organizations. Hence, it is of utmost significance to ensure, they feel comfortable and satisfied within the working environment. The communication processes need to take place in an effective manner. Furthermore, the individuals need to ensure, there are not occurrence of any impediments within the course of implementation of these skills and achievement of desired goals. Therefore, when there are occurrence of any issues and concerns, negotiation skills are put into operation. The main concepts that are taken into account in this research paper are, understanding the meaning and significance of negotiation skills, stages of negotiations and measures to bring about improvements in negotiation skills.

Keywords: Job Duties, Knowledge, Management, Measures, Negotiation Skills, Organizations, Workforce

In the professional lives of the individuals, they come across situations, where they are required to put into operation negotiation skills. In the implementation of these skills, the individuals are required to augment their knowledge in terms of various aspects, i.e. persuading, convincing, influencing, co-operating and compromising. Negotiations can take place between two or more individuals or parties (Shonk, 2021). Within various types of organizations, the unions have demands in terms of different factors, i.e. salary, reimbursements, machines, equipment, resources, technologies and so forth. They make their demands before the management. When the workforce do not feel satisfied with these aspects, they put into operation negotiation skills. The management and the union may not possess the same viewpoints. But when there are occurrence of issues in terms of various aspects, they are required to put into operation negotiation skills in an adequate manner. The employees need to hone their competencies and abilities, which would lead to up-gradation of these skills in an effective manner. Therefore, the negotiation skills prove to be meaningful in an appropriate manner in all types of organizations.

ISSN 2076-9202

Human resources are the assets of the organizations. They need to make use of their competencies, abilities and aptitude to do well in their job duties, achieve desired goals and lead to up-gradation of the overall structure of the organizations. The individuals in leadership positions are vested with the responsibility to create an amiable and pleasant environment within the organizations. This would enable the workforce to concentrate well on their job duties. Furthermore, there is a need to make provision of infrastructure, amenities, facilities, machines, equipment, and technologies in an appropriate manner (Miller, 2021). When the employees form the viewpoint that they are not satisfied with various aspects, in such cases, they are required to put into operation negotiation skills. The management needs to listen to the demands of the employees and implement the measures to satisfy them. The communication processes are required to take place in an effective manner. The individuals need to ensure, they make use of polite language and decent words. Furthermore, they need to treat each other with respect and courtesy. The traits of morality and ethics need to be reinforced in putting into practice these skills. Therefore, it can be stated, the negotiation skills should take place in an honest and principled manner.

Negotiation skills are regarded worthwhile for the success of the business or organizations. The individuals need to augment their knowledge and understanding in terms of significance of these skills. On the internet, there are articles available that make provision of information in terms of these skills. On the other hand, when negotiations are to take place among the management and union, they need to be informative in terms of these skills. The communication, persuasion, planning, strategizing, and co-operating are the factors that need to be put into operation in these skills. The individuals need to possess sufficient knowledge in terms of their job duties and responsibilities. Furthermore, they need to put into operation the methods and strategies in an adequate manner. In the present existence, with advancements taking place and with the advent of modernization and technologies, the individuals are to utilize modern, technical and innovative methods in the implementation of job duties. Hence, when these methods are to be introduced, there is occurrence of negotiation skills. The workforce make their demands before the management regarding bringing about improvements. Therefore, there is utilization of these skills with the main aim of bringing about improvements in tasks and activities.

Understanding the Meaning and Significance of Negotiation Skills

Within the course of the employment opportunities, the individuals come across various types of situations, where they are required to put into operation negotiation skills. When there are occurrence of different issues and problems, the management and the union need to put into operation the strategies, which would facilitate the implementation of these skills in an appropriate manner. In the implementation of these skills, the individuals are required to augment their knowledge in terms of various aspects, i.e. persuading, convincing, influencing, co-operating and compromising. These aspects are regarded as an integral part of negotiations. Negotiations can take place between two or more individuals or parties. Within various types of organizations, the unions have demands in terms of different factors, i.e. salary, reimbursements, machineries, apparatus, capitals, assets, infrastructure, know-hows and so forth. They make their demands before the management. When the workforce do not feel satisfied with these aspects, they put into operation negotiation skills. Therefore, the individuals are able to understand the meaning and significance of

ISSN 2076-9202

negotiation skills, when they prove to be useful in providing solutions to the problems.

In order to carry out job duties successfully, there are various factors in terms of which the members need to be aware of. These are, being well-versed in terms of job duties and responsibilities; being well-versed in terms of modern, scientific and innovative methods; making wise and productive decisions; implementing time management skills; honing analytical and critical thinking skills; promoting a normal mind-set; inculcating the traits of morality, ethics, diligence and conscientiousness; coping with psychological problems of anger, stress, anxiety and frustration in an effective manner; forming positive viewpoints in terms of various aspects of the organizations and individuals; possessing the abilities to work under stress; augmenting knowledge, skills and abilities and forming cordial and sociable terms and relationships with others. Furthermore, the honing of these factors will lead to up-gradation of negotiation skills. As a consequence, the individuals will augment their proficiency and expertise. Therefore, meaning and significance of negotiation skills is understood, when they prove to be advantageous in leading to up-gradation of all the factors to do well in one's job duties and achieve organizational goals.

When all the members of the organization are wholeheartedly determined towards achieving desired goals and objectives, they need to recognise the meaning and significance of these skills. The management and the union are required to implement these skills within the course of putting into practice job duties and responsibilities. Negotiations may take place for one day or even for couple of weeks. Negotiation skills are regarded worthwhile for the success of the business or organizations. The main reason is, the individuals cannot carry out their job duties in seclusion. They are required to work in collaboration and integration with each other. When the workforce experience cumbersome situations, they need to provide solutions to them. Furthermore, they need to be prevented from giving rise to impediments. The implementation of negotiation skills would enable the individuals to cope with problems and stressful situations in an effective manner. Therefore, meaning and significance of negotiation skills is understood, when they are facilitating in providing solutions to various types of problems and carrying out all job duties successfully.

Stages of Negotiations

Negotiations are regarded as an integral part of the job duties of the individuals. In leading to overall functioning of the organizations in an effective manner, the individuals need to be well-equipped in terms of stages of negotiations. It is comprehensively understood that all the members of the organization, irrespective of their job positions in the hierarchy have certain goals and objectives to achieve. In order to achieve the desired goals and objectives, they will have to obtain support and assistance from each other. The union will have to obtain support and help from supervisors and employers. Hence, they need to ensure, the negotiation skills are put into operation in an appropriate manner (What is Negotiation? 2021). The members need to be informative in terms of the stages of negotiation. One of the important aspects that needs to be taken into account is, the members need to put into practice constructive factors, when they are implementing the stages of negotiation. These are, preparation, discussion, clarification of goals, negotiate towards a win-win outcome, agreement, and implementation of action. These are stated as follows:

Preparation

ISSN 2076-9202

The job duties, tasks and activities are put into operation by all the members in accordance to the techniques and methodologies. The members need to pay attention towards enhancing their knowledge in terms of the pioneering methods throughout their job duties. These methods would facilitate the implementation of tasks in an efficient manner. Hence, throughout the job duties of all the individuals, they need to augment their knowledge and understanding in terms of these methods. When they are well-informed in terms of these, they are said to be prepared. The utilization of modern, scientific and innovative methods will enable the individuals to put into operation the job duties in a well-ordered and satisfactory manner. Furthermore, they will understand that how they need to get engaged in negotiations in an effective manner. It is apparently understood, when the members will be well-equipped in terms of strategies of putting into operation the job duties, they will ensure, they speak in terms of significant aspects in implementing negotiations. The up-gradation of negotiation skills will enable the individuals to augment their knowledge, skills and abilities. Hence, they are well-prepared. Therefore, preparation is the stage of negotiation, which needs to be reinforced on regular basis.

Discussion

In the discussion stage, the individuals are required to generate ideas and viewpoints. It is apparently understood, when one is to discuss a topic or a concept with others, they need to be informative in terms of them. Furthermore, they are required to convey information and augment their knowledge in terms of various aspects. It is apparently understood, when the individuals are to come to a deal, they need to get engaged in discussion. The discussion is regarded as the key stage, which is to be put into operation in a satisfactory manner. The implementation of discussion would facilitate the implementation of negotiation skills in an honest and ethical manner. Furthermore, the individuals need to make provision of factual information. One of the important aspects that needs to be taken into account is, the individuals should not let the conflicts and disagreements to give rise to impediments. The individuals need to treat each other with respect and courtesy. Therefore, discussion is the stage of negotiation, which enables the individuals to augment their knowledge and understanding in terms of various factors.

Clarification of Goals

All the members of the organization, irrespective of their job positions in the hierarchy need to be informative in terms of organizational goals and objectives. In other words, the goals should be clearly understood to them. Furthermore, they need to be informative in terms of methods and strategies needed in the achievement of goals. When negotiations take place among members, they need to be well-versed in terms of the goals that they aspire to achieve. Discussion in terms of achievement of goals is regarded as a central part of negotiations. It is the job duty of the supervisors and employers to impart information among the employees in terms of organizational goals. Furthermore, they are to stimulate the mind-sets of the employees. In this manner, they develop motivation towards the implementation of job duties, meeting the expectations of the employers, augmenting information in terms of pioneering methods, achieving desired goals and leading to up-gradation of the overall structure of the organizations. Therefore, clarification of goals is regarded as one of the indispensable stages of negotiation.

ISSN 2076-9202

Negotiate towards a Win-Win Outcome

This is the stage of negotiation, which has been beneficial to both the union and the management. As the name implies, both union and management win. The win-win outcome is the ultimate goal of the union and management. When they are carrying out negotiations, they aspire that they will be successful in the implementation of job duties. The union dilemmas have been solved and both union and management are able to benefit. When negotiations take place among members, they need to reinforce the traits of consideration and thoughtfulness. The management is required to understand the needs and requirements of the union. On the other hand, the union should not put forward those demands before the management, which are difficult to fulfil. The suggestions of alternative strategies and viewpoints are required to be taken into account in this case. The strategies and approaches are put into operation in a manner, which would prove to be efficacious and worthwhile on a comprehensive basis. Therefore, negotiate towards a win-win outcome is one of the significant stages of negotiation.

Agreement

An agreement is the understanding between the individuals and groups who are engaged in negotiations. The union and management need to develop mutual understanding. Furthermore, they need to work in collaboration and integration with each other to generate the desired outcomes. When they are carrying out negotiations, they aspire that they will be positive in the implementation of job duties and in achievement of the desired goals. When the union dilemmas are solved and both union and management are able to benefit, the negotiations are stated to be carried out successfully. When negotiations take place among members, they need to reinforce the traits of respect and generosity. The management is required to understand the needs and requirements of the union. On the other hand, the union should not put forward those demands before the management, in terms of which, the members do not possess sufficient resources. Therefore, agreement is the stage of negotiation, which both the management and the union aspire for throughout the implementation of their job duties.

Implementation of Action

Implementation is referred to application, enactment and execution. After the management and union have augmented their knowledge and understanding in terms of methods, strategies and techniques, they are required to put them into operation in an efficient manner. One of the important aspects that needs to be taken into account is, these need to be favourable to the members as well as the overall structure of the organizations. The management is required to ensure, the union feel comfortable within the working environment. Furthermore, it needs to be ensured that they concentrate on their job duties in a well-ordered manner. On the other hand, the workforce put in efforts to their best abilities to carry out the job duties in accordance to the expectations of the supervisors and employers. The implementation of action should prove to be advantageous to both the union and management. It is apparently understood, when the members will be well-equipped in terms of strategies of putting into operation negotiations, they will render an important contribution in overcoming the barriers. As a consequence, they will be able to put into operation the action successfully. Therefore, in all negotiations, implementation of action is a noteworthy stage of negotiation.

ISSN 2076-9202

Measures to bring about Improvements in Negotiation Skills

When two or more individuals or parties are focused on putting into operation certain tasks or activities or are determined towards achievement of desired aims and objectives, in such cases, they cannot carry out job duties in seclusion. They are required to deal with others and work in collaboration and integration. In some cases, it is difficult to deal and work with others (Negotiation Skills, 2021). In such cases, the individuals are required to put into practice the aspects of persuading, convincing, influencing, co-operating and compromising. In order to put these practice in a well-organized and disciplined manner, the individuals need to be informative in terms of measures to bring about improvements in negotiations. When the members of the organization are wholeheartedly determined towards doing well in their job duties, fulfilling the expectations of the supervisors and employers, achieving desired goals and leading to up-gradation of the overall structure of the organizations, they will put emphasis on reinforcement of these measures. The adult members of the organization are normally aware in terms of measures of bringing about improvements in negotiation skills. These are stated as follows:

Implementation of Effective Communication Processes

The communication processes are required to take place in an effective manner. The individuals need to ensure, they make use of polite language and decent words. Furthermore, they need to treat each other with respect and courtesy. The traits of morality and ethics need to be reinforced within the course of implementation of effective communication processes. Hence, it can be stated, the communication processes would facilitate the implementation of negotiation skills in a truthful and principled manner. Furthermore, the individuals need to make provision of factual information. One of the important aspects that needs to be taken into account is, the individuals should not let the conflicts and disagreements to assume a major form. The communication needs to take place in a peaceful way. Therefore, it is understood on a comprehensive basis that implementation of effective communication processes is regarded as one of the indispensable measures to bring about improvements in negotiation skills.

Formulation of Anti-Discriminatory Laws

The individuals are different from each other on the basis of factors, i.e. caste, creed, race, ethnicity, religion, gender, age groups, cultures, personality traits and socio-economic backgrounds. Equal rights and opportunities are required to be provided to them. In the implementation of various tasks and activities, all the members need to be treated equally. Furthermore, it needs to be ensured, there is not any discrimination on the basis of any of the factors. The individuals in leadership positions are vested with the authority and responsibility of formulating the laws and rules. The overall functioning of the organizations are required to take place in accordance to the laws and rules. When negotiations are taking place, it needs to be ensured, anti-discriminatory laws are acknowledged. As a consequence, the employees are able to express their ideas and viewpoints in an adequate manner. Therefore, formulation of anti-discriminatory laws is one of important measures to bring about improvements in negotiation skills.

Formation of Constructive Viewpoints

Formation of constructive viewpoints is regarded to be of utmost significance in the implementation of

ISSN 2076-9202

negotiation skills. The members need to work in co-ordination with each other in the implementation of job duties. They need to ensure, they do not possess any negative feelings in terms of any factors of the organizations and the individuals with whom they are dealing with. When they form constructive viewpoints, they will be able to develop motivation towards the implementation of tasks and activities. As a result of formation of constructive viewpoints, the individuals will augment their problem-solving skills. They will provide solutions to the problems in an adequate manner. The problems will be prevented from assuming a major form and from giving rise to impediments within the course of implementation of job duties. Therefore, it can be stated, formation of constructive viewpoints is a significant measure to bring about improvements in negotiation skills.

Generation of Information regarding Goals and Objectives

All the members of the organization, irrespective of their job positions in the hierarchy need to be informative in terms of organizational goals and objectives. These are, implementing ways to augment productivity and profitability; being well-versed in terms of modern, scientific and innovative methods; generating information in terms of customer needs and requirements; leading to up-gradation of infrastructure, amenities and facilities; organizing seminars and workshops; leading to up-gradation of training and development programs; augmenting knowledge, skills and abilities; augmenting professional traits; forming cordial and sociable terms and relationships with others and exploring other possibilities to enhance one's career prospects. The up-gradation of negotiation skills will enable the individuals to achieve the desired goals and objectives. Furthermore, they will be able to overcome impediments. Therefore, generation of information regarding goals and objectives is a vital measure to bring about improvements in negotiation skills.

Being Informative in terms of Methods and Approaches

The job duties are put into operation by all the members in accordance to the methods and approaches. Hence, throughout the job duties of all the individuals, they need to augment their knowledge and understanding in terms of methods and approaches. The utilization of modern, scientific and innovative methods will enable the individuals to put into operation the job duties in a well-ordered manner. Furthermore, they will understand that how they need to get engaged in negotiations in an effective manner. It is apparently understood, when the members will be well-equipped in terms of strategies of putting into operation the job duties, they will ensure, they speak in terms of meaningful aspects in implementing negotiations. The up-gradation of negotiation skills will enable the individuals to augment their knowledge, skills and abilities. Therefore, being informative in terms of methods and approaches is a crucial measure to bring about improvements in negotiation skills.

Augmenting Professionalism

All the members need to be professional in their conduct. In augmenting professionalism, there are various aspects that need to be taken into account by the individuals. These are, being well-versed in terms of job duties and responsibilities; being well-versed in terms of modern, scientific and innovative methods;

ISSN 2076-9202

making wise and productive decisions; implementing time management skills; coping with psychological problems of anger, stress, anxiety and frustration in an effective manner; forming positive viewpoints in terms of various aspects of the organizations and individuals; possessing the abilities to work under stress; augmenting knowledge, skills and abilities; forming cordial and sociable terms and relationships with others and discovering the opportunities to enhance one's career prospects. The up-gradation of negotiation skills will enable the individuals to augment their awareness, talents and capabilities. Furthermore, the individuals will be able to overcome weaknesses and put in efforts to their best abilities. Therefore, augmenting professionalism is an eminent measure to bring about improvements in negotiation skills.

Honing Listening Skills

When the individuals are exchanging ideas and viewpoints and imparting knowledge in terms of various aspects, they need to listen to each other. When negotiations are to take place, it is of utmost significance to hone listening skills. The listening skills are required to take place in an appropriate manner. The individuals need to ensure they maintain eye contact and pleasant facial expressions. Furthermore, they need to treat each other with respect and courtesy. The traits of morality and ethics need to be reinforced within the course of implementation of listening skills. Hence, it can be stated, the honing of listening skills would facilitate the implementation of negotiation skills in a straightforward and righteous manner. Furthermore, the individuals need to make provision of accurate information. One of the important aspects that needs to be taken into account is, the individuals should not let the conflicting situations and disagreements to assume a major form. The interaction needs to take place in a peaceful way. Therefore, honing listening skills is a meaningful measure to bring about improvements in negotiation skills.

Formation of Cordial and Sociable Terms and Relationships with Others

In order to do well in their job duties, achieve desired goals, cope up with various types of problems and lead to up-gradation of the overall structure of the organizations, the individuals need to form cordial and sociable terms and relationships with others. They are required to develop mutual understanding and work in co-ordination with each other. When the individuals are exchanging ideas and viewpoints and imparting knowledge in terms of various aspects, they need to treat each other with respect and courtesy. As a consequence, the individuals develop motivation and feel comfortable within the working environment. When the terms and relationships among individuals are amiable, they are able to put into operation the communication processes in an adequate manner. Furthermore, negotiation skills will also be honed by the members of the organizations. The negotiations will be carried out successfully between the union and the management. Therefore, among superiors and subordinates and among colleagues, formation of cordial and sociable terms and relationships with others is a useful measure to bring about improvements in negotiation skills.

Exploring Other Possibilities

The unions have demands in terms of different factors. When the union is not satisfied with certain aspects, they put into operation negotiation skills. The management and the union may not possess the same

ISSN 2076-9202

viewpoints. But when there are occurrence of issues in terms of various aspects, they are required to put into operation negotiation skills in an adequate manner. In some cases, they may come to a deal in a peaceful manner. Whereas, in other cases, when the situations are stressful, they are required to explore other possibilities. The other possibilities are the ones, which would enable the management and the union to generate the feeling of contentment. Furthermore, they will be able to put into operation the job duties in an effectual manner and generate the desired outcomes (Essential Negotiation Skills, 2021). Hence, negotiation skills are regarded as worthwhile in augmenting information in terms of other possibilities. Therefore, exploring other possibilities is a measure to bring about improvements in negotiation skills, which has proven to be efficacious in incurring the feeling of job satisfaction.

Possessing Inclination to Concede

Negotiations are not planned. These take place when there is a need. In the implementation of negotiation processes, the management and union are required to concede. Conceding is referred to accepting, admitting, and allowing. The management and union are required to understand each other's needs and requirements. For example, in industries and factories, when the workforce is engaged in hazardous jobs and are required to work with machines and tools, the management needs to be aware of their needs and requirements. In other words, the management needs to make sure, the workforce are able to concentrate on their job duties in a well-organized manner. The workforce needs to be given proper training in terms of utilization of machines and tools. The salary, incentives, reimbursements, workers compensation, tools, machines, equipment, materials and so forth are the factors which are required to be in a satisfactory condition. On the other hand, the union needs to abide by the laws and rules and should not put forward their demands, which cannot be fulfilled in a manageable manner. Therefore, possessing inclination to concede is a measure to bring about improvements in negotiation skills, which has proven to be advantageous to both the management and the union.

Conclusion

In the professional lives of the individuals, they need to put into operation negotiation skills. In the implementation of these skills, the individuals are required to augment their knowledge in terms of various aspects, i.e. persuading, convincing, influencing, co-operating and compromising. Stages of negotiation are, preparation, discussion, clarification of goals, negotiate towards a win-win outcome, agreement, and implementation of action. Measures to bring about improvements in negotiations are, implementation of effective communication processes, formulation of anti-discriminatory laws, formation of constructive viewpoints, generation of information regarding goals and objectives, being informative in terms of methods and approaches, augmenting professionalism, honing listening skills, formation of cordial and sociable terms and relationships with others, exploring other possibilities and possessing inclination to concede. Finally, it can be stated, when negotiation skills will take place in an effective manner, the management and union will contribute significantly in generating the desired outcomes.

Bibliography

ISSN 2076-9202

Essential Negotiation Skills. (2021). Retrieved December 17, 2021 mindtools.com

Miller, K. (2021). 6 Negotiation Skills all Professionals can benefit from. Harvard Business School Online. Retrieved December 17, 2021 from online.hbs.edu

Negotiation Skills: Definitions, Benefits and Examples. (2021). Indeed Career Guide. Retrieved December 17, 2021 from in.indeed.com

Shonk, K. (2021). Top 10 Negotiation Skills you must learn to Succeed. Program on Negotiation. Harvard Law School. Retrieved December 17, 2021 from pon.harvard.edu

What is Negotiation? (2021). Retrieved December 17, 2021 from skillsyouneed.com

ISSN 2076-9202

ECONOMIC FACTORS AND CO_2 EMISSIONS IN EMERGING ECONOMIES

Nguyen Thi Le Ha[1,3], Tran Mai Ngan[2,3]

[1,2] School of Economics, Finance and Accounting, International University, Ho Chi Minh City, Vietnam

[3]Vietnam National University, Ho Chi Minh City, Vietnam

Abstract

The present study's aim is to design a research model of the effect of economic factors including gross domestic product, trade liberalization, foreign direct investment, and financial development on carbon dioxide emissions. Data about 110 emerging economies in the period from 2007 and 2022 will be collected to examine the association between economic factors and carbon dioxide emissions. The pooled OLS, fixed effects model, random effects model, the quantitative approach, particularly correlational research will be employed to examine the research model. Based on the research findings, recommendations will be made to lower emissions in these emerging economies in the direction of sustainable growth.

Keywords: CO_2 Emissions, Financial Development, Economic Growth, Environment, FDI, Emerging Economies.

Introduction

Background of the Study

Global warming is a negative climate issue that many people are concerned about today, which raises the planet's surface temperature on average. Because of environmental degradation, environmental issues have gained more attention in the modern era, particularly in the developing economies. Environmental degradation has emerged as one of the biggest threats of concern to the world due to the accumulation of greenhouse effect in the atmosphere (Balint, 2017). Natural processes that influence climate change and create a polluted atmosphere are the consequences of excessive use and exploitation of environmental components, degradation, depletion of resources, which are frequently linked to these changes.

Fouquet (2016) and Urry (2015), however, contend that the primary driver of climate change is the rise in human activity brought on by industrialization, the world population, and the need to adapt to these changes. Furthermore, and use changes due to population development, fossil fuel burning, and deforestation for commercial and agricultural interests are only a few examples of human activities that are substantially increasing greenhouse gas emissions. Rising CO2 emissions continues to increase even when industrialization and modernization contribute to shaping life; promoting commodity production towards concentration, large scale, and application of high technology; promoting stable and sustainable economic growth. As stated by Peter (2019), the fundamental causes of global climate change are modifications to large-scale weather shocks and rising ecological footprints, primarily from methane and carbon dioxide. Not

ISSN 2076-9202

much of an effect on the ecosystem will occur if the CO2 content is within permitted bounds. Nevertheless, if the CO2 concentration rises above the permitted level, the greenhouse effect's primary cause will be felt in the atmosphere and worldwide climate (Khien, 2022). Consequently, juggling the demands of economic expansion and environmental preservation will become increasingly challenging for policymakers.

Rationales

Environmental protection has become a shared objective of all nations because of the widespread and serious concern that global warming caused by CO2 emissions is in developing nations (Danish et al. 2018). Factors affecting CO2 emissions include financial development, has been the subject of numerous research in recent years, and these studies have produced a variety of conclusions, but they have not all come to the same conclusion. Numerous research has shown that financial development decreases ecological footprint, protecting the environment (Shahbaz et al. 2016). Zhang (2011) highlights the usefulness of advanced institutions in lessening the strain on the environment. By encouraging and providing more environmentally friendly initiatives through research and development and by making investments in clean technology easier, financial development enhances the living environment. For example, boosting investment in renewable energy contributes to a smaller ecological imprint and is more environmentally beneficial. In a similar vein, financial development can raise economic efficiency through lowering financial expenses and capital risks. However, several studies have discovered that financial development accelerates environmental degradation (Tang and Tan 2014). This helps investors broaden their business horizons and establish new factories and machinery, which raises the concentration of CO2 gas and degrades environmental quality. It also creates favorable conditions for credit facilities to purchase mechanical machinery, electrical equipment, cars, and houses (Danish et al., 2018; Zhang and Zhang 2018).

Trade liberalization, according to environmentalists and trade economists, can significantly contribute to the favorable conditions needed to enhance the environment through resource efficiency and steady growth. They contend that rational allocation of resources, resolving social imperfections, improving the localization rate, and meeting origin requirements are further ways that liberalized trade and environmental policies will result in advantages. Not only will trade liberalization generate income, but it will also raise living standards and lessen poverty, which in many developing nations is seen to be a major cause of the ecological footprint. Depending on income levels, different countries have different amounts of trade openness to environmental degradation. This can be caused by variations in economic structures, policies, and levels of economic openness (Forslid and Okubo, 2014; Wiebe et al., 2012). In the top 10 developing nations (Mexico, Thailand, India, Turkey, South Korea, Brazil, Indonesia, China, South Africa, and Malaysia) that release the most CO2, Ertugrul et al. (2016) examined the connection between CO2 emissions and trade openness between 1971 and 2011 and found that trade openness was the factor that most influenced long-term CO2 emissions in each nation.

Similarly, the constant need for economic expansion along with progress and industrialization and modernization in even developing countries leads to environmental degradation. Phimphanthavong (2013) believes that the economic development of each country is affected by many factors that are potentially harmful to the environment, including issues in climate change, unsustainable resource exploitation, and environmental pollution. Therefore, carbon dioxide levels in the environment are rising sharply due to

ISSN 2076-9202

economic development, which is a burning problem that many countries are addressing. Recent research has examined the impact, considering the diversity of emission sources, foreign direct investment, trade openness, and economic growth on CO2 pollution. The interactions between economic growth, FDI, and greenhouse gas emissions in the BRICS countries (Brazil, Russia, India, China, and South Africa) show that economic growth is directly impacted by FDI but not long-term impact short-term impact on CO2 pollution (Zakarya et al., 2015). Meanwhile, the main factors that increase carbon dioxide in the long run include net foreign direct investment (FDI) inflows and gross domestic product (GDP). In addition, financial development can invest in R&D and technological innovation to positively impact environmental quality through strong mobilization of FDI capital flows, growth in the size of the stock market and banking activities.

Research Objectives

The main purpose of this research is develop a conceptual framework for determing how CO2 emissions in the study sample nations are affected by the following economic factors: (i) gross domestic product (GDP); (ii) trade liberalization; (iii) foreign direct investment (FDI); and (iv) financial development. The study also contrasts the impacts of the aforementioned indices on ecological footprint between nations at the same time. The study is conducted with an eye toward the problems of pollution and environmental degradation, which are major concerns for emerging nations right now. Given the dangers that urbanization, industry, and climate change pose to the ecological environment of our nation, this position becomes even more critical.

