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THE COUNTRY GOVERNANCE INDEX AND BANK CREDIT RISKS: EMPIRICAL EVIDENCE FROM VIETNAMESE COMMERCIAL BANKS LISTED ON HOCHIMINH AND HANOI STOCK EXCHANGES

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Abstract

This study examines the relationship between the Country Governance Index (CGI) and credit risks within Vietnamese commercial banks, alongside an exploration of the influence exerted by various bank-specific and macroeconomic variables. Using a sample of Vietnamese commercial banks listed on the Hochiminh (HOSE) and Hanoi (HNX) stock exchanges from 2010 to 2022, the research employs both the Fixed Effects Model (FEM) and Random Effects Model (REM) with credit risks measured by the Loan Loss Reserve Ratio (LLRR) and Non-Performing Loan Ratio (NPLR). The findings unveil a statistically significant negative association between CGI and NPLR, thereby suggesting that enhancements in country governance harbor the potential to reduce non-performing loans, consequently mitigating the credit risk of Vietnamese commercial banks. Moreover, the results highlight the significant impact of bank size, return on assets (ROA), and two macroeconomic variables (the GDP growth rate and interbank interest rate) on credit risks. The findings of this study have implications that policymakers, regulators, and banking practitioners can strengthen the country governance frameworks to enhance the financial stability and mitigate credit risks of Vietnamese banks.

Keywords: *Country governance index, Credit risk, Non-performing loan, Vietnamese commercial bank*

JEL Classifications: G21, E51, E60

1. Introduction

The banking sector plays a crucial role in Vietnam's economic development, particularly in controlling inflation, ensuring macroeconomic stability, and fostering post-pandemic growth. Vietnam's effective transition to a flexible and controlled COVID-19 adaptation led to a positive socio-economic recovery in 2022, surpassing many targets, with an estimated GDP growth rate of 8.02% (Dung, 2022). International organizations have recognized these achievements, reflecting the importance of the banking sector in supporting Vietnam's economic expansion and recovery efforts.

Bank lending is a critical channel for monetary policy transmission in developing countries, where financial markets are less mature. Studies such as Sanfilippo-Azofra et al. (2018) highlight the role of bank deposits in sustaining monetary policy effects. Rising interest rates tend to contract bank lending, particularly in banks with less liquidity. However, liquid banks can better cushion these effects (Altunbas et al., 2009; Vo & Nguyen, 2014). In Vietnam, bank credit growth has seen a downward trend since its peak in 2016, with recent years indicating a slow recovery in both global and domestic demand, influencing credit dynamics in 2024.

Vietnamese banks face significant challenges in maintaining credit quality, especially in 2024, where bad debt risks and provisioning pressures are increasing. For instance, banks like ACB reported a sharp rise in bad debt and provisioning costs (Thu, 2024). Additionally, the poor financial capacity of businesses and the real estate market's stagnation are contributing to these growing risks. As banks cautiously manage their credit portfolios, they are likely to witness varying impacts on bad debt across different banking groups.

The concept of country governance has become an emerging focus, particularly in the context of industrial advancements and global integration. Governance quality plays a vital role in economic recovery, especially for businesses with weaker risk management. Studies have shown that strong governance structures improve the likelihood of recovering losses from fraudulent activities (Curti & Mihov, 2018). Governance is also linked to fostering innovation and reducing leverage in firms, further emphasizing its importance in financial stability (Lee et al., 2020; Çam & Özer, 2022).

The relationship between country governance and bank credit risks is typically negative. Strong governance ensures more stable regulatory environments and better oversight of financial institutions, reducing risky lending practices. Effective governance frameworks also enhance political and economic stability, minimizing systemic risks that could lead to credit defaults. In Vietnam, robust legal frameworks and contract enforcement contribute to lower credit risks for banks.

Despite the significance of governance in managing credit risks, there is limited research on this relationship in the Vietnamese banking sector. Our research seeks to fill that gap by exploring how country governance influences credit risks in Vietnamese commercial banks listed on the Hochiminh and Hanoi Stock Exchanges. By focusing on the 2010-2022 period, our study will offer insights into how improvements in country governance can mitigate credit risks and foster a more resilient banking sector in Vietnam.

The remainder of this paper proceeds as follows. Section 2 discusses key theories, the literature, and develops hypotheses. Section 3 outlines the data collection process and research model. Section 4 analyzes empirical findings. Section 5 concludes with key insights and implications drawn from the study's findings.

2. Literature review and Hypothesis development

2.1. The Theory of Bank Lending

Bank lending practices are significantly influenced by various regional factors and the specific characteristics of financial institutions. Research highlights how different contexts shape lending behaviors and outcomes. For instance, Amidu (2014) establishes a critical relationship between the health of bank balance sheets and lending activities in Sub-Saharan Africa. Meanwhile, Barajas et al. (2010) examine the effects of bank characteristics on the credit slowdown experienced in MENA countries after the global financial crisis, underscoring the need for policymakers to adopt context-specific strategies to overcome banking challenges and foster economic growth.

The relationship between monetary policy and bank lending also reveals nuanced dynamics, particularly in developing nations. For example, Abuka et al. (2019) determine that the contraction in monetary policy leads to a significant reduction in bank credit supply, particularly impacting highly leveraged banks. This finding emphasizes the importance of formulating monetary policies that account for the unique vulnerabilities and characteristics of banking systems in different economic environments. It indicates a need for tailored responses to address the diverse challenges banks face, ensuring an effective credit supply and economic stimulation.

Moreover, the COVID-19 pandemic introduced unprecedented challenges to bank lending, resulting in heightened credit risks due to economic disruptions associated with lockdown measures. Kryzanowski et al. (2022) and Siregar et al. (2021) note that these disruptions adversely affected the financial health of businesses and households, increasing the likelihood of loan defaults. Although government regulations aimed at credit restructuring have been put in place to alleviate these risks, the long-term impacts on credit risk management strategies for banks necessitate further explorations.

The discourse around Basel III regulations is particularly pertinent in this context, as there is an ongoing debate regarding whether recent enhancements in credit risk management genuinely improve regulatory frameworks or inadvertently exacerbate financial crises. Roulet (2018) discusses the dual perspectives on capital adequacy during economic downturns, suggesting that while higher capital ratios can impede lending, they may also bolster banks' ability to absorb risks, thus enhancing lending capacity. This complexity highlights the necessity for empirical investigations to understand the real effects of Basel III on bank lending behaviors, particularly in the light of post-2008 financial crisis scenarios.

2.2. The Roles of Country Governance

Country governance plays a pivotal role in shaping the operational environment for banks and their overall effectiveness. According to Kaufmann et al. (2011), governance is defined as the means by which authority is exercised in managing a nation's socio-economic resources for advancement, emphasizing the importance of legitimate authority underpinned by customs, laws, and institutions. Strong governance indicators, such as enhanced contract enforcement, robust property rights, political stability, and effective public service provisions, contribute significantly to the stability of the financial sector. These factors facilitate the financial market engagement, which is essential for fostering investments and economic progress.

Kaufmann et al. (2011) propose six key dimensions of governance that warrant consideration: Voice and Accountability (VA), Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL), Political Stability and Absence of Violence (PV), and Control of Corruption (CC). Each dimension contributes

uniquely to the overall efficacy of the banking sector. For instance, VA promotes citizen engagement in governance processes, which can drive efficiency in the banking sector by allowing citizens to influence governance structures positively. Similarly, GE emphasizes the relationship between government actions and their credibility, where effective governance fosters an environment conducive to the banking efficiency.

Regulatory Quality (RQ) pertains to the efficacy of regulatory frameworks, wherein effective regulations enhance the oversight of private sectors, including banking. The Rule of Law (RL) is critical in ensuring that legal frameworks are sound and enforced, fostering economic growth by safeguarding property rights and reducing the uncertainty in financial transactions. Political Stability and Absence of Violence (PV) are essential for uninterrupted credit flows, as political instability can disrupt economic activities and favor politically connected banks, thereby skewing the competitive landscape. Finally, the Control of Corruption (CC) emphasizes the role of governance in reducing corruption, which can significantly enhance banking efficiency through better supervision and regulatory compliance.

The relationship between country governance and banking performance has been extensively examined, with scholars such as Chortareas et al. (2012) establishing a significant connection between an effective governance and the banking sector efficiency. Kamarudin et al. (2016) further emphasize that improved governance directly contributes to enhanced revenue efficiency within the banking system. Additionally, research by Çam and Özer (202) indicates that firms operating in countries with strong governance frameworks are more likely to optimize their leverage and financing strategies, shifting from short-term debt reliance to increased long-term debt and equity financing. This suggests that strong governance mitigates risks associated with expropriation and contracting costs, creating a conducive environment for long-term financial commitments and enhancing corporate governance practices.