Literature Review

Environment Kuznets Curve (EKC) Theory

Theoretical Framework

The Environment Kuznets Curve (EKC) theory looks at the connection between economic growth and environmental quality. It was derived from Kuznets' 1955 inverted U-shaped hypothesis. As a result of increased environmental degradation, the theory explains why CO2 emissions increase during development and industrialization. However, after a certain point in economic development, society starts to value the environment more, people start to have a better relationship with it, regulatory agencies become more effective, and pollution levels naturally decline. Consequently, a direct correlation between environmental pressure and economic development level is proposed by the EKC hypothesis.

Empirical Evidence

Studies on this subject include both theoretical and empirical research (Stern, 2004; Kaika and Zervas, 2013; and Dinda, 2004). Grossman and Krueger (1995) demonstrated an inverse U-shaped association between environmental pollutants and per capita income based on their findings, and Panayotou (1995) called it the EKC theory. The empirical literature (Grossman and Krueger, 1995; Majeed, 2018) essentially verifies that EKC exists in underdeveloped nations. Numerous empirical research has demonstrated that the validity of the EKC hypothesis can change according on the country or countries under investigation (Mrabet and Alsamara, 2017; Moutinho et al., 2017; and Tiba and Omri, 2017). According to Saboori and Sulaiman (2013), disaggregated data supports the presence of the EKC hypothesis for Malaysia and provides significant evidence for its existence for Singapore and Thailand.

ISSN 2076-9202

Empirical research by Moghadam and Dehbashi (2018), which examines the impact of trade, environmental quality, and financial development in Iran, shows that financial development exacerbates environmental deterioration and refutes the EKC hypothesis for Iran. Additionally, Mahalik et al. (2017) , after research in Saudi Arabia, used a number of new variables, including capital, economic growth, and urbanization to test the link between energy demand and financial development for the years 1971–2011. They concluded that financial development ultimately raises energy demand, with capital and urbanization serving as the primary drivers.

Regarding the existence of the EKC theory, researchers are divided, nonetheless. Despite a very large number of studies testing the EKC hypothesis, there is little empirical evidence supporting the existence of the Kuznets curve. For instance, the EKC hypothesis is supported for Türkiye by Ozturk and Acaravci (2013) and Tutulmaz (2015). Baek (2015) discovers scant support for the EKC concept in Arctic nations. An inverted N-shaped causal curve is examined by Ajmi (2015), who finds evidence against the conventional EKC theory. Using econometric approaches and the environment of Sichuan province, China, Fan and Zheng (2013) did not find any evidence supporting the existence of the Kuznets hypothesis.

Most recently, researchers assessed the link between economic growth and atmospheric pollution using data covering 146 countries over the years 1990–2016 (Khan and Eggoh, 2020) based on the Panel Smooth Transition Regression (PSTR) model. The gathered information confirms that an environmental Kuznets curve exists. Aslanidis and Iranzo (2009), on the other hand, did not find any indication of EKC curves in 77 non-OECD countries between 1971 and 1997 when they used the PSTR approach.

Hypothesis Development

Many academics have turned their attention toward the link between CO2 emissions and socioeconomic difficulties in recent years. Some popular economic metrics in research are financial development (Bui, 2020), foreign direct investment (FDI) (Sarker et al., 2016), economic growth (Musolesi et al., 2010), and trade openness (Wang and Zhang, 2021).

International Trade and CO_2 Emissions

Many environmental economists have claimed the quality of environment was affected positively by the trade liberalization (Tsai, 1999). Taskin and Zaim (2001) also found that this relationship had a important impact based on evidence from more than 50 economics from 1970 to 1990. Changes in trade openness have been proven to have positive and negative effects on carbon dioxide emissions, according to Mahmood et al. (2019). More capital activity, the lowering of trade barriers and the liberalization of capital regulation can all be beneficial to the economy. Conversely, others argue that trade liberalization harms the environment (Abler et al., 1999; Suri and Chapman, 1998). International commerce has led to a worsening of environmental deterioration in China, as demonstrated by Jun et al. (2020). Furthermore, according to recent research (Wang and Zhang, 2021), Emission concentrations in lower-middle-income countries are likely to increase because of trade liberalization, while in middle- and high-income countries have not impact discernibly on them. Nasir and Ur Rehman (2011) find that trade openness has reduced Pakistan's carbon emissions over time. They also found that the increase in CO2 emissions was due to an increase in trade openness by employing a vector error correction model (VECM). Fully modified ordinary least squares (FMOLS) model, panel dynamic ordinary least squares (PDOLS), and panel vector error correction model

ISSN 2076-9202

(PVECM) have all been used to demonstrate this (Farhani et al., 2014b).

H1: Trade openness positively influences CO_2 emissions.

Foreign Direct Investment (FDI) and CO_2 Emissions

According to certain research, FDI may increase CO2 pollution (Liu et al., 2017). Kivyiro and Arminen (2014) examined time series for six nations in sub-Saharan Africa during the period of 1971-2009 and found that FDI and CO2 emissions had a positive association. Seker et al. (2015) investigated how FDI affected on per capita carbon emissions in Turkey from 1974 to 2010 using the ARDL model. Based on that experiment, Kivyiro and Arminen (2014) argued that CO2 emissions received a small but positive impact from FDI in the long run. The pollution-haven theory for foreign direct investment in Bangladesh between 1978 and 2010 was confirmed by Sarker et al. (2016) in that country. More recently, To et al. (2019) found that FDI resulted in environmental damage in developing Asian economics between 1980 and 2016. According to Zarsky (1999) and Asghari (2013), when foreign companies use cleaner technologies in accordance with environmental protection laws and support research and development of energy-efficient technology, the consequence is ecological conditions will be higher. According to pollution-halo theory, increasing FDI inflows promote systematic environmental management systems (EMS) and sophisticated energy-efficiency technologies. Some researchers such as Solarin et al. (2018) showed that FDI raise greenhouse gas effect in economies with poor institutional frameworks, insufficient infrastructure, and lax environmental protection laws. As a result, they realized that this strong correlation, which maintains that FDI decreases ecosystem and boosts investment in highly polluting sectors.

H2: FDI positively impacts CO_2 emissions.

Gross Domestic Product (GDP) and CO_2 Emissions

When discussing GDP, the impact of economic growth on environmental quality is visualized as a comprehensive overview (Mardani et al., 2019). The findings showed that policy choices to lower emissions by placing restrictions on economic. Due to the two-way causal relationship, possible emissions reductions will have a adverse effect on GDP because CO2 emissions are encouraged to either a greater or lower level based on whether the rate of economic development increases or drops. Similarly, Fan et al. (2006) used the STIRPAT model to examine the effect of wealth, population, and technique on the overall CO2 pollution of nations at various stages of wealth during the years 1975-2000. According to their primary findings, the percentage of the population's age distribution between 15 and 64 provides a minor effect on greenhouse gas emissions globally, whereas GDP has the biggest effect. The percentage of the population between the ages of 15 and 64 has a favorable effect at lower earnings rates but a negative one at greater levels of wealth on the overall CO2 emissions of those countries. Shahbaz et al. (2013) looked at Indonesia's economic growth in relation to CO2 emissions between 1975 and 2011. According to empirical research, economic expansion raised CO2 emissions. The empirical results of Cederborg and Snöbohm (2016) indicated in fact a correlation of environment quality and GDP. Rising emission levels of carbon dioxide are assumed to associate positively with rising economic growth because of this positive relationship. After examining income levels and carbon pollution of 137 nations over a 21-year period, Tucker (1995) demonstrated a substantial link between GDP and carbon dioxide releases, which is a particularly prominent greenhouse gas (GHG) that contributes to climate change. Selden and Song (1994) pointed out that there is a positive

ISSN 2076-9202

correlation between rising GDP and rising CO2 emissions, which imply environmental contamination.

H3: Gross domestic product influences CO_2 emissions positively.

Financial Development and CO_2 Emissions

The groundbreaking studies of Aufderheide & Rich (1988) and Schmidheiny & Zorraquin (1998) marked the beginning of empirical study on the interaction between financial development and the environment. According to Aufderheide & Rich (1988) contend that the World Bank's financing structure frequently raises significant environmental issues by ignoring how its loans affect the environment, therefore, multilateral banks have a significant impact on environmental quality. Financial organizations frequently prioritize short-term objectives while ignoring related environmental hazards, which leads to increased resource exploitation (Schmidheiny & Zorraquin, 1998). Empirical research shows that financial development and ecological footprint are positively correlated. According to Sehrawat et al.'s (2015) used ARDL and VECM to investigate how financial development affect the ecological footprint in India and found that it raises the pollution. Shahbaz et al. (2015) also had similar results but used a different method are ARDL and the Bayer Hanck cointegration test. Xing et al. (2017) employed ARDL to test the impact of financial development on China's environment quality and found that it reduces CO2 pollution. Studies by Zakaria & Bibi (2019), Ganda (2019), and Bloach et al. (2019) claim that finacial development raises carbon emissions by offering credit options that incentivize consumers to purchase environmentally harmful vehicles and equipment. Moreover, Tamazian and Bhaskara Rao (2010) used a dynamic GMM and a random effect model to investigate the importance of financial development in influencing CO2 emissions in 24 developing countries. They discovered that financial development enhances the ecosystem.

H4: Financial development positively affects CO_2 emissions.

Research Methodology

Sample and Data Collection

To evaluate the impact of economic variables on ecological footprint, this research processes data using STATA for regression analysis and adopts a quantitative research style. The panel data of (i) CO2 emissions (CO2), (ii) gross domestic product (GDP), (iii) foreign direct investment (FDI), (iv) trade openness (TO), and (v) financial development (FD) are taken over the time frame period between 2007 and 2022 to assess how economic variables affect emissions of greenhouse gases. The dependent variables were taken from the Our World In Data (OWID), Global Carbon Budget, and Population based on various sources website, while the independent variables were extracted from many data sources, but mainly from the World Development Indicators (WDI). The study aimed to ascertain the link between economic indices and CO2 pollution by collecting 110 observations over a total sample of 110 developing countries.

Econometric Model

To assess empirically how economic factors affect CO2 emissions in transitional regions, this paper is based on study models by Majeed and Mazhar (2019), Lee (2013), and Omri et al. (2014, 2015). Equation (1) is used to investigate how trade liberalization, the growth of the financial sector, gross domestic product, and foreign direct investment affect pollution. The current study employs CO2 emissions as a comprehensive estimation of ecological damage and adopts the traditional empirical model. The analysis of the econometric model is as follows:

ISSN 2076-9202

$$CO2_{it} = \beta_0 + \beta_1 TO_{it} + \beta_2 FDI_{it} + \beta_3 GDP_{it} + \beta_4 FD_{it} + v_{it} + \mu_{it} + \varepsilon_{it} \quad (1)$$

Where, $CO2_{it}$ shows as the CO2 emissions per capita, TO_{it} measures the trade liberalization, FDI_{it} measures the foreign direct investment, GDP_{it} represents the gross domestic product per capita, and FD_{it} represents the financial development. The parameter β_0 shows the intercept term. The parameter β_j estimates The control variable slope coefficients (where, j = 1, …, 4). The term v_{it} shows the country specific unobservable effects. The term μ_{it} is denoted as the temporal effects. The final term ε_{it} represents the error term. The index i = 1, …, 110 is the cross sections, while the index t = 1, …, 15 is the time covered for empirical analysis.

Variable Measurement

The following table presents a detailed description of all variables included in the baseline regression and Hausman tests on the relationship between economic driver variables and greenhouse gas.

Table 1. Variable Measurement

Variables	Variable Measurement	Sources
$CO2_{it}$	CO_2 emissions in tons per capita	Our World In Data (OWID), Global Carbon Budget (2023); Population based on various sources (2023)
TO_{it}	Trade openness (% of GDP)	World Bank national accounts data, and OECD National Accounts data files.
FDI_{it}	Foreign direct investment, net inflows (% of GDP)	International Monetary Fund, International Financial Statistics and Balance of Payments databases, World Bank, International Debt Statistics, and World Bank and OECD GDP estimates.
GDP_{it}	Gross domestic product per capita (current US$)	World Bank national accounts data, and OECD National Accounts data files.
FD_{it}	Domestic credit to private sector (% of GDP)	International Monetary Fund, International Financial Statistics and data files, and World Bank and OECD GDP estimates.

Data Process and Analysis

This study employs a variety of approaches to examine the impact of economic considerations on greenhouse gas to identify which strategy produces biased or nonbiassed results, which method combines all-biased and unbiased results, and which method produces constant outcomes. Three models are thus considered: the pooled ordinary least squares (OLS), fixed effects model, and random effects model for estimation purposes.

Even in the case where the residual errors of the fitted model exhibit heteroskedasticity, the Pooled OLS regression model yields objective estimates of the population values. Furthermore, the fixed effect

ISSN 2076-9202

model comes in handy when unobserved individual-specific features that could have a correlation with the independent variables are a worry. It might lessen bias resulting from cross-sectional dependence and enable the estimate of within-individual variance. In contrast to fixed effect models, random effects models have at least two significant advantages: The potential to estimate shrunken residuals; and the potential to utilize random coefficient models to account for the efficacy of different schools.

Conclusion

Humans produce great amounts of material prosperity, but they also produce enormous amounts of pollutants and greenhouse gases that seriously damage the ecosystem and accelerate climate change. The current study attempts to develop a research framework for discovering the relationship between ecological footprint and economic indicators, especially the variables economic growth, financial development, trade openness, and FDI. To reach the study objective, a large panel data on 110 countries covering the period from 2007 to 2022 will be gathered. The pooled OLS, fixed effects, and random fixed effects models along with Hausman test and GLS method will be employed to determine how economic indicators affect carbon emissions in emerging economies.

References

Ajmi, A. N., Hammoudeh, S., Nguyen, D. K., & Sato, J. R. (2015). On the relationships between CO2 emissions, energy consumption and income: the importance of time variation. Energy Economics, 49, 629-638.

Aller, C., Ductor, L., Herrerias, M.J. (2015), The world trade network and the environment. Energy Economics, 52, 55-68.

Al-Mulali, U., Tang, C.F. (2013), Investigating the validity of pollution haven hypothesis in the gulf cooperation council (GCC) countries. Energy Policy, 60, 813-819.

Asghari, M. (2013). Does FDI promote MENA region‟s environment quality? Pollution halo or pollution haven hypothesis. International Journal of Scientific Research in Environmental Sciences, 1(6), 92-100

Aslanidis, N., & Iranzo, S. (2009). Environment and development: is there a Kuznets curve for CO2 emissions?. Applied Economics, 41(6), 803-810.

Atici, C. (2012), Carbon emissions, trade liberalization, and the Japan– ASEAN interaction: A group-wise examination. Journal of the Japanese and International Economies, 26(1), 167-178.

Baek, J. (2015). Environmental Kuznets curve for CO2 emissions: the case of Arctic countries. Energy Economics, 50, 13-17.

Baloch, M. A., Zhang, J., Iqbal, K., & Iqbal, Z. (2019). The effect of financial development on ecological footprint in BRI countries: Evidence from panel data estimation. Environmental Science and Pollution Research, 26(6), 6199-6208.

Beladi, H., Oladi, R. (2011), Does trade liberalization increase global pollution? Resource and Energy Economics, 33(1), 172-178.

Bui, D. T. (2020). Transmission channels between financial development and CO2 emissions: A global perspective. Heliyon, 6(11).

Chakraborty, D., Mukherjee, S. (2013), How do trade and investment flows affect environmental sustainability? Evidence from

ISSN 2076-9202

panel data. Environmental Development, 6, 34-47.

Danish, Wang, B., & Wang, Z. (2018). Imported technology and CO2 emission in China: Collecting evidence through bound testing and VECM approach. Renewable and Sustainable Energy Reviews, 82, 4204-4214.

Ertugrul, H.M., Cetin, M., Seker, F., Dogan, E. (2016), The impact of trade openness on global carbon dioxide emissions: Evidence from the top ten emitters among developing countries. Ecological Indicators, 67, 543-555.

Fan, C., & Zheng, X. (2013). An empirical study of the environmental Kuznets curve in Sichuan Province, China. Environment and Pollution, 2(3), 107.

Farhani, S., Mrizak, S., Chaibi, A., & Rault, C. (2014). The environmental Kuznets curve and sustainability: A panel data analysis. Energy Policy, 71, 189-198.

Forslid, R. and Okubo, T. (2014). Which firms are left in the periphery? Spatial sorting of heterogeneous firms with scale economies in transportation. Journal of Regional Science, 55, 51-65.

Ganda, F. (2019). The environmental impacts of financial development in OECD countries: A panel GMM approach. Environmental Science and Pollution Research, 26, 6758-6772.

Gani, A. (2013), The effect of trade and institutions on pollution in the Arab countries. Journal of International Trade Law and Policy, 12(2), 154-168.

Gill, F. L., Viswanathan, K. K., & Karim, M. Z. A. (2018). The critical review of the pollution haven hypothesis. International Journal of Energy Economics and Policy, 8(1), 167-174.

Guo, J., Zou, L.L., Wei, Y.M. (2010), Impact of inter-sectoral trade on national and global CO2 emissions: An empirical analysis of China and US. Energy Policy, 38(3), 1389-1397.

Haapanen, L., Tapio, P. (2016), Economic growth as phenomenon, institution and ideology: A qualitative content analysis of the 21st century growth critique. Journal of Cleaner Production, 112, Part 4, 3492-3503.

Honglei, C., Xiaorong, Z., Qiufeng, C. (2011), Export-oriented economy and environmental pollution in China: The empirical study by simultaneous equation model. Energy Procedia, 5, 884-889.

Hosseini, H.M., Kaneko, S. (2013), Can environmental quality spread through institutions? Energy Policy, 56, 312-321.

Ibrahim, M.H., Rizvi, S.A.R., Leal-Filho, W., Seixas, J. (2015), Emissions and trade in Southeast and East Asian countries: A panel co-integration analysis. International Journal of Climate Change Strategies and Management, 7(4): 460-475.

Jamel, L., & Maktouf, S. (2017). The nexus between economic growth, financial development, trade openness, and CO2 emissions in European countries. Cogent Economics & Finance, 5(1), 1341456.

Jebli, M.B., Youssef, S.B., Ozturk, I. (2016), Testing environmental Kuznets curve hypothesis: The role of renewable and non-renewable energy consumption and trade in OECD countries. Ecological Indicators, 60, 824-831.

Jun, W., Mahmood, H., & Zakaria, M. (2020). Impact of trade openness on environment in China. Journal of Business.

ISSN 2076-9202

Kaika, D., & Zervas, E. (2013). The Environmental Kuznets Curve (EKC) theory—-Part A: Concept, causes and the CO2 emissions case. Energy policy, 62, 1392-1402.

Khan, M., & Eggoh, J. (2021). Investigating the direct and indirect linkages between economic development and CO2 emissions: a PSTR analysis. Environmental Science and Pollution Research, 28(8), 10039-10052.

Kiuila, O. (2015), Interactions between trade and environmental policies in the czech republic. The Journal of International Trade and Economic Development, 24(7), 1014-1035.

Kivyiro, P., & Arminen, H. (2014). Carbon dioxide emissions, energy consumption, economic growth, and foreign direct investment: Causality analysis for Sub-Saharan Africa. Energy, 74, 595-606.

Lee, J. W. (2013). The contribution of foreign direct investment to clean energy use, carbon emissions and economic growth. Energy Policy, 55, 483–489.

López, L.A., Arce, G., Zafrilla, J.E. (2013), Parcelling virtual carbon in the pollution haven hypothesis. Energy Economics, 39, 177-186.

Lv, Z., & Li, S. (2021). How financial development affects CO2 emissions: A spatial econometric analysis. Journal of Environmental Management, 277, 111397.

Mahalik, M. K., Babu, M. S., Loganathan, N., & Shahbaz, M. (2017). Does financial development intensify energy consumption in Saudi Arabia?. Renewable and Sustainable Energy Reviews, 75, 1022-1034.

Mahmood, H., Maalel, N., & Zarrad, O. (2019). Trade openness and CO2 emissions: Evidence from Tunisia. Sustainability, 11 (12), 3295.

Majeed, M. T. (2018). Information and communication technology (ICT) and environmental sustainability in developed and developing countries. Pakistan Journal of Commerce and Social Sciences, 12(3), 758-783.

Majeed, M. T., & Mazhar, M. (2019). Financial development and ecological footprint: a global panel data analysis. Pakistan Journal of Commerce and Social Sciences (PJCSS), 13(2), 487-514.

Majeed, M. T., & Mumtaz, S. (2017). Happiness and environmental degradation: A global analysis. Pakistan Journal of Commerce and Social Sciences, 11(3), 753-772.

Mardani, A., Streimikiene, D., Cavallaro, F., Loganathan, N., & Khoshnoudi, M. (2019). Carbon dioxide (CO2) emissions and economic growth: A systematic review of two decades of research from 1995 to 2017. Science of the total environment, 649, 31-49.

Moghadam, H. E., & Dehbashi, V. (2018). The impact of financial development and trade on environmental quality in Iran. Empirical Economics, 54(4), 1777-1799.

Moutinho, V., Varum, C., & Madaleno, M. (2017). How economic growth affects emissions? An investigation of the environmental Kuznets curve in Portuguese and Spanish economic activity sectors. Energy Policy, 106, 326-344.

Mrabet, Z., & Alsamara, M. (2017). Testing the Kuznets Curve hypothesis for Qatar: A comparison between carbon dioxide and

ecological footprint. Renewable and Sustainable Energy Reviews, 70, 1366-1375.

Musolesi, A., Mazzanti, M., & Zoboli, R. (2010). A panel data heterogeneous Bayesian estimation of environmental Kuznets curves for CO2 emissions. Applied Economics, 42(18), 2275-2287.

Nasir, M., & Rehman, F. U. (2011). Environmental Kuznets curve for carbon emissions in Pakistan: an empirical investigation. Energy policy, 39(3), 1857-1864.

Neequaye, N.A., Oladi, R. (2015), Environment, growth, and FDI revisited. International Review of Economics and Finance, 39, 47-56.

Omri, A., Daly, S., Rault, C., & Chaibi, A. (2015). Financial development, environmental quality, trade and economic growth: What causes what in MENA countries. Energy Economics, 48, 242–252.

Omri, A., Nguyen, D. K., & Rault, C. (2014). Causal interactions between CO2 emissions, foreign direct investment, and economic growth: Evidence from dynamic simultaneous equation models. Economic Modelling, 42, 382–389.

Ozturk, I., & Acaravci, A. (2013). The long-run and causal analysis of energy, growth, openness and financial development on carbon emissions in Turkey. Energy economics, 36, 262-267.

Poelhekke, S., Ploeg, F. (2015), Green havens and pollution havens. The World Economy, 38(7), 1159-1178.

Ren, S., Yuan, B., Ma, X., Chen, X. (2014), International trade, FDI (foreign direct investment) and embodied CO2 emissions: A case study of Chinas industrial sectors. China Economic Review, 28, 123-134.

Saboori, B., & Sulaiman, J. (2013). CO2 emissions, energy consumption and economic growth in Association of Southeast Asian Nations (ASEAN) countries: A cointegration approach. Energy, 55, 813-822.

Sarker, S., Khan, A., & Mahmood, R. (2016). FDI, economic growth, energy consumption & environmental nexus in Bangladesh. Econ Appl Inform, 1, 33-44.

Sarker, S., Khan, A., & Mannan, M. M. (2016). Urban population and economic growth: South Asia perspective. European Journal of Government and Economics, 5(1), 64-75.

Sawhney, A., Rastogi, R. (2015), Is India specialising in polluting industries? Evidence from US-India bilateral trade. The World Economy, 38(2), 360-378.

Sehrawat, M., Giri, A. K., & Mohapatra, G. (2015). The impact of financial development, economic growth and energy consumption on environmental degradation. Management of Environmental Quality: An International Journal, 26(5), 666-682.

Seker, F., Ertugrul, H.M., Cetin, M. (2015), The impact of foreign direct investment on environmental quality: Abounds testing and causality analysis for Turkey. Renewable and Sustainable Energy Reviews, 52, 347-356.

Shahbaz, M., Hye, Q. M. A., Tiwari, A. K., & Leitao, N. C. (2013). Economic growth, energy consumption, financial development, international trade, and CO2 emissions in Indonesia. Renewable and Sustainable Energy Reviews, 25, 109–121.

Shahbaz, M., Jam, F. A., Bibi, S., & Loganathan, N. (2016). Multivariate Granger causality between CO2 emissions, energy

intensity and economic growth in Portugal: Evidence from cointegration and causality analysis. Technological and Economic Development of Economy, 22(1), 47-74.

Shahbaz, M., Mallick, H., Mahalik, M. K., & Loganathan, N. (2015). Does globalization impede environmental quality in India? Ecological Indicators, 52, 379-393.

Solarin, S. A., & Al-Mulali, U. (2018). Influence of foreign direct investment on indicators of environmental degradation. Environmental Science and Pollution Research, 25, 24845-24859.

Solarin, S. A., Al-Mulali, U., Gan, G. G. G., & Shahbaz, M. (2018). The impact of biomass energy consumption on pollution: Evidence from 80 developed and developing countries. Environmental Science and Pollution Research, 25(23), 22641-22657.

Tai, M.Y., Chao, C.C., Hu, S.W. (2015), Pollution, health and economic growth. The North American Journal of Economics and Finance, 32, 155-161.

Tamazian, A., & Rao, B. B. (2010). Do economic, financial and institutional developments matter for environmental degradation? Evidence from transitional economies. Energy economics, 32(1), 137-145.

Tan, H., Sun, A., Lau, H. (2013), CO2 embodiment in China–Australia trade: The drivers and implications. Energy Policy, 61, 1212-1220.

Tang, C. F., & Tan, B. W. (2014). The linkages among energy consumption, economic growth, relative price, foreign direct investment, and financial development in Malaysia. Quality & Quantity, 48, 781-797.

Tang, J.P. (2015), Pollution havens and the trade in toxic chemicals: Evidence from US trade flows. Ecological Economics, 112, 150-160.

Tiba, S., & Omri, A. (2017). Literature survey on the relationships between energy, environment and economic growth. Renewable and sustainable energy reviews, 69, 1129-1146.

To, A.H., Ha, D.T.T., Nguyen, H.M., & Vo, D.H. (2019). The impact of foreign direct investment on environment degradation: Evidence from emerging markets in Asia. International Journal of Environmental Research & Public Health, 16, 16-36.

Wiebe, K. S., Bruckner, M., Giljum, S. and Lutz, C. (2012). Calculating energy-related CO2 emissions embodied in international trade using a global input–output model. Economic Systems Research, 24(2), 113-139.

Xing, T., Jiang, Q., & Ma, X. (2017). To facilitate or curb? The role of financial development in China's carbon emissions reduction process: a novel approach. International Journal of Environmental Research and Public Health, 14(10), 12-22.

Zakaria, M., & Bibi, S. (2019). Financial development and environment in South Asia: The role of institutional quality. Environmental Science and Pollution Research, 26, 7926-7937.

Zakarya, G.Y., Mostefa, B., Abbes, S.M., Seghir, G.M. (2015), Factors affecting CO2 emissions in the BRICS countries: A panel data analysis. Procedia Economics and Finance, 26(Supplement C), 114-125.

Zhang, Y. J. (2011). The impact of financial development on carbon emissions: An empirical analysis in China. Energy Policy, 39(4), 2197-2203.

ISSN 2076-9202

Zhang, Y., & Zhang, S. (2018). The impacts of GDP, trade structure, exchange rate and FDI inflows on China's carbon emissions. Energy Policy, 120, 347-353.

ISSN 2076-9202

UNDERSTANDING THE SIGNIFICANCE OF ANALYTICAL SKILLS WITHIN ORGANIZATIONS

Dr. Radhika Kapur
Design thinker and Visiting Faculty at Delhi University, India

Abstract

Within the course of putting into operation, job duties in various types of organizations, the individuals are required to work on projects. The job duties related to projects require the individuals to focus upon honing of analytical skills. In the research projects, they are required to conduct the analysis of the data that is collected. Hence, the individuals need to put emphasis on up-gradation of analytical skills. They get engaged in training and development programs as well in order to lead to up-gradation of these skills. In some cases, there are occurrence of various types of problems as well. Hence, the individuals need to provide solutions to the problems in an effective manner. Acquiring an efficient understanding of the concepts and getting engaged in regular practice are the key aspects that enable the individuals to lead to up-gradation of these skills. When analysis is to be conducted of the alternatives available, then too these skills are put into operation by the individuals. The implementation of analytical skills will facilitate in the implementation of job duties in a well-ordered manner, meeting the organizational goals, meeting the expectations of the employers and carrying out the overall functioning of the organizations in an effective manner. Therefore, the significance of analytical skills can be understood within the course of putting into operation job duties within organizations. The main concepts that are taken into account in this research paper are, understanding the meaning and significance of analytical skills, measures which lead to up-gradation of analytical skills and benefits of analytical skills.