2.3. Country Governance and Bank Credit Risks

The relationship between country governance and bank credit risks is underscored by various empirical studies, including those by Lensink et al. (2008) and Chortareas et al. (2012), which demonstrate a significant correlation between governance quality and the efficiency of the banking sector. Enhanced governance has been shown to reduce credit risks, as supported by Kaufmann and Kraay (2008), who argue that an improving governance quality can effectively mitigate banks' credit risk exposure. Similarly, the study by Anastasiou et al. (2019) in Greece reveals a negative correlation between country governance and credit risks, suggesting that improving governance structures may serve as a viable strategy to lower credit risks.

The findings by Arham et al. (2020) and Elamer et al. (2020) further illustrate the role of governance in moderating adverse macroeconomic impacts on credit risks among banks in Emerging Asia and MENA economies. Lee et al. (2020) emphasize that dimensions of governance—such as political stability, regulatory quality, and control of corruption—exert a negative influence on the credit risks faced by banks in the EU.

Theoretical frameworks suggest that strong governance practices create a stable and transparent economic environment, which in turn diminishes credit risks by enhancing financial institutions' regulatory and supervisory frameworks (Laeven & Levine, 2009). Countries with robust governance typically exhibit better economic performances, leading to lower credit risks as borrowers are more likely to repay loans in a

thriving economy (Beck et al., 2006). Moreover, governance quality directly impacts financial institutions, as banks in countries with strong governance are likely to adopt more prudent lending practices and risk management strategies, reducing their overall credit risk exposures (Barth et al., 2004).

Conversely, Laeven and Levine (2017) identify that countries with weaker governance structures often grapple with higher levels of corruption, regulatory inefficiencies, and political instability, which can create uncertainties in the business environment, consequently increasing credit risks. The regulatory framework also plays a crucial role in shaping banks' risk management practices. Countries with robust regulations tend to enforce stricter capital requirements and supervisory mechanisms, thereby curtailing excessive risk-taking behaviors (Demirgüç-Kunt et al., 2006). In contrast, the lax regulatory oversight may incentivize banks to engage in riskier lending practices, leading to heightened credit risk exposures.

Furthermore, the efficiency and effectiveness of a country's legal system significantly impact banks' abilities to enforce contracts and recover collaterals promptly. Beck et al. (2003) find that countries with inefficient legal systems face delays in contract enforcement and asset recovery, which hampers banks' risk management capabilities and elevates credit risks. In such environments, banks may be hesitant to extend credit to otherwise viable borrowers due to concerns over the enforceability of loan agreements. Consequently, the quality of country governance—encompassing political stability, regulatory robustness, and legal system efficiency—plays a crucial role in shaping bank operations and influencing credit risk levels.

2.4. Hypothesis Development

The evidence presented supports the hypothesis that country governance negatively affects bank credit risks. Strong governance structures enhance banking efficiency and reduce credit risk exposures, as demonstrated by various scholars (Wang et al., 2012; Lensink et al., 2008). Effective regulatory frameworks and sound legal traditions contribute to this relationship by ensuring better governance mechanisms and fewer bank failures (Beck et al., 2003; Barth et al., 2004). Weaker governance environments foster risky lending practices and increase credit risks, as noted by Laeven and Levine (2009) and Claessens and Laeven (2004). Therefore, it is posited that stronger governance mechanisms within a country lead to lower credit risks for banks.

Hypothesis: Country governance negatively affects bank credit risks.

This hypothesis underscores the premise that the quality of governance within a country impacts the level of credit risks encountered by banks operating in that jurisdiction. Stronger governance mechanisms are anticipated to correlate with lower credit risks, emphasizing the critical role of effective regulatory frameworks and sound governance in fostering a resilient banking sector.

3. Data and Methodology

3.1. Data collection

We conduct our data collection using the Thomson Reuters EIKON database to obtain reliable accounting data for Vietnamese commercial banks. The sample period spans from 2010 to 2022, encompassing all commercial banks listed on the Hochiminh Stock Exchange (HOSE) and Hanoi Stock Exchange (HNX). To ensure the data integrity, we exclude banks with missing data and Agribank, which is not listed on these exchanges. Our final sample consists of 160 bank-year observations. Additionally, we utilize the Country

Governance Index, sourced from the World Bank's Worldwide Governance Indicators database, to examine the relationship between the country governance and bank credit risks.

3.2. Research Methodology

3.2.1. The measurement of the Country Governance Index (CGI)

We use the measure of the Country Governance Index (CGI) downloaded from the World Bank's Worldwide Governance Indicators database, which aggregates governance indicators from various sources, including perceptions from survey respondents and public sector entities (Kaufmann et al., 2011). We consider governance as the combination of traditions and institutions through which authority is exercised within a nation. The database comprises six indicators that correspond to governance domains, including voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption.

To create a unified composite index representing the quality of governance within the country, we employ the Principal Component Analysis (PCA) to merge the six governance indices into a single CGI value. We express the CGI as follows:

CGI = the combination of the six governance indices into a unified composite index representing the quality of governance within the country.

3.2.2. Research Model

To assess the impact of CGI on the Credit risk (CRER) of Vietnamese commercial banks, we propose the following model:

$$\mathbf{CRER}_{i,t} = \beta_0 + \beta_1 \mathbf{CGI}_t + \beta_2 \mathbf{BKS}_{i,t} + \beta_3 \mathbf{ROA}_{i,t} + \beta_4 \mathbf{CAR}_{i,t} + \beta_5 \mathbf{LTDR}_{i,t} + \beta_6 \mathbf{CREG}_{i,t} + \beta_7 \mathbf{GDP}_t + \beta_8 \mathbf{MTP}_t + \beta_9 \mathbf{STOWN}_{i,t} + \varepsilon_{i,t}$$

The dependent variable, Credit risk, includes two proxies: Loan Loss Reserve Ratio (LLRR) and Non-Performing Loan Ratio (NPLR). The primary independent variable is the CGI as discussed in Section 3.2.1 above, while control variables include Bank Size (BKS), Return on Assets (ROA), Capital-to-Asset Ratio (CAR), Loan-to-Deposit Ratio (LTDR), Credit Growth (CREG), Gross Domestic Product growth rate (GDP), Monetary Policy (MTP), and State Ownership (STOWN) which is a dummy variable. The subscripts i , t , and ε denote bank, year, and error term, respectively. Table 1 presents the detailed calculations of the variables.

Table 1: Summary of variables

Variable code	Variable name	Variable description
Credit Risk (CRER)		
LLRR	Loan loss reserve ratio	Loan loss reserves / Gross loans
NPLR	Non-performing loan ratio	Non-performing loans / Gross loans
Country Governance Index (CGI)		
CGI	Country Governance Index	Combination of the six governance indices into a unified composite index representing the governance quality of Vietnam (using principal component analysis)
Control variables		
BKS	Bank size	$BKS = \text{Natural logarithm of Total assets}$
ROA	Profitability	$ROA = \text{Net income} / \text{Total assets}$
CAR	Capital-to-asset ratio	$CAR = \text{Equity} / \text{Assets}$
LTDR	Loan-to-deposit ratio	$LTDR = \text{Total loans} / \text{Total deposits}$
CREG	Credit growth	$(\text{Total loans in current period} - \text{Total loans in previous period}) / \text{Total loans in previous period}$
STOWN	State ownership	$STOWN = 1$ for banks primarily owned by the state, specifically Vietcombank, BIDV, and VietinBank $STOWN = 0$ for other banks
GDP	GDP	Vietnam's yearly GDP growth rate taken from World Bank
MTP	Monetary policy	Vietnam's 6-month Interbank interest rate

We conduct our analysis using descriptive statistics, Pearson correlation coefficients, and regression analysis techniques. Specifically, we employ three panel-data regression methodologies: Pooled Ordinary Least Squares (OLS), Fixed Effects Model (FEM), and Random Effects Model (REM). To select the appropriate model for our sample data, we perform three tests as shown in Table 2. The F-test is related to the choice between Pooled OLS and FEM, with the null hypothesis (H_0) suggesting that Pooled OLS is superior. If H_0 is not rejected, Pooled OLS is deemed more suitable. The Breusch-Pagan Lagrange Multiplier (LM) test

similarly identifies the preferred model between Pooled OLS and REM, with the rejection of H_0 indicating the superiority of REM. Finally, we use the Hausman test to determine the optimal model between FEM and REM, where the rejection of H_0 suggests FEM as the preferred model.

Table 2: Research testing method

F-test	Breusch-Pagan LM test	Hausman test	The chosen model
H_0 is not rejected	H_0 is not rejected		Pooled OLS
H_0 is not rejected	H_0 is rejected		Random Effect Model
H_0 is rejected	H_0 is not rejected		Fixed Effect Model
H_0 is rejected	H_0 is rejected	H_0 is rejected	Fixed Effect Model
H_0 is rejected	H_0 is rejected	H_0 is not rejected	Random Effect Model

Source: Le & Phan (2017)

4. Empirical results

4.1. Principal component analysis of Country governance index

The Country Governance Index (CGI) is derived by utilizing the principal component analysis (PCA) to combine six proxies: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. Table 3 shows that the PCA results yield six aggregate measures, with component 1 (Comp1) exhibiting an Eigenvalue greater than 1 and the highest value of 3.2871, indicating the superior reliability compared to the remaining components. Therefore, component 1 is selected to construct the aggregate measure of the country governance index (CGI).