Keywords: Analytical Skills, Job Duties, Methods, Organizations, Procedures, Projects, Research

In various types of organizations, such as, production, manufacturing, services, educational institutions, financial institutions and so forth, the individuals are required to work on projects. In the projects, they are required to make use of analytical skills. These are the skills, which would lead to up-gradation of critical thinking and problem-solving skills. In the effective implementation of the analytical skills, the members are required to conduct the analysis of various aspects of the projects and assignments. The individuals are required to conduct the analysis of the areas, which need to be improved or in which changes need to be brought about (Doyle, 2020). When there are more than one alternative available, it is necessary to conduct the analysis of the alternatives. After the analysis is conducted, the individuals make use of the alternative, which is regarded as more efficacious and worthwhile. Within the course of implementation of job duties, the individuals need to put emphasis on up-gradation of analytical skills. Therefore, it can be stated, analytical skills need to be honed in order to carry out all job duties successfully.

ISSN 2076-9202

The honing of analytical skills is difficult. In some cases, the individuals feel vulnerable and apprehensive, when they are to put into operation these skills. But getting engaged in regular practice will enable the individuals to lead to up-gradation of these skills. For example, when the individuals are required to work on research projects, they collect data, which is quantitative or qualitative or mixed methods approach. After the data has been collected, it needs to be organized. The analysis is conducted of the organized data (White, 2021). The Statistical Package of Social Sciences (SPSS) is the software tool that is utilized to conduct the analysis of the data. The research studies have indicated that in some cases, the individuals do not feel comfortable with SPSS. But getting engaged in regular practice will enable the individuals to feel comfortable with the usage. When the employees are wholeheartedly committed towards the implementation of job duties, they will focus upon up-gradation of analytical skills. Therefore, it is understood on a comprehensive basis that analytical skills are regarded as indispensable to do well in one's job duties.

The analytical skills can be honed by working on oneself as well as through communicating with others. The communication processes takes place with the supervisors, employers and colleagues. When the individuals are working on research projects, it usually takes a time period of six months or more to complete them. It is apparently understood that individuals will have to communicate in terms of methods and procedures with supervisors, employers and colleagues. Hence, in the up-gradation of analytical skills, implementation of effective communication processes is regarded to be of utmost significance. The individuals need to provide solutions to the problems in an effective manner. There are occurrence of problems in a major or in a minor form. These need to be prevented from giving rise to impediments within the course of implementation of tasks and activities. The analytical skills will enable the members to do well in their jobs and provide solutions to the problems in an effective manner. Therefore, it is well-understood, implementation of effective communication processes and honing of problem-solving skills are significant measures which lead to up-gradation of analytical skills.

Understanding the Meaning and Significance of Analytical Skills

When the employees get recruited within the organizations, they are required to get enrolled in training and development programs. There is recruitment of well-qualified and experienced trainers, who would carry out the job duty of training the employees in an efficient manner. In these programs, they are imparted information in terms of various aspects of the organizations. Furthermore, they are guided in terms of the methods of putting into operation job duties in an effective manner. Within the course of implementation of job duties, when the members are required to augment information in terms of pioneering methods or analytical skills, in such cases as well, they get enrolled in training and development programs. The members of the organization are required to hone these skills throughout their jobs. The individuals need to ensure, when they are putting into operation these skills, they will not only enhance their career prospects, but will meet the expectations of their supervisors and employers. Therefore, the members of the organization are able to acquire an efficient understanding of the meaning and significance of analytical skills, when they contribute significantly in the implementation of job duties.

Within the course of implementation of job duties and responsibilities in various types of organizations,

ISSN 2076-9202

the members need to put emphasis on up-gradation of analytical skills. There are various tasks, which are carried out by the members, which enable them to put emphasis on analytical skills. The various tasks are, putting into practice project work; implementing decision making processes; preparing assignments and reports; bringing about improvements in various aspects of the organizations; conducting analysis of the data collected; bringing about improvements in infrastructure, amenities and facilities; honing one's knowledge, competencies and abilities; doing well in one's job duties; achieving organizational goals and leading to up-gradation of the overall structure of the organizations. The analytical skills would render an important contribution in the implementation of these tasks in a satisfactory manner. Therefore, the members of the organization are able to acquire an efficient understanding of the meaning and significance of analytical skills, when they prove to be favourable in the implementation of various tasks.

When the individuals are wholeheartedly determined to achieve organizational goals, they will put in efforts to their best abilities to hone analytical skills. The various organizational goals are, leading to an increase in productivity and profitability; satisfying customer demands; making use of modern, scientific and innovative methods; organizing seminars and workshops; leading to up-gradation of training and development programs; bringing about improvements in infrastructure, amenities and facilities; making wise and productive decisions; taking out sufficient amount of time for all tasks and activities; honing one's knowledge, competencies and abilities; doing well in one's job duties; coping with various types of problems in a well-organized manner; possessing the abilities to work under stress and leading to up-gradation of the overall structure of the organizations. The analytical skills would render an important contribution in enabling the individuals to achieve all the goals and objectives. Therefore, all the members of the organization are able to acquire an understanding of the meaning and significance of analytical skills, when they render an important contribution in the achievement of organizational goals.

Measures which Lead to Up-gradation of Analytical Skills

When the individuals get engaged in employment opportunities, it is apparently understood that they will aspire to hone their knowledge, competencies and abilities, do well in their job duties, achieve organizational goals and lead to up-gradation of the overall structure of the organizations. In order to achieve these goals and objectives, they need to focus on up-gradation of analytical skills (Analytical Skills, 2021). It is necessary to be informative in terms of the measures which would contribute in leading to up-gradation of these skills. When the individuals are wholeheartedly determined to do well in their jobs and generate the desired outcomes, they will put in efforts to their best abilities to lead to honing of these skills. The information in terms of these measures can be acquired through conducting research through various sources. Furthermore, when the members are to put into operation their job duties, then too they need to focus upon honing of these skills to achieve the desired goals. Therefore, it can be stated, throughout the job duties of the members, they need to be informative in terms of these measures. Measures which lead to up-gradation of analytical skills are stated as follows:

Being informative in terms of Job Duties and Responsibilities

All the members of the organization, irrespective of their job positions in the hierarchy need to be

ISSN 2076-9202

well-versed in terms of their job duties and responsibilities. As a consequence, they will be aware in terms of importance of analytical skills. As these skills need to be utilized in the implementation of job duties and responsibilities. When the individuals are required to work on projects, they need to put emphasis on honing of analytical skills. In the projects, they are required to make use of analytical skills. These are the skills, which would facilitate in doing well in their job duties and in generating the desired outcomes. The information in terms of job duties and responsibilities would enable the individuals to augment their knowledge and understanding in terms of skills, which would prove to be advantageous. The analytical skills are regarded as one of the indispensable skills, which the individuals need to hone in the implementation of the production processes, service organizations, projects, assignments, reports and so forth. Therefore, being informative in terms of job duties and responsibilities is regarded as one of the significant measures which lead to up-gradation of analytical skills.

Being Well-Equipped in terms of Methods and Approaches

In order to do well in one's job duties and to generate the desired outcomes, it is necessary to be well-equipped in terms of methods and approaches. In the present existence, with advancements taking place and with the advent of modernization and globalization, it is necessary to make use of modern, scientific and innovative methods. The up-gradation of analytical skills which would enable the individuals to make use of these methods and approaches in an efficacious manner. Analytical skills are the skills, which would facilitate in making use of these methods in the implementation of their job duties and in achieving the desired goals. The information in terms of methods and approaches would enable the individuals to augment their knowledge and understanding in terms of skills, which would prove to be useful. Hence, throughout the job duties of the members, they need to be informative in terms of methods and approaches. Therefore, being well-equipped in terms of methods and approaches is one of the important measures which lead to up-gradation of analytical skills.

Conducting Analysis of the Alternatives Available

In the effective implementation of the analytical skills, the members are required to conduct the analysis of the alternatives available. These are in case of various aspects of the projects and assignments. The individuals are required to conduct the analysis of the areas, which need to be improved or in which changes need to be brought about. When there are more than one alternative available, it is necessary to conduct the analysis of the alternatives. The reason being, the members are required to put into operation the alternative, which would prove to be suitable and useful on a comprehensive basis. After the analysis is conducted, the individuals make use of the alternative, which is regarded as more efficacious and worthwhile. Within the course of implementation of job duties, the individuals need to put emphasis on up-gradation of analytical skills. Hence, it can be stated, analytical skills need to be honed in order to carry out all job duties successfully. Therefore, conducting analysis of the alternatives available is an indispensable measure which lead to up-gradation of analytical skills.

Getting Engaged in Regular Practice

ISSN 2076-9202

The honing of analytical skills is difficult. In some cases, the individuals feel vulnerable and apprehensive, when they are to put into operation these skills. But getting engaged in regular practice will enable the individuals to lead to up-gradation of these skills. When the individuals are required to conduct the analysis of the data collected in the research projects, in such cases, they may even have to analyse the data through the utilization of software couple of times or more. In this manner, they will hone their analytical skills by getting engaged in regular practice. In some cases, the individuals do not feel comfortable with the software packages, which are used to conduct an analysis of the data. But getting engaged in regular practice will enable the individuals to feel comfortable with the usage. When the employees are wholeheartedly committed towards the implementation of job duties, they will focus upon up-gradation of analytical skills. Therefore, it is well-understood that getting engaged in regular practice is a crucial measure which lead to up-gradation of analytical skills.

Implementation of Effective Communication Processes

The analytical skills can be honed by working on oneself as well as through communicating with others. The communication processes takes place with the supervisors, employers and colleagues. When the employees get recruited within organizations, they are required to go through training and development programs. In these programs, they are imparted with information in terms of job duties and responsibilities. Furthermore, information is also conveyed in terms of methods to hone analytical skills. This is particularly when these skills are an integral part of the job duties of the individuals. When the individuals are working on research projects, it usually takes a time period of three to six months or even more to complete them. It is apparently understood that individuals will have to communicate in terms of methods and procedures with supervisors, employers and colleagues. Hence, in the up-gradation of analytical skills, implementation of effective communication processes is regarded to be of utmost significance. Therefore, implementation of effective communication processes is a vital measure which lead to up-gradation of analytical skills.

Honing of Problem-Solving Skills

Within the course of implementation of job duties, there are occurrence of various types of problems. The individuals need to provide solutions to the problems in an effective manner. There are occurrence of problems in a major or in a minor form. The honing of analytical skills will enable the individuals to hone problem-solving skills. The problems need to be prevented from giving rise to impediments within the course of implementation of tasks and activities. The analytical skills will enable the members to do well in their jobs and provide solutions to the problems in a satisfactory manner. The problem-solving skills can be honed on one's own as well as through taking support and assistance from employers, supervisors and colleagues. In some cases, these skills are complicated. But when the employees develop motivation towards the implementation of job duties and generation of desired outcomes, they will hone problem-solving skills in a well-organized manner. Therefore, honing of problem-solving skills is a useful measure which lead to up-gradation of analytical skills.

Conducting Research through various Sources

ISSN 2076-9202

The job duties which are to be put into operation and they require analytical skills, in such cases, research is conducted, with the main aim of leading to up-gradation of analytical skills. When the individuals are wholeheartedly determined to do well in their jobs and generate the desired outcomes, they will put in efforts to their best abilities towards honing of analytical skills. Conducting research is a useful measure of leading to up-gradation of analytical skills. The information in terms of these measures can be acquired through conducting research through various sources. The various sources that are put into operation are, books, articles, reports, projects, other reading materials, technologies and internet. The internet is regarded as one of the prominent sources that would enable the individuals to generate information in terms of all subjects, concepts and factors. When the individuals are focused upon honing of analytical skills, they are required to make use of various sources. Therefore, conducting research through various sources is a meaningful measure which lead to up-gradation of analytical skills.

Making Wise and Productive Decisions

Decision making is regarded as an integral part of the professional lives of the individuals. The decision making processes need to be put into operation in a well-ordered and satisfactory manner. Within the course of implementation of these processes, the analysis is to be conducted of the alternatives available. After the analysis is conducted, the individuals need to make selection of the alternative, which is regarded as more efficacious and worthwhile. Within the course of implementation of job duties, the individuals need to put emphasis on making wise and productive decisions. The implementation of decision making processes in an effective manner lead to up-gradation of analytical skills. When analysis is conducted in terms of various aspects related to job duties, the individuals need to ensure, they make wise and productive decisions. The main point which needs to be taken into consideration is, the options need to be favourable to the individuals as well as the overall structure of the organizations. Therefore, making wise and productive decisions is a noteworthy measure which lead to up-gradation of analytical skills.

Augmenting Critical Thinking Skills

Within the course of implementation of job duties, the members are required to put emphasis on augmenting critical thinking skills. The critical thinking skills are the skills, which need to be honed throughout the job duties of the individuals. In order to carry out job duties successfully, the individuals need to put into practice logical and rational thinking. As a consequence, they will lead to up-gradation of analytical skills. Analytical skills are the ones, which would render an important contribution in leading to enhancement of critical thinking skills. In the effective implementation of the analytical skills, the members are required to conduct the analysis of various aspects of the projects and assignments. Hence, they need to put emphasis on reinforcement of critical thinking skills (Ariella, 2021). In order to do well in one's job duties and to generate the desired outcomes, the members of the organization need to focus on augmenting critical thinking skills. These in turn would lead to honing of analytical skills. Therefore, augmenting critical thinking skills is a measure which lead to up-gradation of analytical skills, which would prove to be beneficial in generating the desired outcomes.

ISSN 2076-9202

Honing Technical Skills

The usage of technologies is regarded as indispensable in not only augmenting information in terms of various aspects, but also in the implementation of job duties. The technical skills are the one's which would facilitate the utilization of various types of technologies. These are, computers, lap-tops, projectors, audio-visual aids, scanners, printers, photo-copiers, I pads and so forth. In order to carry out various types of job duties and responsibilities successfully, the individuals need to put into practice technical skills. When the individuals feel comfortable with the usage of technologies, they will render a significant contribution in honing analytical skills. The internet is regarded as one of the eminent sources that would enable the individuals to generate information in terms of all subjects, concepts and factors. When the individuals are focused upon honing of analytical skills, they are required to make use of technologies and internet. Therefore, honing technical skills is a measure which lead to up-gradation of analytical skills, which needs to be acknowledged by all the members throughout the implementation of job duties.

Benefits of Analytical Skills

The members are required to make use of analytical skills within the course of putting into operation various types of job duties and responsibilities. When the individuals are well-versed in terms of these, they are able to benefit in various ways (Analytical Thinking, n.d.). The benefits of analytical skills may be experienced in a major or in minor form. As a consequence, the mind-sets of the individuals will be stimulated and they will develop motivation towards the implementation of job duties. The benefits are acknowledged by all the members. As a consequence, they develop motivation towards putting into practice various types of job duties and incur the feeling of job satisfaction. The benefits prove to be favourable to the members as well as the overall structure of the organizations. The benefits of analytical skills are, facilitating implementation of job duties in a well-organized manner; promoting utilization of pioneering methods; promoting teamwork; leading to an increase in productivity and profitability; assisting in the achievement of organizational goals and leading to up-gradation of the overall structure of the organization. These are stated as follows:

Facilitating implementation of Job Duties in a Well-organized Manner

The analytical skills is regarded as one of the indispensable skills, which the individuals need to hone in the implementation of job duties. These are primarily utilized, when working on research projects. In conducting analysis of the data collected, these skills are regarded as efficacious. These ensure the implementation of job duties in a well-organized manner. When the individuals are required to work on projects, they need to put emphasis on honing of analytical skills. In the projects, they are required to make use of analytical skills. These are the skills, which would facilitate in doing well in their job duties and in generating the desired outcomes. The information in terms of job duties and responsibilities would enable the individuals to augment their knowledge and understanding in terms of skills, which would prove to be beneficial. Therefore, facilitating implementation of job duties in a well-organized manner is a benefit of analytical skills, which has proven to be beneficial to the members to a major extent.

ISSN 2076-9202

Promoting Utilization of Pioneering Methods

In order to put into operation the job duties in an efficient manner and achieve the desired goals, it is of utmost significance to make use of pioneering methods. When the individuals will be informative in terms of analytical skills, they will be able to promote the utilization of pioneering methods in an effectual manner. Within the course of utilization of pioneering methods, there are various aspects in terms of which the analysis is required to be conducted. In some cases, the individuals experience various types of problems and challenges within the course of putting into operation pioneering methods. But when they hone analytical skills, they will make use of these methods in an appropriate manner. Furthermore, the problems will be solved and job duties will get implemented in an efficient manner. Therefore, promoting utilization of pioneering methods is regarded as one of the significant benefits of analytical skills.

Promoting Teamwork

The teamwork is regarded as one of the most favourable aspects in all types of organizations. The up-gradation of analytical skills will enable the individuals to promote teamwork. On the other hand, when the individuals are determined to lead to up-gradation of analytical skills, they will encourage teamwork. The assignments and projects can be put into operation on an individual basis as well as in a team. The analytical skills can be honed on one's own as well as through taking help from team members. When the members are overwhelmed by various types of problems and challenges, they obtain help and support from team members. When the members will hone analytical skills, they will make use of them in promoting teamwork. Therefore, promoting teamwork is a meaningful benefit of analytical skills.

Leading to an increase in Productivity and Profitability

Leading to an increase in productivity and profitability is regarded as one of the primary goals of all members of the organizations. When the members are wholeheartedly determined towards leading to reinforcement of this task, they will pay attention towards implementation of all the factors, which would lead to an increase in productivity and profitability. When the members will hone analytical skills, they will make use of them in leading to an increase in production of goods and services. Furthermore, when marketing is carried out well, there will be an increase in profitability. Analytical skills are the skills, which would facilitate the implementation of job duties and generating the desired outcomes in a well-organized and satisfactory manner. The information in terms of job duties and responsibilities would enable the individuals to augment their knowledge and understanding in terms of skills, which would prove to be favourable on a comprehensive basis. Therefore, it can be stated, leading to an increase in productivity and profitability is a crucial benefit of analytical skills.

Assisting in the Achievement of Organizational Goals

In the training and development programs, when information is imparted to the individuals in terms of methods of honing analytical skills, this signifies that these are utilized in the implementation of job duties. The employees are made to recognise the meaning and significance of these skills. They understand that when they are wholeheartedly determined towards achieving various types of organizational goals, they

ISSN 2076-9202

need to put emphasis on leading to reinforcement of these skills. Furthermore, the supervisors and employers also encourage the members to up-grade these skills. These need to be up-graded throughout one's jobs. These skills are not only regarded as meaningful in the implementation of job duties, but these are also indispensable in the achievement of organizational goals. These are the skills, which would facilitate the implementation of job duties and generating the desired outcomes in a well-ordered and suitable manner. Therefore, assisting in the achievement of organizational goals is a vital benefit of analytical skills.

Leading to Up-gradation of the overall Structure of the Organization

Analytical skills are the skills, which are utilized in the implementation of job duties. These need to be up-graded throughout one's jobs. Within various types of employment settings, in production and services organizations, apart from augmenting information in terms of methods and approaches, the individuals need to pay attention towards up-gradation of analytical skills. These skills are not only regarded as meaningful in the implementation of job duties, but these are also indispensable in leading to up-gradation of the overall structure of the organization. When the members hone analytical skills, they will put into operation all the methods and strategies, which would contribute in leading to enhancement of the organizational structure. Furthermore, the individuals will make wise decisions, provide solutions to various types of problems and job duties will be put into operation in an efficient manner. Therefore, it can be stated, leading to up-gradation of the overall structure of the organization is an important benefit of analytical skills.

Conclusion

Analytical skills are the skills, which are utilized in the implementation of job duties in various types of organizations. These involve conducting an analysis of the alternatives and making selection of the most suitable one. Measures which lead to up-gradation of analytical skills are, being informative in terms of job duties and responsibilities, being well-equipped in terms of methods and approaches, conducting analysis of the alternatives available, getting engaged in regular practice, implementation of effective communication processes, honing of problem-solving skills, conducting research through various sources, making wise and productive decisions, augmenting critical thinking skills and honing technical skills. Benefits of analytical skills are, facilitating implementation of job duties in a well-organized manner; promoting utilization of pioneering methods; promoting teamwork; leading to an increase in productivity and profitability; assisting in the achievement of organizational goals and leading to up-gradation of the overall structure of the organization. Finally, it can be stated, analytical skills will enable the individuals to do well in their job duties, achieve organizational goals and carry out functioning of the overall structure of the organizations in an appropriate manner.

Bibliography

Analytical Skills: Definition, Tips and Examples. (2021). Indeed Career Guide. Retrieved December 18, 2021 from in.indeed.com

Analytical Thinking. (n.d.). Retrieved December 18, 2021 from csu.edu

Ariella, S. (2021). What are Analytical Skills? (Definition, Examples, and Resume Tips). Retrieved December 18, 2021 from

ISSN 2076-9202

zippia.com

Doyle, A. (2020). What are Analytical Skills? Retrieved December 18, 2021 from thebalancecareers.com

White, A. (2021). 6 Must-Have Analytical Skills for Your Resume. Retrieved December 18, 2021 from blog.mindvalley.com

ISSN 2076-9202

THE IMPACT OF ECONOMIC POLICY UNCERTAINTY ON BANK STABILITY AND THE MODERATING EFFECT OF OWNERSHIP STRUCTURE: EMPIRICAL EVIDENCE FROM CHINESE LISTED COMMERCIAL BANKS

Nga T. Trinh
School of Economics, Finance and Accounting
International University-Vietnam National University Ho Chi Minh City
Quarter 6, Linh Trung Ward, Thu Duc, Ho Chi Minh City, Vietnam

Truong Q. Vu
School of Economics, Finance and Accounting
International University-Vietnam National University Ho Chi Minh City
Quarter 6, Linh Trung Ward, Thu Duc, Ho Chi Minh City, Vietnam

Abstract

This research delves into the intricate relationship between Economic Policy Uncertainty (EPU) and the stability of Chinese-listed commercial banks during the period from 2018 to 2022. The study examines how the Chinese EPU index, derived from Huang and Luk (2020), impacts bank stability, considering the moderating effect of ownership structure. With a focus on 137 observations across 42 listed banks and the Random Effects Model (REM), the result reveals a notable positive correlation between Chinese EPU and bank stability. This finding diverges from prior research, possibly due to the tailored nature of the Chinese EPU index and the unique dynamics of the Chinese banking sector. The study also explores the moderating effects of state ownership, foreign ownership, and ownership concentration on the EPU-bank stability relationship. However, no significant moderating effects are observed, indicating a uniform regulatory environment across ownership structures. Noteworthy control variables such as liquidity, inflation rate, and bank size are found to significantly impact bank stability, providing nuanced insights into the complexities of banking operations amidst policy uncertainty. Despite contributing valuable insights, the study acknowledges limitations including data scope and study period, highlighting avenues for future research. Recommendations are offered for policymakers, bank managers, and researchers, aiming to inform strategic decision-making and guide future investigations into this critical area of study.

Keywords: Economic policy uncertainty, Bank stability, Chinese commercial bank, Ownership structure, State ownership, Foreign ownership, Ownership concentration

ISSN 2076-9202

JEL Classifications: G21, E51, E60

Corresponding author: Nga T. Trinh
Email: ttnga@hcmiu.edu.vn

1. Introduction

The banking sector plays a crucial role in economic development by influencing capital formation, credit creation, and promoting suitable industries (Bikker & Hu, 2002). Banks act as intermediaries between savers and borrowers, channeling funds toward productive investments. This process enables businesses to expand, infrastructure to develop, and individuals to pursue entrepreneurial ventures, creating jobs and boosting overall economic activity. Banks hold a vital position as middlemen, greatly contributing to national advancement through operations such as capital formation and credit extension.

China's banking system has significantly evolved, transitioning from a purely socialist model to one incorporating market economy characteristics (Zhang et al., 2012). This evolution supports China's shift to a high-quality development phase and optimization of its economic structure. However, Chinese banks have occasionally experienced poor performance. As reported by S&P Global Market Intelligence, by the end of the third quarter in 2022, the return on equity for Chinese banks had fallen to 9.32%, the lowest in over a decade, with total net profits decreasing by 11% compared to the previous year. This underperformance can be attributed to several factors, including the heavy reliance on interest income. In advanced economies, fee income can account for as much as 40% of a bank's total income, but in China, it is less than 15% (The International Banker, 2014). This dependence on interest income makes Chinese banks more susceptible to fluctuations in interest rates. To mitigate this issue, Chinese banks should diversify their portfolios and business lines.

China, the world's second-largest economy and a key player in global trade, has undergone numerous economic policy reforms, making it vulnerable to policy uncertainty shocks that significantly affect its macro economy and business cycles (Huang & Luk, 2020). The impact of economic policy uncertainty (EPU) varies across different sectors. For instance, while commodity futures companies may gain development opportunities from EPU (Liu, 2023), it negatively affects gross exports and complicates trade, especially during global crises like COVID-19 (Hu & Liu, 2021). EPU also undermines bank stability by increasing the cost and irreversibility of corporate investments, leading to reduced corporate investment and hindering banking credit growth (Meng et al., 2023). Higher EPU levels correlate with increased non-performing loans (NPL), as borrowers struggle to meet financial obligations, raising banking credit risk and threatening overall stability (Papadamou & Pitsilkas, 2023).

Ownership structure significantly shapes the impact of EPU on bank stability. State-owned banks often experience heightened negative effects from EPU due to operational inefficiencies and increased risk-taking under majority government control (Shirley et al., 1991; Shleifer & Vishny, 1997). However, these banks can mitigate risks through alternative funding sources and conservative banking approaches

ISSN 2076-9202

(Barth et al., 2000). Foreign ownership exacerbates the adverse impact of EPU on bank stability, with increased risk-taking by foreign banks in emerging economies (Chen et al., 2017). Conversely, some research suggests foreign ownership can enhance stability and reduce risks, particularly in liquidity (Le, 2021). Ownership concentration, where substantial shares are held by influential stakeholders, can worsen the impact of EPU on bank stability (Laeven & Levine, 2009), although studies in European countries suggest potential alleviation under proper supervision and shareholder protection (Marco & Fernández, 2008; Iannotta et al., 2007). Understanding these dynamics is crucial for policymakers and financial institutions to devise strategies that enhance resilience amid economic uncertainty.

The main goal of this research is to comprehend and analyze how EPU affects the stability of listed commercial banks in China and to examine the moderating role of ownership structure (state ownership, foreign ownership, and ownership concentration) in the impact of EPU on bank stability. The association between EPU and bank stability has been examined in several earlier studies, along with the impact of ownership structure on bank risk-taking. However, few studies have explored the moderating effect of ownership structure on the EPU's impact on bank stability. Additionally, previous studies have not reached concrete conclusions about how ownership structure affects banks' responses to EPU.

This study uses the sample of Chinese-listed commercial banks from 2018 to 2022 and the Chinese EPU index developed by Huang and Luk (2020), shedding light on recent economic developments in China's banking sector. It also considers various ownership structures, adding complexity to understanding banks' responses to economic policy uncertainty (EPU). Our study contributes to the literature in several ways. First, it contributes to the literature on bank stability by exploring the interaction between ownership structure and the influence of EPU on bank stability in China. Second, our research has some implications for policymakers and managers in the banking industry in setting ownership and governance strategies to achieve better management and enhance stability during economic and political uncertainties.

The remainder of this paper is structured as follows: Section 2 reviews the literature and develops hypotheses. Section 3 outlines the data and methodology. Section 4 presents and analyzes the empirical results. Finally, Section 5 provides the conclusions.

2. Literature Review

2.1. The Microeconomic Theories of Banking

2.1.1. Prospect Theory

The Prospect Theory, developed by Kahneman and Tversky (1979), offers a framework for understanding decision-making under uncertainty, particularly in banking. It highlights how banks' risk perceptions and reference points influence their credit risk decision-making behaviors. Key factors like loss aversion and risk perception play a mediating role in these decisions. Various studies have applied this theory to banking.

2.1.2. Theory of Bank Risk-Taking and Competition

ISSN 2076-9202

Nicolo and Boyd (2003) revisit the relationship between banking competition and banks' risk of failure, proposing that increased competition leads banks to choose riskier portfolios. This theory, influential among regulators, suggests a link between market concentration and bank riskiness, though empirical evidence is mixed. Subsequent studies have explored this theory further. Nicolo et al. (2006) examine models involving complex asset allocation decisions by banks. These studies underscore the need for ongoing research to fully grasp the theory's implications in the banking sector.

2.1.3. Financial Inclusion and Stability Theory

The Financial Inclusion and Stability Theory, proposed by Cihák et al. (2012), suggests that financial stability and inclusion may be interdependent. It posits that while rapid increases in credit inclusion can harm financial stability due to potential creditworthiness issues, inclusion in electronic payments, deposits, or insurance can enhance stability. Several studies have explored this theory. For instance, Cihák et al. (2021) review the literature indicating a mutual dependency between financial stability and inclusion. Han et al. (2013) provide empirical evidence showing that access to bank deposits and deposit growth can mitigate the adverse impacts of banking crises, supporting the theory. These studies underscore the importance of further research to fully understand the theory's implications in the banking sector.

2.2. The Agency Theory

The agency theory, developed by Jensen et al. (1976), is fundamental to understanding corporate governance, focusing on the conflicts of interest between shareholders (principals) and managers (agents). Effective governance mechanisms are crucial for addressing these agency problems. Ownership structure plays a significant role in this context, with different configurations impacting governance dynamics uniquely. The relationship between ownership structure and agency problems is influenced by contextual factors, including legal, institutional, and cultural environments. This comprehensive understanding necessitates considering the multifaceted nature of ownership configurations and their nuanced impacts on corporate governance.

2.3. Economic Policy Uncertainty and Bank Stability

Economic Policy Uncertainty (EPU) has multifaceted impacts on various sectors of the Chinese economy, including both positive and negative effects. However, the negative repercussions on bank stability are substantial. Studies indicate that EPU can make corporate investment usually costly and irreversible (Wang et al., 2014), leading to a reduction in corporate investment (Meng et al., 2023) and impending banking credit growth (Danisman et al., 2020; Ashraf, 2021). Elevated EPU correlates with an increase in non-performing loans (NPL) (Papadamou & Pitsilkas, 2023), compromising the stability of banks and increasing credit risk (Chi & Li, 2017). Additionally, the uncertainty surrounding economic policies negatively affects bank profitability, disrupting economic activities, reducing investment, and increasing transaction costs (Baker et al., 2016; Ozili, 2022). The interplay of these factors collectively contributes to the overall instability of the banking sector. Numerous studies consistently support the notion of a negative effect of EPU on bank stability, with findings indicating that EPU harms financial

ISSN 2076-9202

stability by distorting resource allocation efficiency and creating confusion in the Chinese banking industry (Desalegn et al., 2023; Zhang & Wang, 2023; Li, 2023). The impact is reflected in decreased market exposure, increased earnings opacity, and a significantly negative influence on bank stability, emphasizing the intricate relationship between economic policy uncertainty and the stability of banks in China.

Hypothesis 1: EPU negatively affects bank stability in China.

2.4. Ownership Structure and the Effect of Economic Policy Uncertainty on Bank Stability

2.4.1. State Ownership

State ownership in banks, where the government holds a majority stake, often results in underperformance due to non-profit objectives, managerial shortcomings, and operational inefficiencies (Andrews, 2005). These banks are prone to government interference, reducing performance incentives and leading to excessive risk-taking, lower profitability, and increased insolvency risk, as evidenced by studies from Iannotta et al. (2007) and Srairi (2013). Additionally, in environments with high EPU, such as in China and Tunisia, state-owned banks face heightened risks, including increased debt-to-asset ratios, solvency issues, and elevated credit risk, which further diminish their returns (Hamdi & Hassen, 2021). Overall, state ownership amplifies the negative impact of EPU on bank stability by intensifying inherent operational inefficiencies and risk-taking behaviors, making these banks particularly vulnerable to economic uncertainties.

Hypothesis 2.1.1: State ownership strengthens the negative effect of EPU on bank stability.

State ownership in banks, marked by a predominant government stake, may mitigate the impact of EPU on bank stability by enabling financial aid to prevent public crises, thus reducing default likelihood (Barth et al., 2000). Rooted in agency theory, state ownership promotes a risk-averse approach, with managers prioritizing safer investments or maintaining larger capital reserves over high-risk projects advocated by shareholders. Empirical evidence from emerging markets like Vietnam suggests that state ownership decreases bank risks and enhances stability (Nguyen, 2020; Hung & Quoc, 2020). Studies indicate that an optimal level of state ownership improves performance and efficiency and reduces default likelihood, potentially being more cost-effective than capital injections. Research by Yu et al. (2022) and Yuan and Sun (2023) shows that state-owned banks and enterprises in China exhibit more stable performance and a higher capacity to withstand economic policy uncertainty compared to private counterparts.

Hypothesis 2.1.2: State ownership weakens the negative effect of EPU on bank stability.

2.4.2. Foreign Ownership

Foreign ownership might intensify the negative impact of EPU on bank stability, as evidenced by various studies. Chen et al. (2017) find that foreign banks in emerging economies are prone to higher risk-taking compared to domestic banks due to factors such as informational disadvantages, agency problems, parent banks' financial conditions, and market disparities. Ismiyanti et al. (2018) highlight that

ISSN 2076-9202

foreign ownership heightens risk by complicating access to borrower information, leading to an increase in non-performing loans. Additionally, Karinna and Viverita (2019) note that foreign banks, including those in China, exhibit a greater propensity for risk compared to privately owned banks, emphasizing the need for regulatory measures to curb potential financial instability.

Hypothesis 2.2.1: Foreign ownership strengthens the negative effect of EPU on bank stability.

Foreign ownership in banks can mitigate the impact of EPU on bank stability, as evidenced by various studies. Le (2020) finds that foreign ownership in Vietnamese banks between 2006 and 2015 lowers overall bank risk, particularly in state-owned banks with higher foreign shares. Nguyen (2022) further supports this by showing that higher foreign ownership ratios correlate with reduced liquidity risk. Duc (2023) also confirms that foreign ownership reduces risk in Vietnamese commercial banks. Similarly, in Nepal, Sadaula and Hamal (2022) find that foreign-owned banks have lower non-performing loans compared to state-owned banks from 2012 to 2018. These findings collectively indicate that foreign ownership enhances bank stability and reduces risks amid economic policy uncertainty, suggesting benefits for banking systems considering reforms and fewer restrictions on foreign investments.

Hypothesis 2.2.2: Foreign ownership weakens the negative effect of EPU on bank stability.

2.4.3. Ownership Concentration

Ownership concentration might exacerbate the adverse effect of EPU on bank stability, as supported by various studies. Laeven and Levine (2009) demonstrate that influential stakeholders' ownership correlates with increased risk-taking by banks, aligning with theoretical expectations of equity holders encouraging risk. Large owners with substantial cash flows are empowered to influence managerial decisions toward heightened risk exposure. Haw et al. (2010) highlight the inferior performance and increased insolvency risk in banks under concentrated ownership. Rahim et al. (2019) find that elevated concentration is linked to financial system instability in Kenya, while Jabbouri et al. (2023) indicate a positive association between ownership concentration and nonperforming loans in MENA emerging stock markets.

Hypothesis 2.3.1: Ownership concentration strengthens the negative effect of EPU on bank stability.

Contrary to conventional views, ownership concentration may mitigate the negative impact of EPU on bank stability, as evidenced by studies focused on European countries. Marco and Fernández (2008) and Iannotta et al. (2007) find that higher ownership concentration correlates with improved loan quality, lower asset risk, and reduced insolvency risk in commercial banks. Shehzad et al. (2010) show that concentrated ownership significantly reduces a bank's non-performing loans ratio. This positive influence extends to capital adequacy, suggesting that with proper supervisory control and shareholder protection, ownership concentration can stabilize banks during economic uncertainties. Recent studies by Huang (2023) and Nguyen (2020) further support that higher ownership concentration enhances bank stability, as measured by Z-score, due to higher returns and capital levels.

ISSN 2076-9202

Hypothesis 2.3.2: Ownership concentration weakens the negative effect of EPU on bank stability.

3. Data and Methodology

3.1. Data Collection

To gather and analyze data for this study, a quantitative technique is employed. Relevant information may be found in the audited annual reports of banks and the Chinese EPU index is constructed by Huang & Luk (2020), both of which are open to the public. For all Chinese listed commercial banks, data are collected for 5 years from 2018 to 2022. The Thomson Reuters EIKON database is where bank-level data is taken, whereas the Chinese EPU index can be downloaded from the website https://economicpolicyuncertaintyinchina.weebly.com/ (Huang & Luk, 2020). The data on state ownership, foreign ownership, and ownership concentration are also hand-collected from audited annual reports. Banks with missing data or errors are excluded. The final sample has 137 bank-year observations.

3.2. Research Methodology

3.2.1. The Measurement of the Chinese EPU Index

Huang and Luk (2020) critique the methodology employed by Baker et al. (2016) to gauge economic policy uncertainty (EPU) in China, which relies on the South China Morning Post (SCMP), an English newspaper based in Hong Kong, to circumvent mainland China's media censorship. They identify several limitations associated with this approach, including potential bias towards Hong Kong-centric news, susceptibility to editorial policy changes, weak correlation with key Chinese macroeconomic indicators, and inability to capture daily fluctuations or policy-specific uncertainty. To address these shortcomings, Huang and Luk (2020) developed a new Chinese EPU index utilizing data from 10 mainland Chinese newspapers, ensuring a more comprehensive and timely representation of uncertainty. Their index undergoes rigorous testing to ensure independence from media censorship in China. Subsequent analysis using this new index reveals that unexpected increases in EPU lead to declines in Chinese equity returns, employment, and output, highlighting the impact of policy uncertainty on the Chinese economy, similar to observations in the U.S. economy.

In this study, the monthly uncertainty index from Huang and Luk (2020) is downloaded on https://economicpolicyuncertaintyinchina.weebly.com/, and the average method is applied to calculate the EPU index value.

EPU = Mean of twelve monthly Chinese EPU indexes.

3.2.2. Dependent variable

The dependent variable is measured using Z-score. The Z-score has been employed to measure bank stability (or bank risk-taking) in several studies (Diaconu & Oanea, 2014; Jiang et al., 2020; Nguyen, 2020; Pham et al., 2021; Zhang & Wang, 2023). The Z-score is a comprehensive indicator of bank stability that considers both profitability and capital. The lower the Z-score, the higher the chance of bank failure. Conversely, a higher Z-score means a lower insolvency risk and a higher stability level; thus, it signifies

ISSN 2076-9202

that a bank is less risky and more stable.

Following the empirical previous studies from Diaconu and Oanea (2014), Jiang et al. (2020), Nguyen (2020), and Pham et al. (2021), the Z-score is estimated as follows:

$$Z - score = \frac{ROA_{it} + \left(\frac{E}{A}\right)_{it}}{\sigma ROA_{it}}$$

Where:

ROA_{it} : Return on Assets of bank i at time t.

$\left(\frac{E}{A}\right)_{it}$: Equity to Assets ratio of bank i at time t.

σROA_{it} : Standard Deviation of ROA_{it} (standard deviation of ROA over the five-year period from (t-4) to t, with the requirement that there is ROA of at least three years).

$Z - score$: Bank stability.

According to Laeven and Levine (2009), because the Z-score is highly skewed, the dependent variable will be measured by the natural logarithm of the Z-score, which is normally distributed. For brevity, we use the label ‘‘Z-score’’ in referring to the natural logarithm of the Z-score in the remainder of the paper.

3.2.3. Ownership Structure as Moderating Variables

Ownership structure might have a relationship with bank stability (or bank risk-taking) (Nguyen, 2020; Srairi, 2013). As a result, ownership structure can have moderating effects on the impact of EPU on the bank stability. In this study, three variables are used to indicate the ownership structure: State ownership, foreign ownership, and ownership concentration. Following Nguyen (2020), the variables are measured as follows:

State ownership (STATE): proportion of equity held by the government and state-owned enterprises.

Foreign ownership (FRN): proportion of equity held by foreign entities and individuals.

Ownership concentration (CON): is a dummy variable that receives the value of 1 if a bank has at least one shareholder who holds 10% or more of shares and otherwise receives the value of 0. If no shareholder holds 10% or more of the shares, the bank is classified as widely held.

3.2.3. Research Models

The following models are suggested to determine how EPU affects the stability of Chinese listed commercial banks based on the reviewed literature.

The first hypothesis investigates the connection between the Chinese EPU and bank stability. Thus, the suggested hypothesis is tested using the following equation.

$$\boldsymbol{Z_{it} = \beta_0 + \beta_1 EPU_t + \beta_2 SIZE_{it} + \beta_3 LIQ_{it} + \beta_4 ROA_{it} + \beta_5 CAR_{it} + \beta_6 NIIR_{it} + \beta_7 INF_t + \varepsilon_{it}} \ (1)$$

ISSN 2076-9202

The dependent variable is the Z-score (Z) indicating bank stability, as calculated in section 3.2.2 above. The greater the Z is, the better stability the bank has. The independent variable is Chinese EPU (EPU). The control variables are Bank size (SIZE), Liquidity (LIQ), Profitability (ROA), Capital adequacy ratio (CAR), Income diversification (NIIR), and Inflation rate (INF). The subscripts *i* and *t,* and *ε* denote, respectively, the bank, year, and error term. Table 1 presents the detailed calculations of the variables.

Hypotheses 2.1.1 and 2.1.2 test the interaction between state ownership (STATE) and Chinese EPU (EPU) in the impact on bank stability. The following equation is employed to test the hypotheses.

$$Z_{it} = \beta_0 + \beta_1 EPU_t + \beta_2 EPU_t STATE_{it} + \beta_3 STATE_{it} + \beta_4 SIZE_{it} + \beta_5 LIQ_{it} + \beta_6 ROA_{it} + \beta_7 CAR_{it} + \beta_8 NIIR_{it} + \beta_9 INF_t + \varepsilon_{it} \quad (2)$$

The difference between Equation 1 and Equation 2 is the appearance of the interaction term EPU*STATE and the STATE variable. The interaction term is employed in order to measure the moderating effect of state ownership (STATE) on the impact of EPU on bank stability. Other control variables are the same as in Equation 1.

Hypotheses 2.2.1 and 2.2.2 test the interaction between foreign ownership (FRN) and Chinese EPU (EPU) in the impact on bank stability. Therefore, the same model in Equation 2 is applied. The interaction term in this equation is EPU*FRN and the FRN variable. The equation is as follows.

$$Z_{it} = \beta_0 + \beta_1 EPU_t + \beta_2 EPU_t FRN_{it} + \beta_3 FRN_{it} + \beta_4 SIZE_{it} + \beta_5 LIQ_{it} + \beta_8 ROA_{it} + \beta_7 CAR_{it} + \beta_8 NIIR_{it} + \beta_9 INF_t + \varepsilon_{it} \quad (3)$$

Similarly, the same model is applied to test hypotheses 2.3.1 and 2.3.2 which examine the interaction between ownership concentration (CON) and Chinese EPU (EPU) in the impact on bank stability. The interaction term in this equation is EPU*CON and the CON variable. The Equation 4 is presented below.

$$Z_{it} = \beta_0 + \beta_1 EPU_t + \beta_2 EPU_t CON_{it} + \beta_3 CON_{it} + \beta_4 SIZE_{it} + \beta_5 LIQ_{it} + \beta_6 ROA_{it} + \beta_7 CAR_{it} + \beta_8 NIIR_{it} + \beta_9 INF_t + \varepsilon_{it} \quad (4)$$

This paper employs three panel-data regression methods, which are Pooled OLS (Ordinary Least Squares) regression, Fixed Effects Model (FEM), and Random Effects Model (REM), to analyze panel data to explore the strength and direction of the relationship among variables. In order to determine the most appropriate model for analyzing results, three different tests including the F-test, Breusch-Pagan Lagrange Multiplier (LM) test, and Hausman test are performed. A summary of the process is presented in Table 2.

ISSN 2076-9202

Table 1: Definition of variables

Variables	Definition
The Dependent variable	
Z-score (Z)	Z = ln{[Return on assets ratio + (Equity/Total assets)] / Std (Return on assets ratio)}
Independent variable	
Economic policy uncertainty (EPU)	Average of 12 monthly indexes of Chinese economic policy uncertainty
Moderating effect	
State ownership (STATE)	The proportion of state shares to total shares
Foreign ownership (FRN)	The proportion of foreign shares to total shares
Ownership concentration (CON)	A dummy variable which equals 1 for banks having at least one shareholder who holds 10% share or more and otherwise is equal to 0
Control variables	
Bank size (SIZE)	The natural logarithm of total assets
Liquidity (LIQ)	Liquid assets / Total assets
Profitability (ROA)	Net income / Total assets
Capital adequacy ratio (CAR)	(Tier 1_Capital +Tier 2_Capital) / Risk-weighted average assets
Income diversification (NIIR)	Non-interest income / Total income
Inflation (INF)	Annual inflation rate

Table 2: Summary of Tests and Models

F-test	Breusch-Pagan LM test	Hausman test	The selected model
H_0 is not rejected	H_0 is not rejected		Pooled OLS
H_0 is not rejected	H_0 is rejected		REM
H_0 is rejected	H_0 is not rejected		FEM
H_0 is rejected	H_0 is rejected	H_0 is rejected	FEM
H_0 is rejected	H_0 is rejected	H_0 is not rejected	REM

Source: Le & Phan (2017)

ISSN 2076-9202

4. Empirical results

4.1. Overview of Chinese EPU

Figure 1: Chinese EPU index over 5 year-period (2018 - 2022)

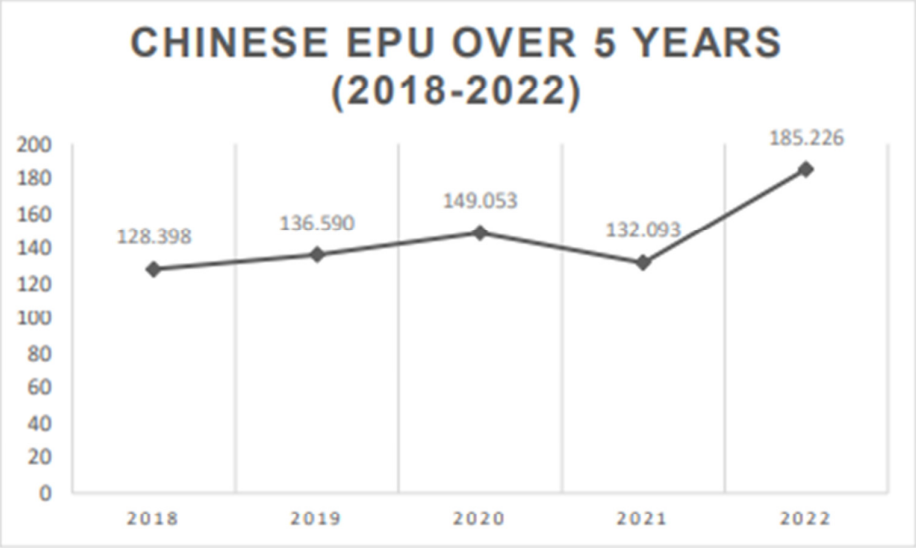


Figure 1 depicts the value of annual Chinese EPU from 2018 to 2022 with significant fluctuations, which can be attributed to various major events that occurred in China during this period.

In 2018, the EPU was relatively low at around 128.398. This could be due to the stable political environment with Xi Jinping as the General Secretary of the Communist Party and President. However, in 2019, the EPU increased slightly to around 136.590. This could be linked to the trade tensions between China and the United States, which might have caused uncertainty in China's economic policy.

In 2020, the EPU peaked at about 149.053. This was the year when the COVID-19 pandemic hit the world, and China was the first country to face this crisis. The pandemic and the subsequent lockdowns might have caused significant uncertainty in China's economic policy. In 2021, the EPU dropped to approximately 132.093. This could be due to China's effective control of the COVID-19 pandemic and the country's economic recovery.

ISSN 2076-9202

However, in 2022, the EPU sharply increased to its highest point over the five years at approximately 185.226. This could be attributed to several factors such as the ongoing COVID-19 pandemic, the Russian invasion of Ukraine, slowing global and domestic growth, increased tensions in and around Taiwan, and protests over zero-COVID. These events might have caused significant uncertainty in China's economic policy, leading to a high EPU.

4.2. Descriptive statistics

Table 3 shows the descriptive statistics of variables. Bank stability measured by Z exhibits a mean value of 4.952. This indicates that, on average, Z is close to 5 within the sample. The minimum and maximum values are 3.873 and 5.991, respectively, revealing a range of approximately 2.1. This suggests that while Z values are centered around the mean, there is some variability across observations.

Next, the main independent variable-EPU has a mean of 148.398, reflecting the average level of economic policy uncertainty in the sample. The minimum value of 128.398 and maximum value of 185.226 indicate a considerable range of 56.828. This variation suggests periods of both lower and higher economic policy uncertainty within the dataset.

Coming to the moderating factors, the mean value of the STATE variable is 0.382, with values ranging from 0.092 to 0.731. The difference between the minimum and maximum values indicates a significant range, suggesting variability in the STATE measure within the sample. The highest value is nearly eight times the lowest, indicating substantial diversity in state ownership.

Next, the FRN variable has a mean of 0.177, with a minimum value of 0 and a maximum value of 0.406. This range indicates that the presence of foreign ownership varies widely, with some instances showing no foreign involvement and others showing a substantial presence of up to 40.6%.

In particular, the dummy variable "CON" has two values, equal to 1 for the banks having at least one shareholder who holds 10% or more of shares and otherwise receives the value of 0. If no shareholder holds 10% or more of the shares, the bank is classified as widely held. This variable takes the 0.847 mean value. The high mean value indicates that, on average, the sample exhibits a high level of concentration.

ISSN 2076-9202

Table 3: Descriptive Statistics

The sample consists of 137 bank-year observations from 2018 to 2022. The definitions of variables are stated in Table 1.

	N	Mean	Median	Min	Max	SD
Z	137	4.952	4.916	3.873	5.991	.594
EPU	137	148.398	136.590	128.398	185.226	21.48
STATE	137	.382	0.348	.092	.731	.207
FRN	137	.177	0.180	0	.406	.127
CON	137	.847	1.000	0	1	.362
SIZE	137	28.47	28.576	26.028	30.952	1.549
LIQ	137	.121	0.115	.077	.181	.029
ROA	137	.008	0.008	.006	.011	.001
CAR	137	.129	0.126	.107	.158	.015
NIIR	137	.205	0.212	.087	.351	.077
INF	137	2.021	2.075	.981	2.899	.67

4.3. Correlation coefficients

It is observed from Table 4 that the correlation coefficients between bank stability (Z) and EPU is positive and statistically significant, whereas the correlation coefficient between Z and CON, SIZE, LIQ, and INF are negative and statistically significant. Moreover, the correlation coefficients between bank stability and the remaining variables in the model are either positive or negative but not statistically significant. These relationships are crucial for understanding how different factors interact with Z, providing insights for further regression analysis.

Firstly, the correlation coefficient between Z and EPU has a positive value of 0.310, with a significance level of 1%. This moderate positive correlation indicates that as economic policy uncertainty increases, the value of Z tends to increase as well, in contrast with the expectation that Chinese EPU has a negative effect on bank stability. The reason for this result may be due to differences in EPU. More specifically, in previous research papers, the authors often use EPU as measured through the Hong Kong-based English newspaper SCMP by Baker et al. (2016). In this paper, we use the new EPU index measured through 10 mainland Chinese newspapers by Huang and Luk (2020). Therefore, the results point to another angle that commercial banks in China particularly can operate more stably in times of economic policy uncertainty. The strength of this correlation suggests that fluctuations in economic policy have a notable impact on Z. This

ISSN 2076-9202

means there is strong evidence to support that changes in economic policy uncertainty are associated with changes in bank stability.

The correlation coefficient between Z and CON is -0.230, with a significance level of $p < 0.01$. This moderate negative correlation suggests that higher levels of concentration are associated with lower values of Z. The negative direction indicates an inverse relationship, where an increase in ownership concentration leads to a decrease in Z. This result aligns with the findings of Rahim et al. (2019).

The correlation coefficient between Z and SIZE is -0.165, which is statistically significant at 10% level. This weak negative correlation suggests a slight tendency for larger bank sizes to be associated with lower values of Z. This goes against the expectation, the "too big to fail" theory, and what Buchner et al. (2017) find. The correlation is not strong, suggesting a potentially meaningful but not dominant influence of bank size on Z.

The correlation coefficient between Z and LIQ is -0.308, with a significance level of $p < 0.01$. This moderate negative correlation implies that higher liquidity is associated with lower values of Z. The result suggests a strong and reliable relationship between liquidity and Z. This outcome offers support in favor of both the expectation and the findings of Wang & Zhuang (2022).

The correlation coefficient between Z and INF is -0.240, with a significance level of $p < 0.01$. This moderate negative correlation indicates that higher inflation rates are associated with lower values of Z. This result is consistent with both the expectation and the findings of Mohammed et al. (2014).

In addition, the absolute value of the correlation coefficient for each pair of explanatory variables is less than 0.7. Therefore, there is no multicollinearity issue in my regression models.

ISSN 2076-9202

Table 4: Pairwise correlations

The sample consists of 137 bank-year observations from 2018 to 2022. The definitions of variables are stated in Table 1.

Variables	Z	EPU	STATE	FRN	CON	SIZE	LIQ	ROA	CAR	NIIR	INF
Z	1.000										
EPU	0.310***	1.000									
STATE	-0.006	0.035	1.000								
FRN	-0.109	-0.069	-0.011	1.000							
CON	-0.230***	-0.039	0.221***	0.553***	1.000						
SIZE	-0.165*	0.010	0.622***	0.294***	0.437***	1.000					
LIQ	-0.308***	-0.339***	0.170**	0.172**	0.081	0.182**	1.000				
ROA	-0.106	-0.078	0.202**	0.128	0.209**	0.346***	0.214**	1.000			
CAR	0.062	0.010	0.195**	0.027	-0.159*	0.090	0.291***	0.516***	1.000		
NIIR	-0.122	0.000	0.092	0.392***	0.277***	0.585***	-0.033	0.310***	0.004	1.000	
INF	-0.240***	0.109	0.005	0.025	0.085	0.055	0.262***	0.209**	-0.027	0.112	1.000

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

4.4. Regression results

4.4.1. The effect of EPU on bank stability

Table 5 shows that REM is the best regression for Model 1 since the null hypothesis H_0 is rejected under the F-test and LM test but not in the Hausman test (please see Table 2 in Section 3 for the guideline). Therefore, the results are analyzed using the REM.

Firstly, the Chinese Economic Policy Uncertainty (EPU) positively affects bank stability (Z) with a coefficient of 0.007 and significant at the 1% level. The positive correlation between EPU and Z is contrary to Hypothesis 1 and the findings of previous studies (Desalegn et al., 2023; Zhang and Wang, 2023; Li, 2023). There are several possible explanations for the result. The first reason is the application of the new Chinese EPU index. To be more specific, while previous studies use the EPU index measured through the Hong Kong-based English newspaper SCMP by Baker et al. (2016), this research applies the new Chinese EPU index measured through 10 mainland newspapers by Huang and Luk (2020) to avoid limitations mentioned in Section 3.2.1. As a result, the finding provides a new angle for the problem researched. Another explanation for this discrepancy could be the unique context of the Chinese banking sector. In Table 3, the minimum value for state ownership is 0.092 showing that every bank in our sample has state

ISSN 2076-9202

ownership. Therefore, these banks might benefit from government interventions and support during periods of policy uncertainty. These interventions can provide a buffer that mitigates the adverse effects typically associated with EPU. Finally, Chinese banks might be better positioned to adapt to policy changes due to their close ties with government policies and regulations, allowing them to leverage new opportunities arising from policy shifts.

Secondly, regarding the LIQ variable, the coefficient on LIQ is negative (-4.787) and statistically significant at 5%. This result validates the expectations about the relationship between liquidity and bank stability. As the liquid assets to total assets ratio of the bank increases, the bank stability decreases because banks tend to exhibit a greater willingness to take on additional risks if they have low liquidity risk, leading to bank instability. This result is also supported by the results of previous studies (Kim & Sohn, 2017; Jiang et al., 2020; Wang & Zhuang, 2022). However, this result has the opposite side compared to the findings of Diamond & Dybvig (1983) and Diamond & Rajan (2001) who find that the illiquidity of assets provides the rationale for banks' vulnerability to runs, so liquidity is crucial in preventing bank runs and maintaining financial stability.

Finally, for the inflation rate, the REM regression results suggest the INF variable has a negative and significant effect on Z, with a coefficient of -0.184 and statistically significant at the 1% level. This suggests that higher inflation rates are associated with a decrease in bank stability. The result validates the expectation about the impact of the inflation rate on bank stability. When the inflation rate in China grows, commercial banks' stability decreases as a high inflation rate reduces the rate of return on financial assets, causing tension in the credit market. This result also coincides with the findings of Mohammed et al. (2014) and Louati & Boujelbene (2020).