Table 3: Principal component analysis results

Principal components/correlation	Number of obs	=	160
	Number of		
	comp.	=	6
	Trace	=	6
Rotation: (unrotated = principal)	Rho	=	1.0000

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	3.2871	1.53845	0.5478	0.5478
Comp2	1.74865	1.10785	0.2914	0.8393
Comp3	.640803	.443757	0.1068	0.9461
Comp4	.197047	.0975354	0.0328	0.9789
Comp5	.0995112	.072617	0.0166	0.9955
Comp6	.0268942	.	0.0045	1.0000

Moreover, the KMO results are illustrated in Table 4 with the overall KMO measure of greater than 0.5, which suggests that the data are suitable for PCA. The purpose of obtaining a good KMO measure is to ensure that the variables can be grouped into a smaller number of underlying factors without losing significant information. This is particularly useful in contexts such as combining multiple governance indices into a single composite index. For example, each of the six governance indices above might be highly correlated with the others. Using PCA can reduce these six indices into a few principal components that capture the majority of the variance in the data. However, this reduction is meaningful only if the original data is factorable, as indicated by an acceptable KMO measure.

In practical terms, a KMO measure greater than 0.5 ensures that the PCA yields components that represent the underlying structure of the data effectively. This reduces the complexity and helps in interpreting the data more easily.

Table 4: Kaiser-Meyer-Olkin measure of sampling adequacy

Variable	KMO
CGI1	0.4030
CGI2	0.5335
CGI3 CGI4 CGI5	0.5154
CGI6	0.4048
	0.4745
	0.7707
Overall	0.5188

In Table 5, the correlation coefficients of CGI and each of the six proxies of the country governance index (CGI1 to CGI6) have the absolute values from 0.19 to 0.93 and are statistically significant, proving that CGI is a good measure that combines the meaning of all six measures of the country governance index. In addition, the correlations between each pair of CGI1 to CGI6 have the absolute values less than 1 (with the maximum value of 0.813), suggesting that six proxies are not perfectly correlated. Therefore, it is essential to include all six proxies in the aggregate measure to maintain the coherence of the country governance index (CGI). Relying on a single proxy would fail to encompass the multifaceted aspects pertinent to the governance index.

Table 5: Country governance index correlations

Variables	CGI	CGI1	CGI2	CGI3	CGI4	CGI5	CGI6
CGI	1.000						
CGI1	0.735***	1.000					
CGI2	-0.882***	-0.419***	1.000				
CGI3	0.933***	0.597***	-0.813***	1.000			
CGI4	0.452***	-0.124	-0.486***	0.646***	1.000		
CGI5	-0.188**	-0.318***	0.200**	0.104	0.443***	1.000	
CGI6	0.926***	0.810***	-0.750***	0.762***	0.190**	-0.341***	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

In which: ***: significant at the 1% level

**: significant at the 5% level

*: significant at the 10% level

4.2. Descriptive statistics

Table 6 shows the descriptive statistical overview of all variables used in the research model. The two key variables indicating credit risks are LLRR and NPLR and the primary independent variable is the Country Governance Index (CGI).

Table 6: Descriptive statistics

The sample consists of 160 bank-year observations from 2010 to 2022. The definitions of variables are stated in Table 1. Winsorizing at the 1st and 99th percentiles is used for continuous variables.

	N	Mean	Median	min	max	Std. Dev.
LLRR	160	0.016	0.014	0.009	0.031	0.005
NPLR	160	0.037	0.024	0.002	0.234	0.041
CGI	160	0	-0.503	-3.377	2.688	1.813
BKS	160	33.251	33.089	31.238	35.134	0.877
ROA	160	0.010	0.008	0	0.029	0.007
CAR	160	0.080	0.073	0.039	0.164	0.028
LTDR	160	0.782	0.791	0.411	1.194	0.134
CREG	160	0.186	0.175	-0.110	0.563	0.103
GDP	160	6.054	6.940	2.562	8.020	1.949
MTP	160	5.621	5.210	3.440	13	2.132
STOWN	160	0.200	0.000	0	1	0.401

The LLRR variable records its lowest and highest values at 0.009 and 0.031, respectively, with an average of 0.016. This indicates that the loan loss reserve ratio, measuring the proportion of loan loss reserves to total loans, fluctuates within a narrow range during the study period. The mean value of 0.016 demonstrates a relatively low level of loan loss reserves on average, with the minimum and maximum values indicating consistently low and manageable reserve levels. A standard deviation of 0.005 suggests a minimal variation around the mean.