ISSN 2076-9202

Table 5: Regression result for Model 1

The sample consists of 137 bank-year observations from 2018 to 2022. The definitions of variables are stated in Table 1. Standard errors are in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Variables	Pooled OLS	FEM	REM
Constant	**5.310*** **	**-19.537**	**5.770*** **
	(1.073)	(18.845)	(1.387)
EPU	**0.007*** **	**0.002**	**0.007*** **
	(0.002)	(0.004)	(0.002)
SIZE	**-0.041**	**0.854**	-0.052
	(0.039)	(0.666)	(0.050)
LIQ	**-3.595***	**-7.192** **	**-4.787** **
	(1.979)	(2.877)	(2.106)
ROA	**-8.298**	**130.818***	**28.763**
	(42.445)	(77.170)	(49.223)
CAR	**4.822**	-1.975	**2.896**
	(3.825)	(7.465)	(4.338)
NIIR	**-0.285**	**0.535**	**-0.143**
	(0.778)	(1.248)	(0.894)
INF	**-0.183** **	**-0.092**	**-0.184*** **
	(0.078)	(0.105)	(0.071)
Bank FE	No	Yes	No
Year FE	No	Yes	No
Bank RE	No	No	Yes
Year RE	No	No	Yes
Adj R-squared	0.177		
F-statistic	5.18		
(p-value)	0.000		
LM Test			
Chi-squared			14.30
(p-value)			0.000
Hausman test			
Chi-squared		7.24	
(p-value)		0.299	
Number of obs	137	137	137

ISSN 2076-9202

4.4.2. The moderating effect of state ownership on the relationship between EPU and bank stability

The results from Table 6 indicate that REM is selected as the most appropriate regression model because the null hypothesis H_0 is rejected in the F-test and LM test but not in the Hausman test. REM will thus be utilized to interpret the findings.

As the REM results present, both coefficients on EPU and the interaction term (EPU x STATE) are positive, however, the coefficients are not statistically significant. Although the coefficient is in line with the findings of Galariotis et al. (2021), Yu et al. (2022), and Yuan and Sun (2023), which suggests that the existence of an optimal level of state ownership can improve performance and efficiency so that state-owned banks have more stable performance compared to other types of banks when suffering from EPU, it cannot support hypothesis 2.1.1 due to lack of statistical significance. Besides, the result also differs from hypothesis 2.1.2, suggesting that state ownership has no significant moderating effect on the relationship between EPU and bank stability. In addition, the results of Andrews (2005), Iannotta et al. (2007), Srairi (2013), and Hamdi & Hassen (2021) claim that state-owned banks have poor performance because they have greater objectives leading to excessive risk-taking and instability, which also runs counter to the conclusion. It is possible that these banks might operate with considerable autonomy and may not adapt their strategies in reaction to short-term EPU fluctuations.

The results of LIQ and INF variables in Model 2 using REM regression are similar to those in Model 1. Briefly, LIQ and INF still have statistically significant effects on bank stability and the directions of these effects are the same as in Model 1. Meanwhile, the SIZE variable in this model has a coefficient of -0.113 which is significant at the 10% level, suggesting that when the STATE variable and the interaction between STATE and EPU are considered, bank size has a significantly negative effect on bank stability. Although this result goes against the findings of Buchner et al. (2017) and Chand et al. (2021), it is in line with the findings of Chang et al. (2023) which state that excessive size can lead to a negative spillover effect in the event of default, leading to an increase in systemic risk. The remaining variables are found to have no significant effect on bank stability.

ISSN 2076-9202

Table 6: Regression result for Model 2

The sample consists of 137 bank-year observations from 2018 to 2022. The definitions of variables are stated in Table 1. Standard errors are in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Variables	Pooled OLS	FEM	REM
Constant	6.708***	-21.247	7.661***
	(1.558)	(18.766)	(1.838)
EPU	0.006	-0.001	0.004
	(0.005)	(0.005)	(0.004)
EPU*STATE	0.005	0.009	0.007
	(0.011)	(0.009)	(0.009)
STATE	-0.314	0.143	-0.394
	(1.598)	(1.636)	(1.413)
SIZE	-0.087	0.902	-0.113*
	(0.054)	(0.665)	(0.067)
LIQ	-3.384*	-5.782*	-4.600**
	(1.996)	(2.940)	(2.130)
ROA	-4.885	114.454	34.179
	(42.594)	(77.140)	(49.727)
CAR	4.002	0.105	1.935
	(3.891)	(7.522)	(4.406)
NIIR	0.133	0.368	0.274
	(0.855)	(1.240)	(0.947)
INF	-0.187**	-0.084	-0.188***
	(0.078)	(0.105)	(0.071)
Bank FE	No	Yes	No
Year FE	No	Yes	No
Bank RE	No	No	Yes
Year RE	No	No	Yes
Adj R-squared	0.1747		
F-statistic	4.20		
(p-value)	0.000		
LM Test			
Chi-squared			14.87
(p-value)			0.000
Hausman test			
Chi-squared		7.27	
(p-value)		0.402	
Number of obs	137	137	137

ISSN 2076-9202

4.4.3. The moderating effect of foreign ownership on the relationship between EPU and bank stability

The results from Table 7 indicate that REM is selected as the most appropriate regression model because the null hypothesis H_0 is rejected in the F-test and LM test but not in the Hausman test. REM will thus be utilized to interpret the findings.

As indicated by the REM results, the coefficients on EPU and the interaction term (EPU x FRN) are positive. However, while the coefficient for EPU is statistically significant, the interaction term is not. This may be due to an insufficient sample size. The findings are similar to those of Le (2021), Nguyen (2022), and Duc (2023), who assert that foreign ownership ratios negatively impact liquidity risk and lower non-performing loan ratios, enhancing stability; however, it is unable to support hypothesis 2.2.1 due to a lack of statistical significance. Additionally, the results contradict hypothesis 2.2.2, indicating that foreign ownership does not significantly moderate the relationship between EPU and bank stability. Furthermore, this conclusion differs from the findings of Chen et al. (2017) and Ismiyanti et al. (2018), who suggest that foreign ownership increases risk-taking behavior, thereby reducing stability. Our finding implies that the inclusion of foreign ownership in China's banking sector creates a balanced competitive environment, where foreign-owned banks operate under comparable regulations and safeguards as domestic counterparts.

The results of EPU, LIQ, and INF in Model 3 using REM regression are similar to those in Model 1. Briefly, EPU, LIQ, and INF still have statistically significant effects on bank stability and the directions of these effects are the same as in Model 1. The remaining variables are found to have no significant effect on bank stability.

ISSN 2076-9202

Table 7: Regression result for Model 3

The sample consists of 137 bank-year observations from 2018 to 2022. The definitions of variables are stated in Table 1. Standard errors are in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Variables	Pooled OLS	FEM	REM
Constant	5.547***	-18.467	6.023***
	(1.187)	(19.268)	1.465
EPU	0.006	0.001	0.006*
	(0.004)	(0.004)	(0.003)
EPU*FRN	0.008	0.006	0.009
	(0.017)	(0.015)	(0.015)
FRN	-1.320	-0.631	-1.250
	(2.571)	(2.742)	(2.285)
SIZE	-0.042	0.821	-0.053
	(0.040)	(0.678)	(0.051)
LIQ	-3.475*	-7.182**	-4.698**
	(2.033)	(2.904)	(2.136)
ROA	-7.473	131.049*	30.140
	(42.780)	(78.887)	(49.597)
CAR	4.649	-2.441	2.648
	(3.866)	(7.634)	(4.391)
NIIR	-0.235	0.565	-0.150
	(0.827)	(1.270)	(0.916)
INF	-0.184**	-0.095	-0.185***
	(0.079)	(0.108)	(0.072)
Bank FE	No	Yes	No
Year FE	No	Yes	No
Bank RE	No	No	Yes
Year RE	No	No	Yes
Adj R-squared	0.1659		
F-statistic	4.00		
(p-value)	0.000		
LM Test			
Chi-squared			14.35
(p-value)			0.000
Hausman test			
Chi-squared		7.43	
(p-value)		0.386	
Number of obs	137	137	137

ISSN 2076-9202

4.4.4. The moderating effect of ownership concentration on the relationship between EPU and bank stability

The results from Table 8 indicate that REM is selected as the most appropriate regression model because the null hypothesis H_0 is rejected in the F-test and LM test but not in the Hausman test. REM will thus be utilized to interpret the findings.

The REM analysis reveals that although the coefficients on EPU and the interaction term (EPU x CON) are positive, they are not statistically significant. This conclusion aligns with the findings of Marco & Fernández (2008) and Iannotta et al. (2007), who observe a positive relationship between ownership concentration and bank stability in European countries; however, it still does not support hypothesis 2.3.1 due to lack of statistical significance. Furthermore, this outcome also diverges from the conclusions of Laeven and Levine (2009), Haw et al. (2010), and Rahim et al. (2019), who report that ownership concentration is linked to increased risk, thereby reducing stability. The result that ownership concentration does not significantly moderate the relationship between EPU and bank stability also contradicts hypothesis 2.3.2, indicating that the regulatory framework significantly shapes bank operations, diminishing the influence of concentrated ownership on governance practices.

In Model 4, the results for the LIQ and INF variables using REM regression are consistent with those in the previous three models. Specifically, LIQ and INF continue to have statistically significant effects on bank stability, and the directions of these effects remain unchanged. Other variables do not show a significant impact on bank stability.

ISSN 2076-9202

Table 8: Regression result for Model 4

The sample consists of 137 bank-year observations from 2018 to 2022. The definitions of variables are stated in Table 1. Standard errors are in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Variables	Pooled OLS	FEM	REM
Constant	5.374***	-17.507	5.743***
	(1.324)	(19.487)	1.553
EPU	0.005	0.001	0.005
	(0.005)	(0.005)	(0.005)
EPU*CON	0.003	0.002	0.003
	(0.006)	(0.005)	(0.005)
CON	-0.655	-0.452	-0.583
	(0.882)	(0.868)	(0.787)
SIZE	-0.020	0.794	-0.031
	(0.041)	(0.684)	(0.052)
LIQ	-3.358*	-7.278**	-4.645**
	(1.980)	(2.907)	(2.100)
ROA	9.356	131.085*	37.180
	(43.688)	(79.954)	(49.801)
CAR	2.637	-2.338	1.673
	(4.032)	(7.583)	(4.442)
NIIR	-0.301	0.597	-0.137
	(0.776)	(1.267)	(0.886)
INF	-0.184**	-0.101	-0.184***
	(0.078)	(0.108)	(0.071)
Bank FE	No	Yes	No
Year FE	No	Yes	No
Bank RE	No	No	Yes
Year RE	No	No	Yes
Adj R-squared	0.1825		
F-statistic	4.37		
(p-value)	0.000		
LM Test			
Chi-squared			12.12
(p-value)			0.000
Hausman test			
Chi-squared		7.86	
(p-value)		0.345	
Number of obs	137	137	137

ISSN 2076-9202

5. Conclusions

This study examines the relationship between the uncertainty of economic policy and bank stability, as well as the moderating impact of ownership structure on this relationship. Based on a sample of Chinese listed commercial banks between 2018 and 2022, we find that REM is the best model for this study and the results of REM show that the impact of EPU on bank stability is positive and statistically significant. This suggests that Chinese banks may demonstrate greater stability during periods of increased policy uncertainty, potentially, due to government interventions and support as well as the stringent regulatory frameworks and robust management practices of the banks to mitigate risks and adapt to policy changes during uncertain times.

Moreover, the interaction effect between EPU and ownership structure (state ownership, foreign ownership, and ownership concentration) on bank stability is not statistically significant. The finding suggests that ownership structure does not have a significant moderating role in the impact of EPU on the stability of banks in China. The uniformity in response across different ownership structures highlights the pervasive influence of the regulatory environment and market conditions in China.

Regarding the control variables, bank size is found to have a significant negative impact on bank stability when the moderating effect of state ownership is considered. Moreover, both liquidity ratio and inflation rate present significantly negative effects on bank stability. On the other hand, profitability, capital adequacy ratio, and income diversification do not have a statistically significant impact on bank stability. This indicates that while some financial indicators are clear determinants of bank stability, others may interact with EPU in more complex ways.

Our study contributes to the literature on bank stability as it documents a macroeconomic factor - the EPU index – as the determinant of the stability of Chinese commercial banks. The use of Huang and Luk (2020)'s EPU index is specifically tailored to the Chinese context, capturing nuances and specifics of Chinese policy uncertainties more accurately than the broader, more global perspective of the Baker et al. (2016)'s index. This methodological choice aims to provide a fresh angle on the issue, potentially explaining differences in our findings compared to previous research. Our research also makes a significant contribution by exploring the moderating effect of ownership structure on the relationship between EPU and bank stability.

In addition, the findings offer valuable insights for policymakers, bank managers, and researchers, highlighting the complex interplay between policy uncertainty and bank stability in the Chinese context. By focusing on recent data and employing robust methodological approaches, this study aims to contribute to the literature and provide a foundation for future research on this critical topic.

Future studies may conduct comparative research across different countries or regions to identify whether the findings observed in the Chinese context are applicable to other banking systems with distinct regulatory and economic environments. Cross-country analyses could reveal universal patterns or highlight

ISSN 2076-9202

unique national characteristics that influence the relationship between EPU and bank stability. Such studies could also facilitate the development of global strategies to mitigate the impact of EPU on banking sectors worldwide.

References

Andrews, M. (2005). State-Owned Banks, Stability, Privatization, and Growth: Practical Policy Decisions in a World without Empirical Proof. *IMF Working Papers*, *05*(10), 1. https://doi.org/10.5089/9781451860290.001

Ashraf, B. N. (2021). Is economic uncertainty a risk factor in bank loan pricing decisions? International evidence. *Risks*, *9*(5), 81. https://doi.org/10.3390/risks9050081

Baker Nicholas Bloom Steven J Davis, S. R., Jorring, A., Kost, K., Al-Kuwari, A., Biffar, S., Boehnke, J., Dashkeyev, V., Deriy, O., Dinh, E., Ezure, Y., Gong, R., Jindal, S., Kim, R., Klosin, S., Koh, J., Lajewski, P., Nebiyu, D., Sachs, R., Shibata, I., … Wu, C. (2016). Measuring Economic Policy Uncertainty. *The Quarterly Journal of Economics*, *131*(4), 1593–1636. https://doi.org/10.1093/QJE/QJW024

Barth, J. R., Caprio, G., & Levine, R. (2000). Banking systems around the globe : do regulation and ownership affect the performance and stability? *Policy Research Working Paper Series*. https://ideas.repec.org/p/wbk/wbrwps/2325.html

Bikker, J. A., & Hu, H. (2002). Cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new Basel capital requirements. *PSL Quarterly Review*, *55*(221)

Buchner, A., Mohamed, A., Venturing, A. S.-J. of B., & 2017, undefined. (2017). Diversification, risk, and returns in venture capital. *Elsevier*. https://doi.org/10.1016/j.jbusvent.2017.05.005

Chand, S. A., Kumar, R. R., & Stauvermann, P. J. (2021). Determinants of bank stability in a small island economy: a study of Fiji. *Accounting Research Journal*, *34*(1), 22–42. https://doi.org/10.1108/ARJ-06-2020-0140/FULL/XML

Chang, Y., Firoozi, D., & Benatia, D. (2023). *Large Banks and Systemic Risk: Insights from a Mean-Field Game Model*. https://arxiv.org/abs/2305.17830v2

Chen, M., Wu, J., Jeon, B. N., & Wang, R. (2017). Do foreign banks take more risk? Evidence from emerging economies. *Journal of Banking and Finance*, *82*(82), 20–39. https://doi.org/10.1016/j.jbankfin.2017.05.004

Chi, Q., & Li, W. (2017). Economic policy uncertainty, credit risks and banks' lending decisions: Evidence from Chinese commercial banks. In *China Journal of Accounting Research* (Vol. 10, Issue 1, pp. 33–50). Sun Yat-sen Medical University. https://doi.org/10.1016/j.cjar.2016.12.001

Cihák, M., Demirgüç-Kunt, A., Feyen, E., & Levine, R. (2012). *Benchmarking Financial Systems around the World*. https://doi.org/10.1596/1813-9450-6175

Cihák, M., Mare, D. S., & Melecky, M. (2021). Financial Inclusion and Stability: Review of Theoretical and Empirical Links
[Risk in Islamic Banking]. *The World Bank Research Observer*, *36*(2), 197–233. https://doi.org/10.1093/WBRO/LKAA006

Danisman, G. O., Ersan, O., & Demir, E. (2020). Economic policy uncertainty and bank credit growth: Evidence from European

ISSN 2076-9202

banks. *Journal of Multinational Financial Management*, *57–58*, 100653. https://doi.org/10.1016/J.MULFIN.2020.100653

Desalegn, T. A., Zhu, H., & Borojo, D. G. (2023). Economic policy uncertainty, bank competition and financial stability. *Journal of Financial Economic Policy*, *15*(2), 123–139. https://doi.org/10.1108/JFEP-04-2022-0106

Diaconu, R.-I., & Oanea, D.-C. (2014). The Main Determinants of Bank's Stability. Evidence from Romanian Banking Sector. *Procedia Economics and Finance*, *16*, 329–335. https://doi.org/10.1016/S2212-5671(14)00810-7

Diamond, D. W., & Dybvig, P. H. (1983). Bank runs, deposit insurance, and liquidity. *Journal of Political Economy*, *91*(3), 401–419. https://doi.org/10.1086/261155

Diamond, D. W., & Rajan, R. G. (2001). Banks and Liquidity. *American Economic Review*, *91*(2), 422–425. https://doi.org/10.1257/AER.91.2.422

Duc, C. H. (2023). FOREIGN OWNERSHIP AND BANK RISK-TAKING IN VIETNAM. *Economics, Finance and Management Review*, *2*, 60–69. https://doi.org/10.36690/2674-5208-2023-2-60-69

Galariotis, E., Kalaitzoglou, I., Niklewski, J., & Zopounidis, C. (2021). Optimal level of state ownership in banks: prevention measure versus emergency action—evidence from the new millennia. *Annals of Operations Research*, *304*(1–2), 165–197. https://doi.org/10.1007/S10479-021-04085-1

García-Marco, T., & Robles-Fernández, M. D. (2008). Risk-taking behaviour and ownership in the banking industry: The Spanish evidence. *Journal of Economics and Business*, *60*(4), 332–354. https://doi.org/10.1016/J.JECONBUS.2007.04.008

Hamdi, K., & Hassen, G. (2021). Economic policy uncertainty effect on credit risk, lending decisions and banking performance: evidence from Tunisian listed banks. *Journal of Economic and Administrative Sciences*, *38*(2), 287–303. https://doi.org/10.1108/JEAS-09-2020-0159

Han, R., paper, M. M.-W. bank policy research working, & 2013, undefined. (2013). Financial inclusion for financial stability: Access to bank deposits and the growth of deposits in the global financial crisis. *Papers.Ssrn.ComR Han, M MeleckyWorld Bank Policy Research Working Paper, 2013•papers.Ssrn.Com*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2312982

Haw, I. M., Ho, S. S. M., Hu, B., & Wu, D. (2010). Concentrated control, institutions, and banking sector: An international study. *Journal of Banking & Finance*, *34*(3), 485–497. https://doi.org/10.1016/J.JBANKFIN.2009.08.013

Hu, G., & Liu, S. (2021). Economic Policy Uncertainty (EPU) and China's Export Fluctuation in the Post-pandemic Era: An Empirical Analysis based on the TVP-SV-VAR Model. *Frontiers in Public Health*, *9*. https://doi.org/10.3389/FPUBH.2021.788171/FULL

Huang, Q. (2023). Ownership concentration and bank stability in China. *Applied Economics Letters*, *30*(15), 2108–2112. https://doi.org/10.1080/13504851.2022.2094316

Huang, Y., & Luk, P. (2020). Measuring economic policy uncertainty in China. *China Economic Review*, *59*, 101367. https://doi.org/10.1016/J.CHIECO.2019.101367

Hung, N. T., & Quoc, P. P. (2020). State-ownership and bank risk: A case of Vietnamese commercial banks. *HCMCOUJS* -

ISSN 2076-9202

ECONOMICS AND BUSINESS ADMINISTRATION, *10*(2). https://doi.org/10.46223/HCMCOUJS.ECON.EN.10.2.965.2020

Iannotta, G., Nocera, G., & Sironi, A. (2007). Ownership structure, risk and performance in the European banking industry. *Journal of Banking & Finance*, *31*(7), 2127–2149. https://doi.org/10.1016/J.JBANKFIN.2006.07.013

International Banker. (2014, March 11). Chinese banking: the strengths and weaknesses. https://internationalbanker.com/banking/chinese-banking-strengths-weaknesses/

Ismiyanti, F., Rahman, A., & Mahadwartha, P. A. (2018). Do foreign and state banks take more risk? *Banks and Bank Systems*, *13*(4), 96–102. https://doi.org/10.21511/BBS.13(4).2018.09

Jabbouri, I., Naili, M., Almustafa, H., & Jabbouri, R. (2023). Does ownership concentration affect banks' credit risk? Evidence from MENA emerging markets. *Bulletin of Economic Research*, *75*(1), 119–140. https://doi.org/10.1111/BOER.12345

Jensen, M. C., Meckling, W. H., Benston, G., Canes, M., Henderson, D., Leffler, K., Long, J., Smith, C., Thompson, R., Watts, R., & Zimmerman, J. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, *4*, 305–360. http://hupress.harvard.edu/catalog/JENTHF.html

Jiang, H., Zhang, J., & Sun, C. (2020). How does capital buffer affect bank risk-taking? New evidence from China using quantile regression. *China Economic Review*, *60*. https://doi.org/10.1016/j.chieco.2019.04.008

Kahneman, D., … A. T. the fundamentals of financial decision, & 2013, undefined. (1979). Prospect theory: An analysis of decision under risk. *World ScientificD Kahneman, A TverskyHandbook of the Fundamentals of Financial Decision Making: Part I, 2013•World Scientific*, *47*(2), 263–292. https://www.worldscientific.com/doi/abs/10.1142/9789814417358_0006

Karinna, K., & Viverita, V. (2019). *The Effects of Ownership Types, Concentration, and Foreign Banks' Modes of Entry Risk-Taking Behaviour and Capital Ratio*. https://doi.org/10.4108/EAI.6-12-2018.2286324

Kim, D., & Sohn, W. (2017). The effect of bank capital on lending: Does liquidity matter? *Journal of Banking & Finance*, *77*, 95–107. https://doi.org/10.1016/J.JBANKFIN.2017.01.011

Laeven, L., & Levine, R. (2009). Bank governance, regulation and risk taking. *Journal of Financial Economics*, *93*(2), 259–275. https://doi.org/10.1016/J.JFINECO.2008.09.003

Le, T. (2021). Can foreign ownership reduce bank risk? Evidence from Vietnam. *SSRN Electronic Journal*. https://doi.org/10.2139/SSRN.3878912

Le, T. D. Q. (2020). The interrelationship among bank profitability, bank stability, and loan growth: Evidence from Vietnam. *Cogent Business & Management*, *7*(1). https://doi.org/10.1080/23311975.2020.1840488

Le, T. P. V., & Phan, T. B. N. (2017). Capital structure and firm performance: Empirical evidence from a small transition country. *Research in International Business and Finance*, *42*, 710–726. https://doi.org/10.1016/J.RIBAF.2017.07.012

Li, J. (2023). *The Impact of Economic Policy Uncertainty on Bank Stability*. 1355–1371. https://doi.org/10.1007/978-981-99-6441-3_123

Liu, G. (2023). China's Economic Policy Uncertainty and China Commodity Futures Company Performance. *Frontiers in*

Business, Economics and Management, *8*(2), 129–133. https://doi.org/10.54097/FBEM.V8I2.7125

Louati, S., & Boujelbene, Y. (2020). Inflation targeting and bank risk: The interacting effect of institutional quality. *Cogent Business & Management*, *7*(1). https://doi.org/10.1080/23311975.2020.1847889

Meng, X., Guo, H., & Li, J. (2023). Economic policy uncertainty and corporate investment: evidence from China. *Economic Change and Restructuring*, *56*(6), 4491–4529. https://doi.org/10.1007/S10644-023-09564-Y

Mohammed, U., Adamu, M., Umar, M., & Maijama'a, D. (2014). Mohammed Umar, Danjuma Maijama'a, Mohammad Adamu. Conceptual Exposition of the Effect of Inflation on Bank Performance. *Article in Journal of World Economic Research*, *3*(5), 55–59. https://doi.org/10.11648/j.jwer.20140305.11

Nguyen Quoc, A. (2022). Impact of Foreign Ownership on Liquidity Risk: Empirical Evidence in Vietnamese Commercial Banks. *International Journal of Research and Review (Ijrrjournal.Com)*, *9*, 12. https://doi.org/10.52403/ijrr.20221218

Nguyen, Q. K. (2020). Ownership structure and bank risk-taking in ASEAN countries: A quantile regression approach. *Cogent Economics and Finance*, *8*(1). https://doi.org/10.1080/23322039.2020.1809789

Nicolo, M. De, & Boyd, J. (2003). *Bank risk-taking and competition revisited*.

Nicolo, M. De, Boyd, J., & Jalal, A. (2006). *Bank risk-taking and competition revisited: New theory and new evidence*.

Ozili, P. K. (2022). Economic policy uncertainty, bank nonperforming loans and loan loss provisions: are they correlated? *Asian Journal of Economics and Banking*, *6*(2), 221–235. https://doi.org/10.1108/ajeb-10-2021-0119

Papadamou, S., & Pitsilkas, K. (2023). *Components of Economic Policy Uncertainty and Their Long-Term Relationship to Npls, Unemployment, Bank Capital, and Liquidity Measures*. https://doi.org/10.2139/SSRN.4484579

Pham, T. T., Dao, L. K. O., & Nguyen, V. C. (2021). The determinants of bank's stability: a system GMM panel analysis. *Cogent Business and Management*, *8*(1). https://doi.org/10.1080/23311975.2021.1963390

Rahim, A., Rahim, A., Muriu, P. W., & Sule, O. (2019). Banking Concentration and Financial Stability: New Evidence from a Developing Country. *European Journal of Business and Management*, *11*(25), 73–91. https://www.iiste.org/Journals/index.php/EJBM/article/view/49451

S&P Global Market Intelligence. (2023) *Chinese banks enter 2023 in worse shape than global peers; more risks ahead.* https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/chinese-banks-enter-2023-in-worse-shape-than-global-peers-more-risks-ahead-73464612

Sadaula, S., & Hamal, J. B. (2022). Ownership Structure, Deregulation and Bank Risk in Nepalese Commercial Banks. *Journal of Bhuwanishankar*, *1*(1), 23–35. https://doi.org/10.3126/JOBS.V1I1.49492

Shehzad, C. T., de Haan, J., & Scholtens, B. (2010). The impact of bank ownership concentration on impaired loans and capital adequacy. *Journal of Banking & Finance*, *34*(2), 399–408. https://doi.org/10.1016/J.JBANKFIN.2009.08.007

Shirley, M., Bank, J. N. W., Economic, (1991). Public enterprise reform. *Documents1.Worldbank.OrgM Shirley, J NellisThe Lessons of Experience. World Bank, Economic, 1991•documents1.Worldbank.Org*. Retrieved February 26, 2024, from

https://documents1.worldbank.org/curated/pt/156711468779074142/pdf/multi-page.pdf

Shleifer, A., & Vishny, R. W. (1997). A Survey of Corporate Governance. *The Journal of Finance*, *52*(2), 737–783. https://doi.org/10.1111/J.1540-6261.1997.TB04820.X

Srairi, S. (2013). Ownership structure and risk-taking behaviour in conventional and Islamic banks: Evidence for MENA countries. *Borsa Istanbul Review*, *13*(4), 115–127. https://doi.org/10.1016/j.bir.2013.10.010

Wang, C., & Zhuang, L. (2022). Bank liquidity and the risk-taking channel of monetary policy: An empirical study of the banking system in China. *PLOS ONE*, *17*(12), e0279506. https://doi.org/10.1371/JOURNAL.PONE.0279506

Wang, Y., Chen, C. R., & Huang, Y. S. (2014). Economic policy uncertainty and corporate investment: Evidence from China. *Pacific-Basin Finance Journal*, *26*, 227–243. https://doi.org/10.1016/J.PACFIN.2013.12.008

Yu, H., Lv, W., Liu, H., & Wang, J. (2022). Economic Policy Uncertainty and Corporate Bank Credits: Evidence from China. *Emerging Markets Finance and Trade*, *58*(11), 3023–3033. https://doi.org/10.1080/1540496X.2021.2021179

Yuan, C., & Sun, P. (2023). Economic Policy Uncertainty and Financial Innovation: Evidence from Commercial Bank in China. *Advances in Economics, Management and Political Sciences*, *2*(1), 36–48. https://doi.org/10.54254/2754-1169/2/2023018

Zhang, J., Wang, L., Economics, S. W.-J. of C., & 2012, undefined. (2012). Financial development and economic growth: Recent evidence from China. *Elsevier*. https://doi.org/10.2139/ssrn.1983654

Zhang, R., & Wang, S. (2023). Economic Policy Uncertainty and Bank Stability: An Analysis Based on the Intermediary Effects of Opacity. *Sustainability 2023, Vol. 15, Page 4084*, *15*(5), 4084. https://doi.org/10.3390/SU15054084

ISSN 2076-9202

AI-DRIVEN AUTOMATION IN WAREHOUSE MANAGEMENT

ENHANCING EFFICIENCY AND ACCURACY

Dr. Jia-Chi Tsou
Department of Business Administration,
China University of Technology,
No. 530, Sec. 3, Jung Shan Rd., Hu Kou Township, Hsinchu County, Taiwan 303.
Tel: (+886-3) 437-8362, Fax: (+886-3) 437-8362
E-mail: jtsou.tw@yahoo.com.tw

Abstract

The integration of artificial intelligence (AI) technologies in warehouse management has emerged as a transformative solution to enhance operational efficiency and accuracy in supply chain logistics. This research paper explores the impact of AI-driven automation on warehouse operations, highlighting key benefits, challenges, and future trends shaping the industry.

The paper begins with an introduction to warehouse management and the importance of automation in meeting evolving customer demands. It delves into AI technologies such as machine learning, computer vision, robotics, and natural language processing, showcasing their specific applications in optimizing warehouse workflows. Through case studies of industry leaders like Amazon, JD.com, and DHL, the paper illustrates successful implementations of AI-driven automation and identifies best practices for organizations.

Efficiency improvements achieved through AI adoption include optimized resource utilization, dynamic routing, and predictive analytics for demand forecasting. Accuracy enhancements are realized through real-time inventory tracking, automated quality control, and error reduction in order processing. Furthermore, cost savings and operational excellence are demonstrated through lower labor costs, optimized space utilization, and improved supply chain performance.

The paper concludes with recommendations for organizations seeking to leverage AI technologies in warehouse management, emphasizing the importance of defining clear objectives, investing in AI talent and training, and embracing collaborative robotics. Future research directions include exploring ethical AI practices, human-centric design approaches, and AI-enabled supply chain optimization.

1. Introduction

Warehouse management is a critical component of modern supply chains, responsible for the efficient storage, handling, and distribution of goods. In recent years, the adoption of automation technologies, particularly artificial intelligence (AI), has transformed traditional warehouse operations, offering new avenues to enhance efficiency and accuracy.

Warehouse management involves overseeing the movement and storage of goods within a warehouse facility

ISSN 2076-9202

to optimize operational efficiency and meet customer demands. Effective warehouse management is essential for minimizing costs, reducing fulfillment times, and ensuring accurate inventory control. However, traditional manual methods often struggle to keep pace with the complexities of modern supply chains.

The significance of efficient warehouse operations cannot be overstated. Warehouses serve as strategic nodes in the supply chain, facilitating the flow of goods from production to consumption. Timely and accurate management of inventory is crucial for meeting customer expectations and maintaining competitive advantage in dynamic markets.

Artificial intelligence (AI) technologies encompass a range of tools and algorithms that enable machines to perform cognitive tasks traditionally requiring human intelligence. In warehouse operations, AI is leveraged to automate repetitive tasks, optimize resource allocation, and make data-driven decisions in real-time.

The evolution of AI in logistics and supply chain management has revolutionized warehouse operations. AI-powered systems can analyze vast amounts of data, predict demand patterns, and optimize inventory levels more effectively than traditional methods. From predictive analytics to robotic automation, AI technologies offer a spectrum of applications to improve warehouse efficiency and accuracy.

2. Literature Review

AI-Driven Automation in Warehouse Management Enhancing Efficiency and Accuracy

How does AI technology improve warehouse management processes?

AI technology has revolutionized warehouse management processes by integrating various innovative techniques and tools. One of the key advantages of AI in warehouse management is its ability to optimize inventory levels, ensuring that warehouses maintain sufficient stock levels without overstocking or stockouts [1]. Moreover, AI techniques play a crucial role in enhancing demand forecasting accuracy, allowing warehouses to anticipate customer needs more effectively and efficiently [1]. By automating routine tasks, AI technology significantly improves efficiency in warehouse operations, reducing manual labor and potential errors [1]. Additionally, the implementation of robotics, facilitated by AI technology, streamlines various warehouse management processes, such as order fulfillment and inventory management, leading to enhanced operational efficiency [2]. Furthermore, AI technology provides predictive maintenance capabilities, enabling warehouses to preemptively address equipment breakdowns and maintenance needs, thus minimizing downtime and optimizing operational continuity [2][3]. Overall, the integration of AI technology in warehouse management not only streamlines operations and enhances accuracy but also reduces costs and improves overall supply chain performance, making warehouses smarter, more efficient, and sustainable in the fast-evolving logistics landscape [2][4].

What are the benefits of implementing AI-driven automation in warehouses?

The implementation of AI-driven automation in warehouses offers a myriad of advantages that are increasingly crucial in today's competitive landscape. One significant benefit is the reduction in labor costs achieved through warehouse automation, including AI-driven systems, which streamlines operations and decreases the need for manual labor [5]. By optimizing the workforce through AI-driven automation, warehouses can efficiently manage tasks such as picking, sorting, and packaging at high speeds, ultimately

ISSN 2076-9202

increasing productivity and enhancing customer satisfaction [5][2]. Furthermore, AI-driven automation helps reduce reliance on human labor, particularly advantageous during peak periods and in environments with escalating hourly wages, ensuring operations remain cost-effective and efficient [5]. The role of AI in warehouse operations is expanding as the demand for swift and accurate order fulfillment rises, underscoring the necessity for businesses to adopt AI-driven solutions to stay competitive [6]. Additionally, deploying AI-supported robots in warehouses not only enhances safety but also contributes to seamless, predictive, and autonomous operations, reducing the risk of workplace accidents and increasing overall efficiency [2][1]. In summary, the tangible benefits of implementing AI-driven automation in warehouses are becoming increasingly apparent, with companies showcasing improved productivity, reduced errors, and optimized inventory management, positioning AI as a strategic asset that propels businesses forward in the dynamic logistics and e-commerce landscape [6][7][1].

What challenges may arise when integrating AI into warehouse operations?

When integrating AI into warehouse operations, various challenges must be acknowledged and addressed for successful implementation. One critical concern is the issue of data privacy and security, as AI systems rely heavily on data to function effectively [4]. Additionally, the need for skilled personnel to develop, maintain, and operate AI systems poses a challenge, highlighting the importance of investing in human capital for the successful integration of AI in warehouses [4]. Furthermore, the high initial costs of implementing AI technologies necessitate a clear understanding of the return on investment to justify such expenditures [4]. Another significant challenge is the potential for biased data to lead to biased AI outputs, emphasizing the importance of ensuring data quality and integrity in warehouse operations.Moreover, the complexity of integrating AI algorithms for predictive maintenance to enhance efficiency and reduce downtime in warehouse equipment presents a technical challenge that must be navigated.Overall, while AI technologies offer promising advancements for warehouse operations, addressing challenges such as data security, skilled labor requirements, cost considerations, data biases, and technical complexities is crucial for successful integration.

3. AI Technologies in Warehouse Management

Artificial intelligence (AI) technologies have revolutionized warehouse management, offering advanced tools and capabilities to optimize processes, improve decision-making, and enhance overall efficiency and accuracy within warehouse operations. This section explores key AI technologies used in warehouse management and their specific applications.

AI encompasses a diverse set of technologies that enable machines to mimic human cognitive functions, including machine learning, computer vision, natural language processing, and robotics. Each of these technologies plays a unique role in transforming warehouse operations:

Machine Learning (ML): Machine learning algorithms analyze historical data to identify patterns and make predictions. In warehouse management, ML is used for:

Demand forecasting: Predicting future demand patterns based on historical sales data, weather conditions, and market trends.

ISSN 2076-9202

Inventory optimization: Optimizing inventory levels to minimize stockouts and reduce holding costs while meeting customer demand.

Computer Vision: Computer vision systems use cameras and image processing algorithms to interpret visual information. In warehouses, computer vision technologies enable:

Automated picking and packing: Identifying and locating items on shelves for efficient order fulfillment.

Quality control: Inspecting products for defects and ensuring compliance with quality standards.

Natural Language Processing (NLP): NLP enables machines to understand and generate human language. In warehouse management, NLP technologies support:

Voice-activated picking: Allowing workers to interact with warehouse systems using voice commands for hands-free operations.

Automated documentation: Generating reports and updating inventory records based on verbal input.

Robotics and Automation: Robotics technologies automate repetitive tasks and enable autonomous operations within warehouses. AI-powered robots are employed for:

- Material handling: Transporting goods between storage areas and loading docks.
- Order fulfillment: Collaborating with human workers to assemble and package orders for shipment.

Specific Applications of AI in Warehouse Operations

AI technologies are applied across various aspects of warehouse operations to enhance efficiency and accuracy:

- Dynamic Routing and Optimization: AI algorithms optimize the movement of goods within warehouses, reducing travel time and maximizing resource utilization.
- Predictive Maintenance: AI-driven predictive analytics anticipate equipment failures and schedule maintenance proactively to minimize downtime.
- Real-time Inventory Management: AI-powered systems provide real-time visibility into inventory levels, enabling accurate stock tracking and replenishment.
- Quality Assurance: Computer vision systems inspect products for defects and deviations from quality standards, ensuring only compliant items are shipped to customers.
- Labor Optimization: AI algorithms allocate tasks to human workers and robots based on workload and skillsets, maximizing productivity and minimizing idle time.

Integration with Warehouse Management Systems (WMS)

AI technologies are integrated into existing warehouse management systems (WMS) to enhance capabilities and streamline operations. Modern WMS platforms leverage AI-driven insights to:

- Optimize order fulfillment processes based on demand forecasts and inventory availability.
- Provide intelligent recommendations for warehouse layout and inventory placement to minimize travel time and optimize space utilization.
- Enable adaptive decision-making by continuously learning from operational data and adjusting strategies in real-time.

In conclusion, AI technologies offer transformative opportunities to enhance efficiency and accuracy in warehouse management. By leveraging machine learning, computer vision, natural language processing, and robotics, organizations can optimize processes, reduce costs, and improve overall supply chain performance.

ISSN 2076-9202

The next section will delve into the specific benefits of AI-driven warehouse automation and explore case studies showcasing successful implementations in real-world warehouse environments.

4. Benefits of AI-Driven Warehouse Automation

The integration of artificial intelligence (AI) technologies in warehouse management brings forth a multitude of benefits, ranging from efficiency improvements to enhanced accuracy and quality control. This section explores the specific advantages of AI-driven automation in optimizing warehouse operations.

Efficiency Improvements

AI-driven warehouse automation significantly enhances operational efficiency through various mechanisms:

Optimized Resource Utilization: AI algorithms analyze historical data and real-time inputs to optimize resource allocation, including labor, equipment, and storage space. This results in streamlined workflows and reduced idle time, leading to overall efficiency gains.

Dynamic Routing and Inventory Management: AI-powered systems dynamically adjust routing and inventory placement based on demand forecasts and operational constraints. This ensures faster order fulfillment, reduced travel distances, and minimized stockouts.

Reduced Order Fulfillment Times: Automation of repetitive tasks such as picking, packing, and sorting accelerates order processing, enabling faster turnaround times and improved customer satisfaction.

Predictive Analytics for Demand Forecasting: Machine learning models predict future demand patterns with high accuracy, allowing warehouses to proactively adjust inventory levels and staffing requirements to meet fluctuating demand.

Accuracy Enhancements

AI technologies play a crucial role in improving accuracy and precision across warehouse operations:

Real-time Inventory Tracking: Computer vision and RFID (Radio Frequency Identification) technologies enable real-time tracking of inventory movements, minimizing discrepancies and ensuring accurate inventory records.

Automated Quality Control: AI-powered visual inspection systems detect product defects and deviations from quality standards with high precision, reducing the risk of shipping faulty items to customers.

Error Reduction in Order Processing: Automated picking and packing processes minimize human errors associated with manual handling, leading to improved order accuracy and fewer returns or exchanges.

Cost Savings and Operational Excellence

The implementation of AI-driven warehouse automation yields significant cost savings and operational efficiencies:

Lower Labor Costs: Automation reduces the reliance on manual labor for repetitive tasks, resulting in lower labor costs and improved workforce productivity.

Optimized Space Utilization: AI algorithms optimize inventory placement and storage configurations to maximize space utilization, reducing the need for additional storage facilities and associated costs.

Improved Overall Supply Chain Performance: By enhancing efficiency and accuracy within warehouses, AI-driven automation contributes to improved supply chain performance, including faster order processing, reduced lead times, and better inventory management.

ISSN 2076-9202

Enhanced Decision-Making and Adaptability

AI technologies empower warehouse managers with actionable insights and adaptive decision-making capabilities:

Data-driven Decision Support: AI-driven analytics provide real-time visibility into warehouse operations, enabling managers to make informed decisions based on data-driven insights rather than intuition or guesswork.

Adaptive Operations Planning: AI algorithms continuously learn from operational data and adjust strategies in response to changing market conditions, ensuring adaptive and responsive warehouse operations.

In summary, AI-driven warehouse automation offers a myriad of benefits, including efficiency improvements, accuracy enhancements, cost savings, and enhanced decision-making capabilities. By leveraging AI technologies, organizations can optimize their warehouse operations and drive overall supply chain excellence.

The next section will delve into the challenges and implementation considerations associated with adopting AI-driven warehouse automation, providing insights and recommendations for successful deployment in real-world warehouse environments.

5. Challenges and Implementation Considerations

While the adoption of artificial intelligence (AI) in warehouse management promises significant benefits, organizations face various challenges and considerations when implementing AI-driven automation. This section explores common obstacles and best practices for successful deployment of AI technologies in warehouse environments.

High Initial Investment Costs

One of the primary challenges associated with AI implementation in warehouse management is the high initial investment costs. Acquiring and integrating AI technologies, including hardware, software, and infrastructure upgrades, requires substantial financial resources. Organizations must carefully assess the return on investment (ROI) and long-term benefits of AI adoption to justify the upfront costs.

Integration with Existing Systems

Integrating AI technologies with existing warehouse management systems (WMS) can be complex and challenging. Legacy systems may lack compatibility with modern AI solutions, necessitating custom integration and data migration efforts. Seamless integration is crucial to ensure interoperability and avoid disruptions in warehouse operations during implementation.

Data Quality and Availability

The effectiveness of AI algorithms relies heavily on the quality and availability of data. Inaccurate or incomplete data can lead to biased insights and suboptimal decision-making. Organizations must invest in data quality assurance processes, including data cleansing, normalization, and validation, to ensure the reliability and integrity of input data for AI systems.

Workforce Readiness and Training

AI-driven warehouse automation requires a skilled workforce capable of operating and maintaining AI-powered systems. Implementing AI technologies often necessitates workforce training and upskilling

ISSN 2076-9202

initiatives to ensure employees are proficient in using new tools and technologies. Resistance to change and concerns about job displacement may also pose challenges during the adoption phase.

Ethical and Regulatory Considerations

AI technologies raise ethical and regulatory concerns related to data privacy, security, and algorithmic bias. Organizations must adhere to ethical guidelines and regulatory frameworks governing AI use in warehouse operations, ensuring transparency, fairness, and accountability in decision-making processes. Proactive measures such as conducting impact assessments and establishing governance frameworks can mitigate potential risks associated with AI adoption.

Scalability and Adaptability

Warehouse environments are dynamic and subject to evolving operational requirements. AI solutions must be scalable and adaptable to accommodate changes in demand, inventory volumes, and process workflows over time. Organizations should prioritize flexible AI architectures that can be easily modified and expanded to support future growth and innovation.

Best Practices for Successful AI Implementation

To overcome challenges and maximize the benefits of AI-driven warehouse automation, organizations should consider the following best practices:

Define Clear Objectives: Clearly define the business objectives and expected outcomes of AI adoption to align technology investments with strategic goals.

Collaborate Cross-functionally: Foster collaboration between IT, operations, and business teams to ensure holistic planning and implementation of AI initiatives.

Start Small, Scale Gradually: Begin with pilot projects to validate AI capabilities and gradually scale implementation based on performance and ROI.

Invest in Talent Development: Provide comprehensive training programs and skill development opportunities to empower employees to leverage AI technologies effectively.

Monitor and Evaluate Performance: Continuously monitor AI performance metrics and user feedback to identify areas for improvement and optimization.

Stay Abreast of Regulatory Changes: Stay informed about evolving regulations and compliance requirements to maintain ethical and responsible AI practices.

In conclusion, while AI-driven warehouse automation presents transformative opportunities for improving efficiency and accuracy, organizations must navigate various challenges and considerations during implementation. By addressing these challenges proactively and adopting best practices, organizations can harness the full potential of AI technologies to optimize warehouse operations and drive competitive advantage in the evolving logistics landscape.

The subsequent section will explore real-world case studies and practical examples of successful AI implementations in warehouse management, showcasing best practices and lessons learned from industry leaders.

6. Case Studies and Practical Examples

Real-world case studies and practical examples illustrate the transformative impact of AI-driven automation

ISSN 2076-9202

in warehouse management. This section showcases successful implementations of AI technologies, highlighting best practices and lessons learned from industry leaders.

Case Study 1: Amazon Robotics



Figure 1. Amazon Robotics [8]

Amazon, a global e-commerce giant, has pioneered the use of robotics and AI in warehouse operations through its Amazon Robotics division. Amazon's fulfillment centers leverage thousands of autonomous robots equipped with AI-powered navigation systems to automate order fulfillment processes. These robots efficiently navigate through warehouses, transporting shelves of goods to human workers for order picking and packing. The integration of robotics and AI has enabled Amazon to significantly improve operational efficiency, reduce order processing times, and enhance overall customer satisfaction.

Key Takeaways:

- Seamless integration of robotics with AI technologies optimizes order fulfillment workflows.
- Enhanced efficiency and accuracy achieved through human-robot collaboration in warehouse operations.

Case Study 2: JD.com's Smart Warehouses



Figure 2. JD Logistics Kunshan Asia No.1 Intelligent Logistics Park [9]

JD.com, a leading Chinese e-commerce company, operates a network of smart warehouses powered by AI and IoT technologies. JD's smart warehouses leverage AI algorithms to predict demand patterns, optimize inventory levels, and automate order processing. AI-driven robots handle tasks such as inventory

ISSN 2076-9202

replenishment, sorting, and packing, while machine learning models optimize delivery routes for maximum efficiency. JD.com's smart warehouses have significantly reduced operational costs, minimized fulfillment errors, and improved delivery speed across its supply chain.

Key Takeaways:

- AI-enabled predictive analytics and robotic automation optimize end-to-end warehouse operations.
- Smart warehouses enhance supply chain agility and responsiveness to changing market demands.

Case Study 3: DHL Robotics Hub



Figure 3. DHL Wrapping Robot [10]

DHL, a global logistics company, has established a Robotics Hub in the Netherlands to pioneer innovative solutions for warehouse automation. The Robotics Hub integrates AI-powered robotics and autonomous vehicles to optimize order fulfillment processes. AI algorithms analyze real-time data to dynamically allocate tasks to robots, minimizing congestion and maximizing throughput. DHL's Robotics Hub exemplifies how AI-driven automation can revolutionize traditional warehouse operations, enabling faster delivery times, reducing carbon emissions, and improving overall operational efficiency.

Key Takeaways:

- Robotics and AI technologies enhance operational flexibility and scalability in warehouse management.
- AI-driven optimization leads to sustainable logistics practices and reduced environmental impact.

Lessons Learned and Best Practices

The case studies highlight several key lessons and best practices for successful AI implementation in warehouse management:

Holistic Approach: Embrace a holistic approach to warehouse automation by integrating AI technologies with existing systems and processes.

Human-Robot Collaboration: Foster collaboration between human workers and AI-driven robots to maximize efficiency and accuracy in warehouse operations.

ISSN 2076-9202

Continuous Innovation: Embrace a culture of continuous innovation and experimentation to leverage the full potential of AI technologies in logistics and supply chain management.

Adaptive Strategy: Develop adaptive strategies that allow for scalability and flexibility in response to evolving market dynamics and customer expectations.

Data-Driven Decision Making: Harness the power of data-driven insights to optimize warehouse workflows, improve resource utilization, and enhance customer satisfaction.

In conclusion, real-world case studies demonstrate the transformative impact of AI-driven automation on warehouse management. By adopting best practices and lessons learned from industry leaders such as Amazon, JD.com, and DHL, organizations can harness the full potential of AI technologies to optimize warehouse operations, drive supply chain efficiency, and gain competitive advantage in the rapidly evolving logistics landscape.

7. Future Trends and Research Directions

The future of warehouse management is shaped by emerging technologies and innovative advancements in artificial intelligence (AI). This section explores key trends and research directions that are poised to transform the landscape of AI-driven automation in warehouse operations.

Emerging Technologies in AI-Driven Warehouse Automation

Advanced Robotics: The evolution of robotics technologies continues to drive innovation in warehouse automation. Future trends include the adoption of collaborative robots (cobots) that work alongside human operators, as well as the development of more agile and adaptable robotic systems for complex tasks such as unloading/loading and high-speed sorting.

Edge Computing and IoT Integration: Edge computing enables real-time data processing and decision-making at the edge of the network, reducing latency and improving responsiveness in warehouse environments. Integrated with Internet of Things (IoT) devices, edge computing facilitates predictive analytics and proactive maintenance of equipment and assets.

Autonomous Vehicles: The deployment of autonomous mobile robots (AMRs) and drones for material handling and inventory management is expected to increase. These autonomous vehicles leverage AI algorithms for navigation and obstacle avoidance, enabling efficient and flexible warehouse operations.

Augmented Reality (AR) and Wearable Devices: AR technologies enhance warehouse operations by providing visual guidance and instructions to workers during picking, packing, and sorting tasks. Wearable devices equipped with AR interfaces improve worker productivity and reduce training time.

Research Directions in AI-Driven Warehouse Management

AI-Enabled Predictive Analytics: Future research will focus on enhancing predictive analytics capabilities using AI, enabling more accurate demand forecasting, inventory optimization, and proactive decision-making in warehouse management.

Explainable AI (XAI): Research efforts will address the need for explainable AI models in warehouse operations, ensuring transparency and interpretability of AI-driven decision-making processes to gain trust and acceptance among stakeholders.

ISSN 2076-9202

Human-Robot Collaboration and Safety: Research will explore safe and efficient human-robot collaboration strategies in warehouse environments, including ergonomic design considerations and adaptive control systems for dynamic task allocation.

Optimization of Multi-Agent Systems: Future studies will investigate optimization techniques for coordinating multiple autonomous agents (robots, vehicles) within warehouse settings, focusing on resource allocation, task scheduling, and path planning to minimize congestion and maximize efficiency.

Challenges and Opportunities

While the future of AI-driven warehouse automation holds immense promise, several challenges must be addressed:

- Ethical and Regulatory Concerns: Addressing ethical considerations related to AI adoption, including data privacy, algorithmic bias, and responsible use of autonomous systems.
- Integration Complexity: Overcoming integration challenges associated with interoperability of AI technologies with existing warehouse infrastructure and legacy systems.
- Workforce Transformation: Ensuring workforce readiness through continuous training and upskilling to adapt to changing roles in AI-enabled warehouse environments.

8. Conclusion

In conclusion, the integration of artificial intelligence (AI) technologies in warehouse management holds immense potential to enhance operational efficiency, improve accuracy, and drive innovation in supply chain logistics. This section summarizes key findings and offers actionable recommendations for organizations looking to leverage AI-driven automation in warehouse operations.

Summary of Key Findings

Throughout this research paper, we have explored the transformative impact of AI technologies on warehouse management:

Efficiency Improvements: AI-driven automation streamlines warehouse workflows, optimizes resource utilization, and accelerates order fulfillment processes.

Accuracy Enhancements: AI-powered systems ensure accurate inventory tracking, minimize errors in order processing, and improve quality control measures.

Cost Savings and Operational Excellence: AI adoption reduces labor costs, optimizes space utilization, and enhances overall supply chain performance.

Decision-Making Empowerment: AI provides actionable insights and enables adaptive decision-making based on real-time data and predictive analytics.

Recommendations for Organizations

Based on our research findings, the following recommendations are proposed for organizations seeking to implement AI-driven automation in warehouse management:

Define Clear Objectives: Clearly articulate business objectives and expected outcomes of AI adoption to align technology investments with strategic goals.

Invest in AI Talent and Training: Develop a skilled workforce capable of operating and maintaining AI technologies through comprehensive training and upskilling programs.

ISSN 2076-9202

Pilot Test AI Solutions: Start with pilot projects to evaluate the performance and feasibility of AI technologies in warehouse environments before full-scale deployment.

Leverage Data for Insights: Harness the power of data-driven insights to optimize warehouse operations, improve inventory management, and enhance customer satisfaction.

Embrace Collaborative Robotics: Foster human-robot collaboration to maximize efficiency and flexibility in warehouse operations, leveraging AI-powered robotics for repetitive tasks.

Future Research Directions

The future of AI-driven warehouse automation presents exciting research opportunities:

Ethical AI Practices: Further research is needed to address ethical considerations surrounding AI adoption, including transparency, fairness, and accountability in decision-making processes.

Human-Centric Design: Explore innovative approaches to designing AI-powered warehouse environments that prioritize worker safety, ergonomics, and user experience.

AI-Enabled Supply Chain Optimization: Investigate advanced AI techniques for optimizing end-to-end supply chain operations, including demand forecasting, inventory optimization, and transportation management.

Sustainable Logistics: Develop AI-driven strategies to promote sustainability in warehouse management, such as energy-efficient operations and eco-friendly packaging solutions.

References

1. Future Proof Your Warehouse Management with AI. (n.d.) retrieved April 15, 2024, from www.linkedin.com

2. Positive impacts and applications of AI in warehouse management. (n.d.) retrieved April 15, 2024, from worldcraftlogistics.com

3. Seven benefits of AI in warehouse operations - Element Logic UK. (n.d.) retrieved April 15, 2024, from www.elementlogic.co.uk

4. The Future of Warehousing: Exploring AI in Warehouse Management. (n.d.) retrieved April 15, 2024, from softlinkglobal.com

5. The Future of Warehousing: How AI is Transforming Inventory Management and Order Fulfillment. (n.d.) retrieved April 15, 2024, from rtslabs.com/ai-warehouse-automation-picking-optimization

6. How Warehouse Automation Enhances Accuracy and Efficiency. (n.d.) retrieved April 15, 2024, from www.getproductiv.com

7. AI Revolutionizing Warehouse Management. (n.d.) retrieved April 15, 2024, from www.linkedin.com

8. The story behind Amazon's next generation robot (n.d.) retrieved March 11, 2019, from https://www.aboutamazon.com/

9. JD.com's JD Logistics Unveils World's Largest Intelligent Logistics Park with Integrated Warehousing and Sorting Capabilities (n.d.) retrieved June 14, 2023, from https://jdcorporateblog.com/

10. DHL Wrapping Robot. (n.d.), retrieved April 15, 2024, from https://www.dhl.com/

ISSN 2076-9202

FACTORS NECESSARY IN LEADING TO DEVELOPMENT OF THE EDUCATION SYSTEM IN INDIA

Dr. Radhika Kapur
Design thinker and Visiting Faculty at Delhi University, India

Abstract

In India, in rural and tribal communities, the system of education is not in a well-developed state. There is a need to bring about improvements in various aspects and approaches. In the present existence, with advancements taking place, there is a need to bring about improvements in modern, scientific and innovative teaching-learning methods and teaching-learning materials. The individuals in leadership positions are vested with the authority and responsibility of implementing all the factors that are necessary in leading to development of the education system. When they formulate norms, laws and rules, these need to be acknowledged and followed by all the members, irrespective of their job positions in the hierarchy. The members need to develop mutual understanding and work in collaboration and integration with each other. Furthermore, they need to reinforce the traits of morality, ethics, diligence, resourcefulness and conscientiousness in the implementation of various types of job duties. Therefore, it is understood in educational institutions of all levels that one needs to acquire an efficient understanding of the factors that are necessary in leading to development of the education system. The main concepts that are taken into account in this research paper are, understanding the meaning and significance of education, factors to be implemented in leading to up-gradation of the system of education in rural and tribal communities and up-gradation of the education system in rural and tribal communities will promote community well-being.