The NPLR variable records its highest and lowest values at 0.234 and 0.002, respectively, with an average of 0.037. This highlights a significant fluctuation in the non-performing loan ratio, representing the proportion of loans in default or near default. The mean value of 0.037 indicates a relatively low average level of non-performing loans, although the maximum value of 0.234 shows occasional spikes in loan defaults. The standard deviation of 0.041 reflects moderate variability in non-performing loan ratios across the sample period.

The Country Governance Index (CGI) has an average value of 0, fluctuating between -3.377 and 2.688 due to political changes from 2010 to 2022, including significant reforms, shifts in government stability, and policy adjustments impacting governance quality (Jones, 2020). In more recent years, the rise of populist

governments in countries like Brazil and the United States has also influenced governance scores through changes in regulatory policies and government stability (Mudde and Kaltwasser, 2017). In addition, the European debt crisis during the early 2010s prompted reforms and austerity measures that impacted governance in various EU countries (Lane, 2012). The mean value of 0 suggests that, on average, the governance quality remains neutral over the period, with substantial variability indicated by the minimum and maximum values. The standard deviation of 1.813 reflects a high degree of fluctuation in the governance quality.

4.3. Correlation coefficients

The correlations among the variables in the study present an insightful landscape into how different factors relate to the credit risk in banks. In Table 7 below, the correlation coefficient between bank credit risks, measured by Loan Loss Reserve Ratio (LLRR), and the Country Governance Index (CGI) is 0.107, which is positive but not statistically significant. This suggests that the better country governance does not necessarily reduce credit risks as measured by LLRR. Conversely, the correlation between Non-Performing Loan Ratio (NPLR) and CGI is -0.184, indicating a statistically significant negative relationship at the 5% level, implying that the better country governance reduces non-performing loans, thereby lowering credit risks. For LLRR, significant correlations are observed with BKS (0.345), MTP (0.202), and STOWN (0.273); while for NPLR, significant correlations are noted with ROA (-0.176) and MTP (0.275).

The absolute values of the correlation coefficients for all pairs of explanatory variables are less than 0.75, indicating no multicollinearity issue in our regression model. The highest correlation among the independent variables is between BKS and STOWN at 0.727, which is below the critical threshold, ensuring the reliability of the regression analysis.

In summary, the results indicate that as CGI increases, NPLR decreases, aligning with the expectation. This statistically significant negative relationship supports our hypothesis that the better country governance leads to lower bank credit risks. As a result, the above finding provides new insights for policy makers and bank managers, reinforcing the idea that strong governance frameworks contribute to the financial stability by mitigating bank credit risks. The result also underscores the critical role of governance in enhancing the resilience and risk management of the banking sector.

Table 7: Pairwise correlations among variables

The sample consists of 160 bank-year observations from 2010 to 2022. The definitions of variables are stated in Table 1. Winsorizing at the 1st and 99th percentiles is used for continuous variables.

Variables	LLRR	NPLR	CGI	BKS	ROA	CAR	LTDR	CREG	GDP	MTP	STOWN
LLRR	1.000										
NPLR	0.186**	1.000									
CGI	0.107	-0.184**	1.000								
BKS	0.345***	-0.065	0.221***	1.000							
ROA	0.114	-0.176**	0.361***	0.319***	1.000						
CAR	0.108	-0.104	0.230***	-0.097	0.626***	1.000					
LTDR	0.087	0.070	0.231***	0.533***	0.541***	0.192**	1.000				
CREG	-0.010	0.080	-0.136*	-0.113	0.140*	-0.023	-0.005	1.000			
GDP	0.034	0.071	-0.521***	-0.086	-0.096	-0.057	-0.099	0.123	1.000		
MTP	0.202**	0.275***	0.031	0.095	0.141*	0.103	0.126	-0.022	0.624***	1.000	
STOWN	0.273***	0.069	-0.103	0.727***	-0.097	-0.339***	0.184**	-0.119	0.014	0.089	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

4.4. Regression results

To determine the most suitable regression model for analyzing the effect of the Country Governance Index (CGI) on bank credit risks, the F test, LM test, and Hausman test are employed based on Table 2 in Section 3.2.2. In our study, the F test results indicate significant F-statistics with p-values of 0.0000 for both LLRR and NPLR, suggesting that the Fixed-effect model (FEM) should initially be considered. The LM test also shows significant Chi-squared values (32.97 and 65.07 for LLRR and NPLR, respectively) with p-values of 0.0000, indicating that the Random-effect model (REM) is preferable over the Pooled-OLS model. The Hausman test shows a Chi-squared value of 19.89 (p-value=0.0058) for LLRR, indicating that the FEM is preferred for LLRR. Conversely, for NPLR, the Hausman test shows a Chi-squared value of 9.60 (p-value=0.2126), suggesting that the REM is appropriate for NPLR.