Keywords: Communities, Development, Education System, Measures, Performance, Programs, Students, Teachers

In India, more than 70 percent of the population resides in rural areas. In rural and tribal communities, both men and women are overwhelmed by the societal problems of poverty, illiteracy, unemployment, homelessness and various types of criminal and violent acts. The problem of illiteracy is regarded as one of the major impediments within the course of bringing about improvements in one's overall standards of living. As a result of illiteracy, women remain unaware in terms of various factors. In the present existence, with advancements taking place, there have been formulation of measures and programs that are leading to progressions within the course of acquisition of education. The girls and women are recognizing the meaning and significance of education. They have understood that education is the instrument which will not only impart them information in terms of academic subjects, but all the factors that are necessary to emerge into moral human beings and productive citizens of the country. In rural and tribal communities, the system of education is not in a well-developed state. Hence, women are migrating to urban communities to

ISSN 2076-9202

acquire education. Therefore, acquisition of education is indispensable for women, belonging to rural and tribal communities.

In rural and tribal communities in some households, the birth of girls is not appreciated. In other words, more preference is given to male children. These individuals were of the viewpoint that male children will render a significant contribution in promoting well-being of their families and communities, provided, they are given opportunities to do so. On the other hand, girls are trained from the stage of early childhood in terms of ways of implementation of household chores. As a consequence, they were discouraged from acquisition of education. But in the present existence, there have been transformations taking place in the viewpoints of these individuals and they are encouraging their girls towards acquisition of education (Discover a Limitless World of Learning, 2021). In rural and tribal schools, the teaching-learning methods, teaching-learning materials and instructional strategies are not in a well-developed state. But the students are getting enrolled in them and are focusing upon up-gradation of literacy skills and achievement of educational goals. Therefore, it is well-understood that acquisition of education is indispensable for women, irrespective of their age groups, occupations and communities.

In schools in rural and tribal communities, there is a need to bring about improvements in teaching-learning methods, teaching-learning materials and instructional strategies. These are regarded as key factors that promote student learning and bring about improvements in the overall system of education. The teachers are vested with the authority and responsibility of promoting student learning (Pandey, 2020). They need to make use of teaching-learning methods, teaching-learning materials and instructional strategies in accordance to various aspects, i.e. needs and requirements of students, academic subjects and lessons plans, educational goals, grade levels of students and the overall system of education. In the present existence, in order to promote student learning, there is a need to make use of modern, scientific and innovative methods. The teachers need to understand the academic problems of students and put in efforts to their best abilities to help them. The teachers need to be well-versed in terms of academic subjects and prepare themselves well. Therefore, role of the teachers is regarded to be of utmost significance in promoting student learning and leading to up-gradation of the overall system of education.

In educational institutions of all levels, there is a need to implement assessment strategies. The primary objective of assessment strategies is to assess the academic performance of students. After the instructors have imparted them information in terms of academic subjects, they put into operation the measures to assess the performance of students. The various types of assessment strategies are, class assignments, homework assignments, tests, exams, competitions, quizzes, and so forth. Furthermore, the instructors also identify whether teaching-learning methods, teaching-learning materials and instructional strategies are utilized in a well-ordered manner or there is a need to bring about improvements. The various factors that are taken into account in the implementation of assessment strategies are, needs and requirements of students, academic subjects and lessons plans, educational goals, grade levels of students and the overall system of education. Therefore, assessment strategies are regarded as indispensable to facilitate student learning in an effective manner and lead to enhancement of the overall system of education.

Understanding the Meaning and Significance of Education

In rural and tribal communities, girls and women are recognizing the meaning and significance of

ISSN 2076-9202

education. They have understood that education is the instrument which will not only impart them information in terms of academic subjects, but all the factors that are necessary to emerge into moral human beings and productive citizens of the country. They are migrating to urban communities to get enrolled in higher educational institutions. They are making selection of different fields in accordance to their interests and abilities and enhancing their career prospects. When the career prospects of these women will be enhanced, they will contribute in an efficacious manner in acquiring empowerment opportunities. As a consequence, they will pay adequate attention in leading to up-gradation of their overall standards of living. Within the course of pursuance of education, there are occurrence of various types of problems and challenges. But when women are determined, they will be able to cope with various types of problems and challenges in an efficacious manner. Therefore, when women will live better lives, they will understand the meaning and significance of education.

In the achievement of desired goals and objectives, the various factors that need to be taken into account are, inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; depicting the traits of efficiency, honesty and righteousness; being well-versed in terms of job duties and responsibilities; forming cordial and amiable terms and relationships with others; making wise and productive decisions; implementing time management skills; providing solutions to various problems in an effective manner; augmenting knowledge, competencies and abilities; making use of modern, scientific and innovative methods and conducting research on regular basis. The parents at home and teachers in schools are required to generate information among girls and women in terms of these factors. In case of occurrence of any problems and challenges, they need to make provision of help and support. Therefore, it can be stated, utilization of these factors in an efficient manner will enable rural and tribal women to understand the meaning and significance of education.

Factors to be implemented in Leading to Up-gradation of the System of Education in Rural and Tribal Communities

In rural and tribal communities, there is a need to formulate laws, measures, and programs, which would lead to up-gradation of the overall system of education. Apart from teaching-learning methods, teaching-learning materials and instructional strategies, there is a need to bring about improvements in extra-curricular and creative activities. The research studies have indicated that women and girls, belonging to rural and tribal communities develop motivation towards various types of extra-curricular and creative activities. These are, artworks, handicrafts, singing, dancing, playing of musical instruments, role playing, taekwondo, gymnastics, sports and physical activities. When they are skilled at one or more of these activities, they even make selection of them to enhance their career prospects (Education International, 2021).

The educators and other members of the schools need to work in collaboration and integration with each other towards organization of seminars and workshops. When the instructors form the viewpoint that students need to be imparted with important information regarding a particular topic, they organize a seminar or a workshop. In these, the educators need to put into operation the measures and approaches, which would enable the students to acquire an efficient understanding of the academic subjects and lesson

ISSN 2076-9202

plans. When educators and students are provided with the opportunities to give presentations, they develop motivation towards learning and the implementation of other job duties. Apart from extra-curricular and creative activities and seminars and workshops, there are number of other factors to be implemented in leading to up-gradation of the system of education in rural and tribal communities. These are stated as follows:

Teaching-Learning Methods

Teaching-learning methods are the methods that are put into operation by the instructors and students. They need to work in collaboration and integration with each other to achieve academic goals. The various factors that are taken into account in the implementation of different types of teaching-learning methods are, needs and requirements of students, academic subjects and lessons plans, educational goals, grade levels of students and the overall system of education. In order to promote student learning in an effectual manner, there is a need to make use of modern, scientific and innovative methods.

The various types of teaching methods are, reading from the textbooks and explaining the concepts to the students, explaining the concepts on the black-board, asking students to read and then explaining them the concepts and so forth. On the other hand, the various types of learning methods are, reading and memorising the concepts, reading and making notes, utilizing other reading materials and so forth. The instructors and students are required to put in wholehearted efforts in the achievement of academic goals. Therefore, teaching-learning methods is a factor to be implemented in leading to up-gradation of the system of education in rural and tribal communities. This has been taken into account in order to facilitate understanding among students and helping them to achieve academic goals.

Teaching-Learning Materials

Teaching-learning materials are the ones that are put into operation by the instructors and students. These are the key to promote student learning and bring about developments in the overall system of education. The instructors and students need to make sure, these are put into operation in accordance to the needs and requirements of students, academic subjects and lessons plans, educational goals, grade levels of students and the overall system of education. Their main aim is to ensure, students are able to clear their doubts and acquire an efficient understanding of the academic subjects and lesson plans.

The different types of teaching-learning materials are, textbooks, articles, graphs, charts, pictures, images, designs, structures, diagrams, technologies and internet. In rural and tribal communities, the students are making use of mobile phones. The instructors and students are required to work in co-ordination with each other. They need to put in wholehearted efforts in the achievement of academic goals. In some cases, there are occurrence of problems within the course of up-gradation and utilization of teaching-learning materials. In such cases, the students approach their teachers to acquire help. Therefore, teaching-learning methods is a factor to be implemented in leading to up-gradation of the system of education in rural and tribal communities. This factor needs to be up-graded on regular basis in order to lead to up-gradation of the overall system of education.

ISSN 2076-9202

Instructional Strategies

Instructional strategies are the strategies as the name implies, the strategies of instructing students. The instructors need to put into operation efficacious and meaningful instructional strategies. Their primary goal is to promote student learning and bring about developments in the overall system of education. The instructors need to bring about transformations in instructional strategies. In order to promote student learning in a meaningful manner, there is a need to make use of modern, scientific and innovative methods.

The various types of instructional strategies are, reading from the textbooks and explaining the concepts to the students, explaining the concepts on the black-board, asking students to read and then explaining them the concepts, making use of technologies and then explaining the concepts, giving presentations through making use of technologies and other reading materials and so forth. In some cases, instructional strategies are not manageable, but inculcating the traits of diligence, resourcefulness and conscientiousness will enable the students to acquire an efficient understanding of the subjects. As a consequence, they will achieve academic goals. Therefore, instructional strategies is a factor to be implemented in leading to up-gradation of the system of education in rural and tribal communities. This factor needs to ensure that apart from academic subjects, the instructors should help students to emerge into moral human beings and productive citizens of the country.

Assessment Strategies

In educational institutions of all levels, there is a need to implement assessment strategies. The primary objective of assessment strategies is to assess the academic performance of students. Furthermore, the students and the instructors are also able to find out whether the job duties of the instructors are carried out well or there is a need to bring about improvements. After the instructors have imparted them information in terms of academic subjects, they put into operation the measures to assess the performance of students. The various types of assessment strategies are, class assignments, homework assignments, tests, exams, competitions, quizzes, and so forth. The students do feel apprehensive through utilization of these strategies, but they understand that they will prove to be useful in enhancing their performance and facilitating achievement of educational goals.

Furthermore, the instructors also identify whether teaching-learning methods, teaching-learning materials and instructional strategies are utilized in a well-ordered manner or there is a need to bring about improvements. The various factors that are taken into account in the implementation of assessment strategies are, needs and requirements of students, academic subjects and lessons plans, educational goals, grade levels of students and the overall system of education. Therefore, assessment strategies is a factor to be implemented in leading to up-gradation of the system of education in rural and tribal communities. This factor has proven to be advantageous to the instructors and students on a comprehensive basis.

Extra-Curricular and Creative Activities

The up-gradation of extra-curricular and creative activities not only lead to up-gradation in the overall system of education, but also develop motivation among students towards learning. The mind-sets of the students get stimulated and they develop positive viewpoints in terms of academic learning. There is a

ISSN 2076-9202

need to bring about improvements in extra-curricular and creative activities. The research studies have indicated that women and girls, belonging to rural and tribal communities develop motivation towards various types of extra-curricular and creative activities. These are, artworks, handicrafts, singing, dancing, playing of musical instruments, role playing, taekwondo, gymnastics, sports and physical activities. When they are skilled at one or more of these activities, they even make selection of them to enhance their career prospects. Whereas, in other cases, they are taken up as hobbies.

The individuals, belonging to rural and tribal communities are engaged in various types of extra-curricular and creative activities to earn their living. In other words, they are engaged in the production of artworks and handicrafts. At the time of festivals, occasions, celebrations and other events, they carry out the activities of singing, dancing, playing of musical instruments, and role playing. Therefore, extra-curricular and creative activities is a factor to be implemented in leading to up-gradation of the system of education in rural and tribal communities. This factor has rendered a significant contribution in development of motivation among rural and tribal students towards learning.

Seminars and Workshops

The educators and other members of the schools need to work in collaboration and integration with each other towards organization of seminars and workshops. When the instructors form the viewpoint that students need to be imparted with important information regarding a particular topic, they organize a seminar or a workshop. In these, the educators need to put into operation the measures and approaches, which would enable the students to acquire an efficient understanding of the academic subjects and lesson plans. When there are organization of seminars and workshops, not only students benefit, but other members also generate information in terms of ways to lead to up-gradation of the overall system of education.

When educators and students are provided with the opportunities to give presentations, they develop motivation towards learning and the implementation of other job duties. In most cases, there are other individuals, especially in leadership positions, who are invited from other educational institutions. They make presentations and give speeches. In this manner, they are able to facilitate efficient understanding among students in terms of academic subjects and lesson plans. Therefore, seminars and workshops is a factor to be implemented in leading to up-gradation of the system of education in rural and tribal communities. This factor has rendered a significant contribution in generation of information among students and instructors regarding concepts and ways of leading to up-gradation in the overall system of education.

Transportation System

The transportation system is regarded to be of utmost significance in achieving academic goals and leading to up-gradation of the overall system of education. The reason being, when transportation system will be in a well-developed state, the members will be able to commute to schools and return back home in a manageable manner. In rural and tribal communities, the students usually experience problems in transferring to schools and returning back home. The reason being, the transportation system is not in a well-developed state. There are lack of buses. In such cases, parents are responsible to take their children to

ISSN 2076-9202

schools and bring them back home.

When children are young, parents are required to pay adequate attention towards their children. On the other hand, older students normally make arrangements with their friends to go to schools and return back home. Hence, there is a need to formulate programs and measures to bring about improvements in the transportation system. When the transportation system will be in a well-developed state, the individuals will feel satisfied that they will send their children to schools. Therefore, transportation system is a factor to be implemented in leading to up-gradation of the system of education in rural and tribal communities. This factor has been regarded as significant to retain students, instructors as well as other members.

Infrastructure, Amenities and Facilities

The provision of infrastructure, amenities and facilities is regarded to be of utmost significance in concentrating well on job duties, achieving academic goals and leading to up-gradation of the overall system of education. The reason being, when these will be in a well-developed state, the students, instructors and other members will not only be able to concentrate on their job duties in a well-organized manner, but they will feel comfortable within the working environmental conditions. The various types of infrastructure, amenities and facilities are, water supplies, power supplies, restrooms, furniture, heating and cooling equipment in accordance to the weather conditions and provision of all the facilities that would make working environmental conditions pleasant and amiable.

Within the course of time, there is a need to bring about improvements in them. In rural and tribal schools, there is lack of furniture. As a consequence, students are made to sit on the floor. When they sit on the floor, they are experience problems in concentrating on their studies. The instructors in some cases also experience problems in putting into operation their job duties. Hence, it is indispensable to make use of resources to bring about improvements in infrastructure, amenities and facilities on a regular basis (Schools in Rural India, n.d.). Therefore, infrastructure, amenities and facilities is a significant factor to be implemented in leading to up-gradation of the system of education in rural and tribal communities.

Recruitment of Well-Qualified Teachers

When recruitment of teachers take place, there are various factors that need to be taken into account by the hiring authorities, i.e. educational qualifications, job experience, competencies, abilities, aptitude and personality traits. These factors are vital as teachers have an indispensable role to play in promoting student learning, achieving academic goals and leading to up-gradation of the overall system of education. The teachers are vested with the authority and responsibility of promoting student learning. They need to make use of teaching-learning methods, teaching-learning materials and instructional strategies in accordance to various aspects, i.e. needs and requirements of students, academic subjects and lessons plans, educational goals, grade levels of students and the overall system of education.

In the present existence, in order to promote student learning, there is a need to make use of modern, scientific and innovative methods. These are in some cases difficult, but getting engaged in regular practice will make the individuals feel comfortable with their usage. The teachers need to understand the academic problems of students and put in efforts to their best abilities to help them. The teachers need to be

ISSN 2076-9202

well-versed in terms of academic subjects and prepare themselves well. Therefore, role of the teachers is regarded to be of utmost significance in promoting student learning and leading to up-gradation of all the aspects in the system of education. Therefore, recruitment of well-qualified teachers is a vital factor to be implemented in leading to up-gradation of the system of education in rural and tribal communities.

Measures to Lead to Up-gradation of the System of Education

The measures that are necessary in leading to up-gradation of the system of education need to be put into operation on regular basis. In other words, they carry out the overall functioning of the system of education in an efficacious manner (Sustainable Development Goals, n.d.). Measures to lead to up-gradation of the system of education are in terms of various factors, i.e. teaching-learning methods, teaching-learning materials, instructional strategies, assessment strategies, extra-curricular and creative activities, seminars and workshops, transportation system, infrastructure, amenities and facilities, management of resources, implementation of managerial functions and putting into operation all the activities that would render a significant contribution in leading to up-gradation of the overall system of education.

In order to achieve the desired goals and objectives, all the members, irrespective of their job positions in the hierarchy need to be well-versed in terms of various factors. These are, inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; depicting the traits of efficiency, honesty and righteousness; being well-versed in terms of job duties and responsibilities; forming cordial and amiable terms and relationships with others; making wise and productive decisions; implementing time management skills; providing solutions to various problems in an effective manner; augmenting knowledge, competencies and abilities; making use of modern, scientific and innovative methods and conducting research on regular basis. When individuals in leadership positions, teachers, students and other members are acknowledging and implementing these factors, they will render an efficient contribution in honing competencies and abilities and achieving educational goals. Therefore, measures to lead to up-gradation of the system of education is a crucial factor to be implemented in leading to up-gradation of the system of education in rural and tribal communities.

Up-gradation of the Education System in Rural and Tribal Communities will Promote Community Well-being

In rural and tribal schools, the teaching-learning methods, teaching-learning materials and instructional strategies are not in a well-developed state. In other words, they need to be improved. There have been formulation of programs, which are putting emphasis upon up-gradation of all the factors that are putting emphasis on leading to effective functioning of the system of education. But the students are getting enrolled in them and are focusing upon up-gradation of literacy skills and achievement of educational goals. The students generate information in terms of number of factors that would lead to up-gradation of the overall living conditions. Hence, it is well-understood that acquisition of education is indispensable for women, irrespective of their age groups, occupations and communities. When women will be well-educated, they will contribute in a significant manner in promoting well-being of their families and communities. Therefore, it is understood that up-gradation of the education system in rural and tribal communities will

ISSN 2076-9202

promote community well-being.

The women are making selection of different fields to enrich their lives. These women are diligent and conscientious in the implementation of various job duties. The research studies have indicated that women in some cases develop motivation towards putting into operation various kinds of household job duties and achievement of personal goals. In other words, they are homemakers and take care of the needs and requirements of family members. They do not develop motivation towards learning of academic subjects. In order to generate a source of income, they get engaged in various types of extra-curricular and creative activities. These are, artworks, handicrafts, singing, dancing, playing of musical instruments, role playing, taekwondo, gymnastics, sports and physical activities. When they are skilled at one or more of these activities, they make use of them in sustaining their living conditions in an adequate manner. Hence, when improvements will take place in various types of extra-curricular and creative activities, the girls and women will enrich their living conditions. Therefore, it is acknowledged that up-gradation of the education system in rural and tribal communities will promote community well-being.

With advancements taking place, there have been formulation of programs focusing on progressions within the course of acquisition of education. The girls and women are supported by the family and community members to get enrolled in educational institutions and training centres. In rural and tribal communities, agriculture and farming practices are the primary occupations of the individuals. Both men and women are engaged in them. There are establishment of training centres that are imparting information among individuals in terms of modern, scientific and innovative methods. The utilization of these methods will contribute in a significant manner in leading to an increase in productivity and profitability. In this manner, it is understood that the up-gradation of the education system will hone the competencies and abilities of the individuals. They will make use of their competencies and abilities to bring about improvements in the agricultural sector and farming practices. Therefore, it is recognized on a comprehensive basis that up-gradation of the education system in rural and tribal communities will promote community well-being.

Conclusion

With advancements taking place, there have been formulation of programs focusing on progressions within the course of acquisition of education. The girls and women are recognizing the meaning and significance of education. They have understood that education is the instrument which will impart them information in terms of academic subjects, and factors necessary to emerge into moral human beings and productive citizens of the country. Factors to be implemented in leading to up-gradation of the system of education in rural and tribal communities are, teaching-learning methods, teaching-learning materials, instructional strategies, assessment strategies, extra-curricular and creative activities, seminars and workshops, transportation system, infrastructure, amenities and facilities, recruitment of well-qualified teachers and measures to lead to up-gradation of the system of education. Up-gradation of the education system in rural and tribal communities will promote community well-being. Finally, it can be stated, when measures will be put into practice in an adequate manner, the students will be able to acquire education at educational institutions of all levels to enrich their lives.

ISSN 2076-9202

Bibliography

Discover a Limitless World of Learning. (2021). Retrieved September 22, 2021 from education.com

Education International. (2021). Retrieved September 22, 2021 from ei-ie.org

Pandey, A. (2020). Growth of Education: Rural India. Retrieved September 22, 2021 from scicomm.in

Schools in Rural India – Seeking Immediate Attention. (n.d.). Hind Rise. Retrieved September 22, 2021 from google.co.in

Sustainable Development Goals. (n.d.). Quality Education. Retrieved September 22, 2021 from un.org

ISSN 2076-9202

IDENTIFICATION OF DETERMINANTS OF E-GOVERNMENT TRUST AND ITS IMPACTS ON E-GOVERNMENT SATISFACTION AND CITIZENS' CONTINUANCE INTENTION TO USE E-GOVERNMENT IN HO CHI MINH CITY, VIETNAM

Nhat Phuc Minh Nguyen
BABAIU20105@student.hcmiu.edu.vn
International University_Vietnam National University HCMC

Abstract
In today's digital age, it becomes crucial to grasp the multitude of factors that impact citizens' trust, satisfaction, and ongoing usage of these services. This study investigates the influence of e-government service quality, encompassing perceived transparency, accountability, and responsiveness, on trust in electronic government. Furthermore, it seeks to investigate the connections between confidence, satisfaction with e-government and the intention to continue using these services. The study included 455 participants who have been living and working in Ho Chi Minh City, Vietnam for an extended time. There is a clear link between the quality of e-government services and the level of public trust in e-government, as shown by the empirical investigation. In addition, the degree of trust and satisfaction in e-government plays a crucial role in determining the intention to keep positively using e-government services. These findings have important implications for governments looking to improve their service delivery via e-government platforms.

Keywords: *E-government, E-government Service Quality, Perceived Accountability, Perceived Transparency, Perceived Responsiveness, Perceived Security, Public Satisfaction, Public Trust, Continuance Intention to Use E-government, Vietnam.*

1. Introduction

Basu (2004) stated that governments around the world started implementing e-government programmes in the late 1900s, which went beyond the creation of simple websites. In addition, the COVID-19 pandemic has made it necessary to use information and communication technology (ICT) to reach government facilities (Mandari & Koloseni, 2023). The way technology is designed, adopted, and utilised by users has been significantly impacted by this new context, and these effects are anticipated to endure for a significant duration (Grinin et al., 2022). Thus, it is essential to extensively engage users of e-government services throughout the design, acceptance, and usage of such services. The connection between good governance and public trust in the government is strong, as the public depends on the government's policies, operations, and behaviours (Beshi & Kaur, 2020) to maintain the sustainability of e-government services.

ISSN 2076-9202

Vietnam seems poised to fully embrace e-government, given its substantial population of online and smart device users (H. N. Nguyen & Tran, 2022). However, the results achieved thus far have not been commensurate with the amount of effort put in. Vietnam is currently grappling with the task of moving from basic e-government services to more advanced technological processes that streamline administrative procedures (Nguyen Trong et al., 2022). Recognising the significance of digital transformation for progress, the Vietnamese government is actively seeking to establish associations with technologically advanced nations.

Prior research has investigated the factors that impact the adoption of e-government in different settings in Vietnam (Nguyen & Borazon, 2023; Nguyen et al., 2020; Nguyen et al., 2023, 2024). Nevertheless, there has been a lack of extensive research on the Vietnamese population's inclination to persist in utilising public services offered by e-government. This study seeks to examine the influence of factors that determine trust in e-government on citizens' satisfaction with e-government services and their intention to continue using them in Ho Chi Minh City, a major urban centre in Vietnam. The findings of this research will provide a fresh outlook in this field for the government, relevant organisations, and other researchers, ultimately promoting economic and social development in the city.

2. Literature Review

2.1 Good Governance Theory

Kaufmann et al. (2010) presented a comprehensive definition of governance in their study, encompassing various elements such as customs, practices, values, and authorities that influence the exercise of state power. The theory of good governance emphasizes the rule of law, citizen participation, accountability, transparency, and responsiveness as crucial factors in ensuring efficient resource utilization and the provision of public services (Van Doeveren, 2011). Robust governance practices, aligned with the principles of good governance, are often established to foster public confidence (Six et al., 2023) and should be prioritized by governments (Hartanto et al., 2021). In this context, the present research examines the impact of e-government trust on three fundamental principles of good governance: accountability, openness, and responsiveness.

Accountability refers to the sense of responsibility, obligation, and the need to justify one's actions to others or oneself (London et al., 1997; Weigold & Schlenker, 1991). Responsiveness, on the other hand, involves the ability to provide prompt responses and assistance in addressing issues or inquiries. It entails how individuals address and support each other's demands and goals based on their personality traits, objectives, and past relationship experiences. Lastly, transparency in an organization relates to its willingness to allow citizens to observe its performance and engage in its policy processes. Transparency is demonstrated by providing information about the government's actions, thereby promoting accountability (Chun et al., 2010).

2.2 IS continuance theory

Drawing upon Oliver's expectation-confirmation theory, Bhattacherjee developed the IS continuance theory, which highlights the importance of user satisfaction and perceived usefulness in predicting the continued use of IT systems (Bhattacherjee, 2001b). Satisfaction, according to (Oliver, 1981), is a psychological state that

ISSN 2076-9202

arises when a consumer's emotions regarding unmet expectations are combined with their prior experiences of the consumption process. A study by (Shi et al., 2010) found that individuals who are more satisfied with their social media networking service are more likely to continue using it. The IS continuance theory has been validated in various online domains, including online brokerage, internet-based learning, and online social networking (Bhattacherjee, 2001a; Limayem & Cheung, 2008; Sun et al., 2014). This paper utilizes the IS continuance theory, along with another theory, to support the intention to continue using e-government services, based on its strong theoretical foundation and empirical evidence.

2.3 Hypothesis Development

The article initially presents three criteria—openness, answerability, and accountability—for evaluating the quality of e-government services. Obaid & Ahmadb (2022) discovered a significant relationship between e-service quality and public trust, highlighting the crucial role of effective management of digital services in building trust among users. Fard & Rostamy (2007) argued in their study that the presence of public accountability leads to citizen satisfaction, thereby fostering public trust. Other studies have also emphasized the importance of accountability in enhancing citizens' trust in local authorities (Newcomer, 2020; Yang & Northcott, 2019; Yousaf et al., 2016). The adoption of digitalization in this domain has been recognized as a means to improve services, enhance data availability and accessibility, and facilitate better stakeholder relationships. These factors are expected to enhance decision-making processes, increase transparency, promote accountability, and strengthen interactions with citizens (Ramírez & Tejada, 2019; Royo et al., 2019; Vydra & Klievink, 2019). Experimental research conducted by (Porumbescu et al., 2021) demonstrated the crucial role of transparency in fostering greater trust among citizens regarding various decisions made by local authorities. Consistent with these findings, previous studies have also shown that governments have taken steps to enhance administrative transparency with the aim of bolstering public confidence (da Cruz et al., 2016; Mansoor, 2021; Porumbescu, 2015; Shohreh Sadeghi et al., 2018; Welch & Hinnant, 2003). Lastly, responsiveness is perceived to have a positive impact on citizens' trust in e-government public services (Beshi & Kaur, 2020; Hartanto et al., 2021; Mansoor, 2021; Vigoda-Gadot & Yuval, 2003). Addressing people's demands or concerns promptly is crucial, as any delays can lead to ambiguity and a lack of trust, potentially resulting in social unrest (Miller, 2015).

H1. Perceived Accountability positively affects E-government Trust

H2. Perceived Responsiveness positively affects E-government Trust

H3. Perceived Transparency positively affects E-government Trust

Noor's research in 2022 revealed that e-service quality and trust significantly influence customer satisfaction. Previous studies consistently indicate that trust is a critical factor in understanding satisfaction and commitment (e.g., Schaupp & Belanger, 2005; Verhagen et al., 2006). Hsu (2008) affirmed that trust has a positive impact on the intention to continue using a service. In the context of China, trust is found to be a crucial determinant of whether Chinese consumers will continue engaging in m-commerce (Chong, 2013). Satisfaction, on the other hand, has been shown to correlate with loyalty (Oliver, 1999). According to the IS continuance theory, high levels of satisfaction lead to a strong intention among users to continue using information technology systems. Based on these considerations, the following hypotheses are formulated:

H4. E-government Trust positively correlates with E-government Satisfaction

ISSN 2076-9202

H5. E-government Trust positively correlates with Continuance Intention to Use E-government

H6. E-government Satisfaction positively correlates with Continuance Intention to Use E-government

The study proposes a specific research model based on the developed hypotheses.

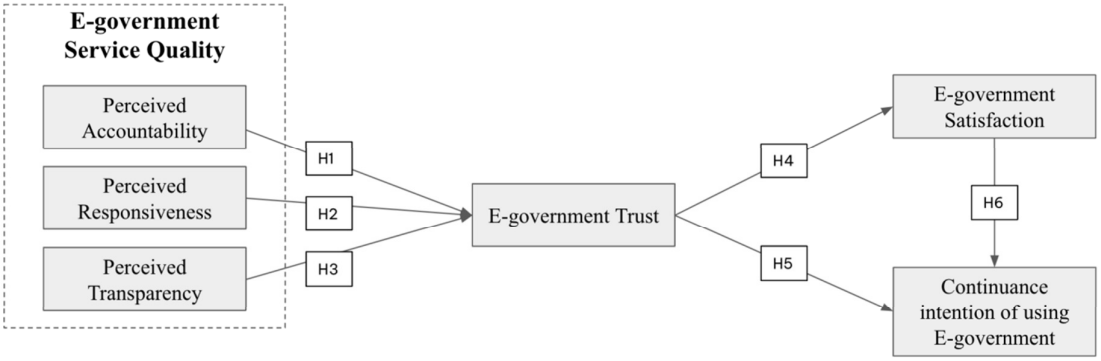


Figure 1. Proposed Research Model

3. Methodology

The researcher utilised a quantitative research method, which utilised numerical data and statistical approaches to elucidate phenomena (Creswell & Creswell, 2017). Convenience sampling was selected for this study because a complete sample frame was not available. The chosen participants, ranging from 22 to 60 years old, have extensive experience as residents and employees in Ho Chi Minh City. This allows them to offer well-rounded insights into the city's e-government initiatives.

When it comes to data collection, it is recommended by (Hair et al., 2014) that an investigation should have an overall sample size which is at least ten times larger than the total amount of observed variables. Thus, in order to accurately analyse six variables employing 29 measurement questions in the questionnaires, a minimum sample size of 290 verified responses is necessary for this study. Actually, the study gathered 455 responses from the target audience, which strengthens the reliability of the results.

4. Finding

4.1 Assessment of reliability and validity

The external loading indicator represents the relationship between the reflective construct and the indicators of the estimated variable. The authors propose that for an observed variable to be considered significant, its outer loading coefficient should be equal to or greater than 0.7. If the outer loading falls between 0.4 and less than 0.7, the decision to retain or discard the variable relies on the researcher's judgment, taking into account criteria such as composite reliability (CR) and convergence validity (AVE coefficient) for that specific component. If the outer loading drops below 0.4, the variable should be excluded from the model. Therefore, item CIE6 will be retained due to its significance in the study.

To assess the internal consistency of the measurement scales, Cronbach's alpha (α) was used as a measure of reliability. The obtained α value surpasses the acceptable threshold of 0.6, indicating a reasonably reliable scale. Additionally, composite reliability (CR) values exceed the minimum threshold of 0.70, confirming the reliability and consistency of the measurement model. To establish discriminant validity, the average

ISSN 2076-9202

extracted variance (AVE) between any two items should be higher than the squared correlation estimates between those constructs. The AVE values were utilized to validate the factor loading at the 0.5 threshold (Hair et al., 1998).

Table 1. Assessment of reliability and validity

Constructs	Indicators	Loadings	α	CR	AVE
Perceived Accountability (PA)	PA1	0,748	0,887	0,923	0,752
	PA2	0,901			
	PA3	0,922			
	PA4	0,886			
Perceived Responsiveness (PR)	PR1	0,852	0,896	0,928	0,762
	PR2	0,867			
	PR3	0,891			
	PR4	0,882			
Perceived Transparency (PT)	PT1	0,799	0,880	0,917	0,736
	PT2	0,886			
	PT3	0,877			
	PT4	0,866			
E-government Trust (PTG)	PTG1	0,752	0,877	0,910	0,671
	PTG2	0,806			
	PTG3	0,847			
	PTG4	0,846			
	PTG5	0,840			
E-government Satisfaction (CS)	CS1	0,847	0,924	0,940	0,725
	CS2	0,839			
	CS3	0,838			
	CS4	0,892			
	CS5	0,835			
	CS6	0,855			
Continuance intention to use E-government (CIE)	CIE1	0,859	0,900	0,924	0,672
	CIE2	0,857			
	CIE3	0,849			
	CIE4	0,863			
	CIE5	0,809			

ISSN 2076-9202

CIE6	**0,661**

4.2 Results of the Structural Model

The Heterotrait-Monotrait ratio (or HTMT) represents a metric that quantifies the average correlations between distinct constructs in relation to the typical correlations between items that assess an identical construct. When the HTMT index surpasses 0.9 for a pair of factors, it signifies a breach of the uniqueness of each factor (Henseler et al., 2016). The acceptable threshold lies between 0.85 and 0.9. Based on the data shown in Table 2, it can be stated that the variables demonstrated strong discriminant validity, as every indicator gathered during the study was below 1.

Table 2. Discriminant Validity: Heterotrait-Monotrait Ratio (HTMT)

	CIE	**CS**	**PA**	**PR**	**PT**	**PTG**
CIE						
CS	**0,655**					
PA	0,654	**0,577**				
PR	0,632	0,688	**0,606**			
PT	0,722	0,806	0,626	**0,754**		
PTG	0,835	0,538	0,627	0,584	**0,664**	

4.3 Hypothesis Testing

Since the p-value of these items is greater than 0.05, these figures are all valid, supporting all the hypotheses and indirect connections.

Table 3. Total Direct Effect

	O	**M**	**STDEV**	**T statistics**	**P values**	**Hypothesis**
CS -> CIE	0,313	0,315	0,033	9,475	0	**Supported**
PA -> PTG	0,307	0,307	0,046	6,673	0	**Supported**
PR -> PTG	0,14	0,142	0,058	2,426	0,015	**Supported**
PT -> PTG	0,317	0,315	0,052	6,142	0	**Supported**
PTG -> CIE	0,592	0,59	0,029	20,566	0	**Supported**
PTG -> CS	0,484	0,484	0,044	11,128	0	**Supported**

Note: *O = Path Coefficients; M= Sample Mean; STDEV= Standard Deviation*

Table 4. Total Indirect Effect

	O	**M**	**STDEV**	**T statistics**	**P values**	**Hypothesis**
PA -> PTG -> CIE	0,228	0,228	0,035	6,438	0	**Supported**

ISSN 2076-9202

PA -> PTG -> CS	0,148	0,149	0,026	5,673	0	**Supported**
PR -> PTG -> CIE	0,104	0,105	0,043	2,414	0,016	**Supported**
PR -> PTG -> CS	0,068	0,069	0,03	2,291	0,022	**Supported**
PT -> PTG -> CIE	0,236	0,234	0,04	5,828	0	**Supported**
PT -> PTG -> CS	0,153	0,153	0,031	5,019	0	**Supported**
PTG -> CS -> CIE	0,152	0,152	0,023	6,66	0	**Supported**

Note: *O = Path Coefficients; M= Sample Mean; STDEV= Standard Deviation*

4.4 Discussion

The findings of this research provide valuable insights into the relationship between e-government service quality, public trust, public satisfaction, and their intention to continue using public services provided by E-government. Based on the gathered data, it has been found that citizens' trust in E-government services is significantly influenced by their perception of accountability, transparency, and responsiveness. This includes services related to study, work, identification documents, family, and so on. The association among three determinants of e-government service quality and confidence among citizens in local government, specifically in Ho Chi Minh City, is consistent with earlier research conducted by (Fard & Rostamy, 2007; Hartanto et al., 2021; Mansoor, 2021; Newcomer, 2020; Nguyen et al., 2024; Yang & Northcott, 2019). However, interestingly, in their study, Nguyen et al. (2024) observed that there is no correlation between perceived accountability and E-government confidence. This is due to the Vietnamese Government's failure to deliver timely news updates to inhabitants through online platforms and social networking sites, among other channels. This outcome may partially indicate variations in the overall perspectives of Vietnamese individuals across different locations, as their poll was carried out in a different province of Vietnam, namely Tien Giang. Hence, it is imperative for the government to thoroughly evaluate its nationwide service offerings in order to ensure their coherence. On the other hand, the findings for E-government trust indicate that this variable has a great impact on E-government satisfaction and the public's continuance intention to use this kind of service, which are in line with (Chong, 2013; Hsu, 2008; Sun et al., 2014; Susanto et al., 2016; Taufiqurokhman et al., 2024). Last but not least is the connection between E-government satisfaction and Continuance intention to use E-government. Scientifically, this finding is not only in line with studies conducted by (Li & Shang, 2020; Upadhyay et al., 2022; Veeramootoo et al., 2018) but also enriches the effect of IS continuance theory (Bhattacherjee, 2001b).

5. Conclusion and Implication

5.1 Conclusion

The main objective of this study is to examine the relationship between faith in e-government, satisfaction with e-government, and the intention to continue using e-government. It also aims to investigate the relationship between various factors that contribute to the quality of e-government services, such as perceived accountability, responsiveness, and transparency, and the level of trust individuals have in e-government. The study's theoretical framework is based on the IS continuity theory (Bhattacherjee, 2001b)

ISSN 2076-9202

and the Good Governance Theory. The analysis of 455 valid responses confirmed all the hypotheses proposed in this study. The data underwent validity and reliability testing, which showed that the data were largely valid and within acceptable ranges.

5.2 Theoretical and Practical Implication

In terms of theoretical contribution, this study makes significant contributions to several theoretical developments. It emphasises the importance of organisations, especially governments, in gaining loyalty and retaining their primary users. It reinforces the core principles of the IS continuity theory and the Good Governance Theory by investigating whether the factors that determine trust in e-government also influence public satisfaction and the intention to continue using e-government. Additionally, the study provides further insights into e-government research in the era of technology, based on its findings. Specifically, it examines a new aspect of e-government usage by users in Vietnam that has received little attention in previous studies, which is their intention to continue using public services provided through this platform. This contributes to the scientific research on e-government, particularly in Vietnam.

In terms of practical contribution, the government faces challenges due to Vietnam's status as a developing country and the time-consuming transition from traditional to digital processes. The increasing number of older individuals in the country also presents obstacles to the widespread adoption of e-government, as they may struggle to adapt to the digital nature of these services. In light of these challenges, the author conducted this survey to assess how local citizens perceive e-services provided by the government. The findings show that citizens have a highly positive opinion of accountability, responsiveness, and transparency in relation to e-government service quality. This indicates that the Vietnamese government is making progress and effectively meeting the public's expectations in these areas, although there are still some aspects that need improvement. Increased levels of trust among individuals will also encourage citizen engagement and contribute to the long-term economic advancement and prosperity of the country. As we are going to experience the advent of the Fifth Industrial Revolution, it is crucial for the government to promote the adoption of communication and information technology advancements to ensure that the local population can keep up with global developments. To achieve this objective, it is essential to ensure that everyone has convenient access to clear and understandable information and the right to utilize it in their best interests.

5.3 Limitation and Future Research

Despite its valuable contributions, the current study has several limitations. Firstly, the research relied on a quantitative methodology and convenience sampling, which may limit the representativeness of the selected individuals and their ability to accurately reflect the larger population of interest. As a result, the generalizability and applicability of the research findings to broader populations or different contexts may be limited, highlighting the need for further research. Additionally, using a quantitative research approach to examine the relationship between social media involvement and e-government services may restrict a comprehensive understanding of individuals' perspectives. Incorporating qualitative methodologies could provide deeper subjective insights into individuals' viewpoints and justifications. Lastly, the study was conducted in Ho Chi Minh City, a major urban centre in the South of Vietnam, and therefore, the findings only reflect the opinions on e-government usage of citizens in Southern Vietnam and may not be

ISSN 2076-9202

representative of the entire population of Vietnam. To obtain more comprehensive and generalizable results, it is recommended that future scholars conduct research in multiple regions of the country, such as Southern, Northern, and Central Vietnam, each of which has distinct socio-cultural dynamics. Researchers can also consider employing larger sample sizes and ensuring the inclusion of diverse age groups, including individuals below the age of 22 and above the age of 60.

Reference

Alkraiji, A. I. (2021). An examination of citizen satisfaction with mandatory e-government services: comparison of two information systems success models. *Transforming Government: People, Process and Policy*, *15*(1), 36–58. https://doi.org/10.1108/TG-01-2020-0015

Basu, S. (2004). E-government and developing countries: an overview. *International Review of Law, Computers & Technology*, *18*(1), 109–132. https://doi.org/10.1080/13600860410001674779

Beshi, T. D., & Kaur, R. (2020). Public Trust in Local Government: Explaining the Role of Good Governance Practices. *Public Organization Review*, *20*(2), 337–350. https://doi.org/10.1007/s11115-019-00444-6

Bhattacherjee, A. (2001a). An empirical analysis of the antecedents of electronic commerce service continuance. *Decision Support Systems*, *32*(2), 201–214. https://doi.org/10.1016/S0167-9236(01)00111-7

Bhattacherjee, A. (2001b). Understanding Information Systems Continuance: An Expectation-Confirmation Model. *MIS Quarterly*, *25*(3), 351. https://doi.org/10.2307/3250921

Chong, A. Y.-L. (2013). Understanding Mobile Commerce Continuance Intentions: An Empirical Analysis of Chinese Consumers. *Journal of Computer Information Systems*, *53*(4), 22–30. https://doi.org/10.1080/08874417.2013.11645647

Chun, S. A., Shulman, S., Sandoval, R., & Hovy, E. (2010). Government 2.0: Making connections between citizens, data and government. *Information Polity*, *15*(1–2), 1–9. https://doi.org/10.3233/IP-2010-0205

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

da Cruz, N. F., Tavares, A. F., Marques, R. C., Jorge, S., & de Sousa, L. (2016). Measuring Local Government Transparency. *Public Management Review*, *18*(6), 866–893. https://doi.org/10.1080/14719037.2015.1051572

Danaee Fard, H., & Anvary Rostamy, A. A. (2007). Promoting Public Trust in Public Organizations: Explaining the Role of Public Accountability. *Public Organization Review*, *7*(4), 331–344. https://doi.org/10.1007/s11115-007-0041-4

Grimmelikhuijsen, S., Porumbescu, G., Hong, B., & Im, T. (2013). The Effect of Transparency on Trust in Government: A Cross-National Comparative Experiment. *Public Administration Review*, *73*(4), 575–586. https://doi.org/10.1111/puar.12047

Grinin, L., Grinin, A., & Korotayev, A. (2022). COVID-19 pandemic as a trigger for the acceleration of the cybernetic revolution, transition from e-government to e-state, and change in social relations. *Technological Forecasting and Social Change*, *175*, 121348. https://doi.org/10.1016/j.techfore.2021.121348

ISSN 2076-9202

Hair, J. F., Jr, S., M., H., & L. & Kuppelwieser. (2014). Partial least squares structural equation modeling (PLS-SEM). *European Business Review*, *26*(2), 106–121. https://doi.org/10.1108/EBR-10-2013-0128

Hartanto, D., Dalle, J., Akrim, A., & Anisah, H. U. (2021). Perceived effectiveness of e-governance as an underlying mechanism between good governance and public trust: a case of Indonesia. *Digital Policy, Regulation and Governance* , *23*(6), 598–616. https://doi.org/10.1108/DPRG-03-2021-0046

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

Hsu, S. (2008). Developing an index for online customer satisfaction: Adaptation of American Customer Satisfaction Index. *Expert Systems with Applications*, *34*(4), 3033–3042. https://doi.org/10.1016/j.eswa.2007.06.036

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010). Response to 'What do the Worldwide Governance Indicators Measure?' *The European Journal of Development Research*, *22*(1), 55–58. https://doi.org/10.1057/ejdr.2009.49

Li, Y., & Shang, H. (2020). Service quality, perceived value, and citizens' continuous-use intention regarding e-government: Empirical evidence from China. *Information & Management*, *57*(3), 103197. https://doi.org/10.1016/j.im.2019.103197

Limayem, M., & Cheung, C. M. K. (2008). Understanding information systems continuance: The case of Internet-based learning technologies. *Information & Management*, *45*(4), 227–232. https://doi.org/10.1016/j.im.2008.02.005

London, M., Smither, J. W., & Adsit, D. J. (1997). Accountability. *Group & Organization Management*, *22*(2), 162–184. https://doi.org/10.1177/1059601197222003

Mandari, H. E., & Koloseni, D. N. (2023). Determinants of continuance intention of using e-government services in Tanzania: the role of system interactivity as moderating factor. *Transforming Government: People, Process and Policy*, *17*(1), 15–38. https://doi.org/10.1108/TG-05-2022-0077

Mansoor, M. (2021). An interaction effect of perceived government response on COVID-19 and government agency's use of ICT in building trust among citizens of Pakistan. *Transforming Government: People, Process and Policy*, *15*(4), 693–707. https://doi.org/10.1108/TG-01-2021-0002

Miller, M. K. (2015). Elections, Information, and Policy Responsiveness in Autocratic Regimes. *Comparative Political Studies*, *48*(6), 691–727. https://doi.org/10.1177/0010414014555443

Newcomer, K. (2020). Accountability and Trust in Government: What's Next? *Revista Da CGU*, *12*(22), 343–350. https://doi.org/10.36428/revistadacgu.v12i22.368

Nguyen, H. N., & Tran, M. D. (2022). Stimuli to adopt e-government services during Covid-19: Evidence from Vietnam. *Innovative Marketing*, *18*(1), 12–22. https://doi.org/10.21511/im.18(1).2022.02

Nguyen, H. T., & Borazon, E. Q. (2023). Drivers of e-government use during the COVID-19 pandemic: the case of Vietnam. *Online Information Review*, *47*(5), 838–861. https://doi.org/10.1108/OIR-08-2021-0440

Nguyen, T. T., Phan, D. M., Le, A. H., & Nguyen, L. T. N. (2020). The Determinants of Citizens' Satisfaction of E-Government:

An Empirical Study in Vietnam. *The Journal of Asian Finance, Economics and Business*, *7*(8), 519–531. https://doi.org/10.13106/jafeb.2020.vol7.no8.519

Nguyen, T. T. U., Nguyen, P. Van, Huynh, H. T. N., Vrontis, D., & Ahmed, Z. U. (2024). Identification of the determinants of public trust in e-government services and participation in social media based on good governance theory and the technology acceptance model. *Journal of Asia Business Studies*, *18*(1), 44–61. https://doi.org/10.1108/JABS-04-2023-0160

Nguyen, T. T. U., Nguyen, P. Van, Le, L. P., & Huynh, N. H. T. (2023, September 12). The influence of determinants of citizen relationship quality in e-Government adoption. *Proceedings of the International Conference on Industrial Engineering and Operations Management*. https://doi.org/10.46254/AP04.20230230

Nguyen Trong, H., Dang, T. V., Nguyen, V., & Nguyen, T. T. (2022). Determinants of e-government service adoption: an empirical study for business registration in Southeast Vietnam. *Journal of Asian Public Policy*, *15*(3), 453–468. https://doi.org/10.1080/17516234.2020.1805396

Noor, M. (2022). The effect of e-service quality on user satisfaction and loyalty in accessing e-government information. *International Journal of Data and Network Science*, *6*(3), 945–952. https://doi.org/10.5267/j.ijdns.2022.2.002

Obaid, Q. M. S., & Ahmadb, M. F. (2022). The impact of service quality, system quality on citizen's satisfaction with mediating role of trust in E-Government. *Central European Management Journal* , *30*(3).

Oliver, R. L. (1981). Measurement and evaluation of satisfaction processes in retail settings. *Journal of Retailing*, *57*(3), 25–48.

Oliver, R. L. (1999). Whence Consumer Loyalty? *Journal of Marketing*, *63*(4_suppl1), 33–44. https://doi.org/10.1177/00222429990634s105

Porumbescu, G. A. (2015). Using Transparency to Enhance Responsiveness and Trust in Local Government. *State and Local Government Review*, *47*(3), 205–213. https://doi.org/10.1177/0160323X15599427

Porumbescu, G. A., Grimes, M., & Grimmelikhuijsen, S. (2021). Capturing the social relevance of government transparency and accountability using a behavioral lens. *Journal of Behavioral Public Administration*, *4*(1). https://doi.org/10.30636/jbpa.41.241

Ramírez, Y., & Tejada, Á. (2019). Digital transparency and public accountability in Spanish universities in online media. *Journal of Intellectual Capital*, *20*(5), 701–732. https://doi.org/10.1108/JIC-02-2019-0039

Royo, S., Yetano, A., & García-Lacalle, J. (2019). Accountability Styles in State-Owned enterprises: The good, the bad, the ugly ... and the pretty. *Revista de Contabilidad*, *22*(2), 156–170. https://doi.org/10.6018/rcsar.382231

Schaupp, L., & Belanger, F. (2005). A conjoint analysis of online consumer satisfaction. *Journal of Electronic Commerce Research*, *6*.

Shi, N., Lee, M. K. O., Cheung, C. M. K., & Chen, H. (2010). The Continuance of Online Social Networks: How to Keep People Using Facebook? *2010 43rd Hawaii International Conference on System Sciences*, 1–10. https://doi.org/10.1109/HICSS.2010.369

Shohreh Sadeghi, Seyed Nasrollah Sajjadi, Hosein Rajabi Nooshabadi, & Majid Jalali Farahani. (2018). Social-Cultural Barriers of Muslim Women Athletes: Case Study of Professional Female Athletes in Iran. *Journal of Management Practices, Humanities*

ISSN 2076-9202

and Social Sciences, *2*(1). https://doi.org/10.33152/jmphss-2.1.2

Six, F., de Vadder, S., Glavina, M., Verhoest, K., & Pepermans, K. (2023). What drives compliance with COVID-19 measures over time? Explaining changing impacts with Goal Framing Theory. *Regulation & Governance*, *17*(1), 3–21. https://doi.org/10.1111/rego.12440

Sun, Y., Liu, L., Peng, X., Dong, Y., & Barnes, S. J. (2014). Understanding Chinese users' continuance intention toward online social networks: an integrative theoretical model. *Electronic Markets*, *24*(1), 57–66. https://doi.org/10.1007/s12525-013-0131-9

Susanto, A., Chang, Y., & Ha, Y. (2016). Determinants of continuance intention to use the smartphone banking services. *Industrial Management & Data Systems*, *116*(3), 508–525. https://doi.org/10.1108/IMDS-05-2015-0195

Tam, C., Santos, D., & Oliveira, T. (2020). Exploring the influential factors of continuance intention to use mobile Apps: Extending the expectation confirmation model. *Information Systems Frontiers*, *22*(1), 243–257. https://doi.org/10.1007/s10796-018-9864-5

Taufiqurokhman, T., Satispi, E., Andriansyah, A., Murod, M., & Sulastri, E. (2024). The impact of e-service quality on public trust and public satisfaction in e-government public services. *International Journal of Data and Network Science*, *8*(2), 765–772. https://doi.org/10.5267/j.ijdns.2024.1.002

Upadhyay, P., Kumar, A., Dwivedi, Y. K., & Adlakha, A. (2022). Continual usage intention of platform-based governance services: A study from an emerging economy. *Government Information Quarterly*, *39*(1), 101651. https://doi.org/10.1016/j.giq.2021.101651

Van Doeveren, V. (2011). Rethinking Good Governance. *Public Integrity*, *13*(4), 301–318. https://doi.org/10.2753/PIN1099-9922130401

Veeramootoo, N., Nunkoo, R., & Dwivedi, Y. K. (2018). What determines success of an e-government service? Validation of an integrative model of e-filing continuance usage. *Government Information Quarterly*, *35*(2), 161–174. https://doi.org/10.1016/j.giq.2018.03.004

Verhagen, T., Meents, S., & Tan, Y.-H. (2006). Perceived risk and trust associated with purchasing at electronic marketplaces. *European Journal of Information Systems*, *15*(6), 542–555. https://doi.org/10.1057/palgrave.ejis.3000644

Vigoda-Gadot, E., & Yuval, F. (2003). Managerial quality, administrative performance and trust in governance revisited. *International Journal of Public Sector Management*, *16*(7), 502–522. https://doi.org/10.1108/09513550310500382

Vydra, S., & Klievink, B. (2019). Techno-optimism and policy-pessimism in the public sector big data debate. *Government Information Quarterly*, *36*(4), 101383. https://doi.org/10.1016/j.giq.2019.05.010

Weigold, M. F., & Schlenker, B. R. (1991). Accountability and Risk Taking. *Personality and Social Psychology Bulletin*, *17*(1), 25–29. https://doi.org/10.1177/0146167291171004

Welch, E. W., & Hinnant, C. C. (2003). Internet use, transparency, and interactivity effects on trust in government. *36th Annual Hawaii International Conference on System Sciences, 2003. Proceedings of The*, 7 pp. https://doi.org/10.1109/HICSS.2003.1174323

Yang, C., & Northcott, D. (2019). How can the public trust charities? The role of performance accountability reporting. *Accounting & Finance*, *59*(3), 1681–1707. https://doi.org/10.1111/acfi.12475

Yousaf, M., Ihsan, F., & Ellahi, A. (2016). Exploring the impact of good governance on citizens' trust in Pakistan. *Government Information Quarterly*, *33*(1), 200–209. https://doi.org/10.1016/j.giq.2015.06.001

Appendix

Table 5: Measurement scale with modification

Item Code	Item	Authors
PA	**Perceived Accountability**	
PA1	"The public services provided by e-government have a regular reporting system on the achievements and results of the program against its objectives"	(Hartanto et al., 2021)
PA2	"The government recognizes its responsibility toward the public when providing E-government services"	
PA3	"The public services provided by e-government follow treasury rules and regulations in all circumstances"	
PA4	"The government understands how to keep expenditures within budget in a proper and permitted manner when providing e-government services"	
PR	**Perceived Responsiveness**	
PR1	"The public services provided by e-government are sensitive to public opinions"	(Hartanto et al., 2021)
PR2	"The public services provided by e-government respond to public requests quickly"	
PR3	"The government is making a sincere effort to support those residents who need help via E-government services"	
PR4	"The public services provided by e-government are efficient in providing quality solutions for public needs"	
PT	**Perceived Transparency**	

ISSN 2076-9202

PT1	"The E-government services are implemented transparently"	(Hartanto et al., 2021)
PT2	"The entire process of the E-government services is transparently disclosed"	
PT3	"The residents can clearly see the progress and situation of E-government services"	
PT4	"The E-government services disclose sufficient information to the residents on its public works projects"	
PTG	**E-government Trust**	
PTG1	"E-government services are acting in the interest of the public"	(Grimmelikhuijsen et al., 2013)
PTG2	"E-government services are capable"	
PTG3	"E-government services carry out public services effectively"	
PTG4	"E-government services are sincere"	
PTG5	"E-government services are honest"	
CS	**E-government Satisfaction**	
CS1	"I am satisfied with the service I received from E-government"	(Alkraiji, 2021; Li & Shang, 2020)
CS2	"I am very pleased with my past experience of using E-government services"	
CS3	"The public services provided by E-government satisfy my needs"	
CS4	"As an enthusiastic user of E-government services, my continuance of using E-government services is extremely positive"	
CS5	"As an enthusiastic user of E-government services, my continuance of using E-government services is extremely	

ISSN 2076-9202

	good"	
CS6	"As an enthusiastic user of E-government services, my continuance of using E-government services is extremely beneficial"	
CIE	**Continuance Intention of using E-government**	
CIE1	"In relation to citizen's service I intend to continue using E-government in the future"	(Li & Shang, 2020; Sun et al., 2014; Tam et al., 2020)
CIE2	"I will always try to use E-government in my daily life "	
CIE3	"I will keep using E-government as regularly as I do now"	
CIE4	"I intend to continue using E-government services rather than use any alternative ones"	
CIE5	"I intend to continue using E-government services rather than discontinue use"	
CIE6	"I will recommend others to use E-government services"	

ISSN 2076-9202



International Journal of Information, Business and Management

http://ijibm.elitehall.com/