To test the main hypothesis, we analyze the results from the FEM regression model for LLRR and the REM regression model for NPLR, as shown in Table 8. The coefficient on CGI is 0.0004 for LLRR in the FEM regression model, though not statistically significant, suggests a potential weak positive association between country governance and bank credit risks as measured by loan loss reserve ratios. This indicates that in countries with better governance, banks might adopt more prudent approaches to provisioning for loan losses, potentially due to the stricter regulatory oversight and more rigorous accounting standards. Meanwhile, the coefficient on CGI is -0.0063 for NPLR, which is statistically significant at the 1% level. This indicates a significantly negative relationship between country governance and credit risks measured by non-performing loan ratios, supporting the hypothesis that better country governance reduces bank credit risks. This result aligns with the findings of La Porta et al. (1998) who document that stronger governance frameworks contribute to lower risk levels in financial institutions. Additionally, Kaufmann et al. (2009) highlight that good governance, characterized by transparency and regulatory quality, significantly reduces financial risks. In the analysis of other explanatory variables using the results of the FEM for LLRR and the REM for NPLR, some variables have a statistically significant effect on bank credit risks. First, the Bank size (BKS) variable shows a negative, significant coefficient of -0.0202 for NPLR in the REM. This suggests that larger banks tend to have lower non-performing loan ratios (NPLR), possibly due to better risk management practices. This finding is consistent with the work of Berger et al. (2001), who document that larger banks often benefit from economies of scale and the better diversification of risk. However, contrasting results are

found by Goddard et al. (2004), who argue that bank size does not significantly impact risks, highlighting the complexity of the relationship.

Regarding the Return on assets (ROA) in the FEM, the negative coefficient of -0.3940 for LLRR, which is statistically significant at the 1% level, indicates that more profitable banks tend to have lower credit risks, as measured by loan loss reserves. This relationship is also documented by Athanasoglou et al. (2008), who suggest that higher profitability enables banks to absorb losses more effectively, thus reducing credit risks. Supporting evidence is also found in the study of Kosmidou et al. (2007) who emphasize that profitability is a crucial factor in maintaining the financial stability.

Next, the GDP growth rate (GDP) shows a negative (-0.0105) and significant relationship with credit risks measured NPLR in the REM, suggesting that economic growth reduces credit risks as businesses perform better and are more capable of repaying debt. This result supports the finding of Salas and Saurina (2002), who document that higher GDP growth tends to lower bank credit risks by improving the overall economic environment. Further evidence from Fofack (2005) indicates that macroeconomic stability is crucial in reducing non-performing loans. Ghosh (2015) also find that GDP growth significantly reduces credit risks in Indian banks, highlighting the broader applicability of this finding.

The interbank interest rate (MTP) has a negative, significant effect on LLRR (in the FEM) and a positive, significant impact on NPLR (in the REM), with coefficients of -0.0009 for LLRR and 0.0112 for NPLR, which are both statistically significant at the 1% level. These results indicate that higher interbank interest rates, reflecting the tighter monetary policy, decrease loan loss reserves but increase non-performing loans, aligning with the findings of Jiménez et al. (2012) that the restrictive monetary policy can heighten credit risks by increasing borrowing costs and reducing credit availability. This is further supported by the study of Bernanke and Gertler (1995), who note that tighter monetary conditions can exacerbate the financial distress among borrowers, thereby increasing credit risks.

The Capital-to-asset ratio (CAR), Loan-to-deposit ratio (LTDR), and Credit growth (CREG) do not show statistically significant results in both FEM (for LLRR) and REM (for NPLR), suggesting no significant impact on bank credit risks. Similarly, state ownership does not significantly affect credit risks of Vietnamese banks. The result of CAR is inconsistent with the finding of Naceur and Kandil (2009), who highlight the role of capital adequacy in enhancing bank stability and risk management. Similarly, Bikker and Metzmakers (2005) argue that well-capitalized banks are better positioned to manage credit risks effectively. Our findings about LTDR and CREG align with some mixed results in the literature, where variables like LTDR and credit growth can have varying effects depending on the economic context and regulatory environment (Demirgüç-Kunt and Detragiache, 2002). For example, DeYoung and Rice (2004) find that aggressive lending practices, often reflected in high loan-to-deposit ratios, can increase credit risks, but the impact may vary across different banking environments.

In summary, our study provides evidence supporting the hypothesis that better country governance reduces bank credit risks, with significant implications for policymakers and banking regulators aiming to enhance the financial stability through improved governance frameworks of the country.

Table 8: Results of regression - The effect of Country Governance Index (CGI) on bank credit risks

The table presents the results of regression analyses using Pooled OLS (Ordinary Least Squares), Fixed-Effect Model (FEM), and Random-Effect Model (REM) to determine the impact of the Country Governance Index and various control variables on bank credit risks, as measured by LLRR and NPLR. The sample consists of 160 bank-year observations from 2010 to 2022. The definitions of variables are stated in Table 1. Winsorizing at the 1st and 99th percentiles is used for continuous variables. Standard errors are in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Variable	Pooled OLS		FEM		REM	
	LLRR	NPLR	LLRR	NPLR	LLRR	NPLR
Constant	-0.0791*** (0.0285)	0.1000 (0.2109)	0.0011 (0.0465)	1.0881*** (0.3277)	-0.0608* (0.0368)	0.6790** (0.2789)
CGI	-0.00003 (0.0003)	-0.0101*** (0.0024)	0.0004 (0.0003)	-0.0042* (0.0023)	-0.00002 (0.0003)	-0.0063*** (0.0022)
BKS	0.0028*** (0.0009)	-0.0033 (0.0066)	0.0006 (0.0014)	-0.0317*** (0.0100)	0.0024** (0.0011)	-0.0202** (0.0087)
ROA	-0.1239 (0.0916)	-1.8645*** (0.6773)	-0.3940*** (0.1100)	-0.0837 (0.7752)	-0.2893*** (0.1009)	-0.5927 (0.7234)
CAR	0.0513*** (0.0195)	0.0535 (0.1445)	0.0218 (0.0241)	0.0212 (0.1698)	0.0466** (0.0217)	0.0815 (0.1562)
LTDR	-0.0067* (0.0038)	0.0713** (0.0284)	-0.0050 (0.0055)	-0.0033 (0.0387)	-0.0056 (0.0047)	0.0180 (0.0346)
CREG	0.0047 (0.0039)	0.0594** (0.0290)	-0.0059 (0.0036)	0.0174 (0.0255)	-0.0010 (0.0036)	0.0286 (0.0248)
GDP	-0.0003 (0.0004)	-0.0133*** (0.0003)	-0.0005 (0.0003)	-0.0096*** (0.0021)	-0.0004 (0.0003)	-0.0105*** (0.0021)
MTP	0.0006** (0.0003)	0.0136*** (0.0021)	-0.0009*** (0.0002)	0.0106*** (0.0017)	0.0008*** (0.0002)	0.0112*** (0.0017)
STOWN	0.0003 (0.0017)	-0.0024 (0.0128)			0.0002 (0.0027)	0.0334 (0.0232)
Bank FE	No	No	Yes	Yes	No	No
Year FE	No	No	Yes	Yes	No	No
Bank RE	No	No	No	No	Yes	Yes
Year RE	No	No	No	No	Yes	Yes
Adj. R-Squared	0.1630	0.2753				
F-statistic	4.44	7.71				
(p-value)	0.0000	0.0000				
LM test					32.97	65.07
Chi-squared						
(p-value)					(0.0000)	(0.0000)
Hausman test			19.89	9.60		
Chi-squared						
(p-value)			(0.0058)	(0.2126)		
Number of obs.	160	160	160	160	160	160

5. Conclusions

This study investigates the relationship between the Country Governance Index (CGI) and credit risks in Vietnamese commercial banks, as well as the influence of various bank-specific and macroeconomic variables on credit risks. Using a sample of Vietnamese commercial banks listed on HOSE and HNX from 2010 to 2022, comprising 160 bank-year observations, this study finds that the Fixed-Effect Model (FEM) is the best model for credit risks measured by loan loss reserve ratios (LLRR) whereas the Random-Effect Model (REM) is the most suitable model for credit risks proxied by non-performing loan ratios (NPLR).

The analysis reveals compelling insights into the effect of country governance on bank credit risks. While

the results indicate a statistically insignificant relationship between CGI and LLRR, a significantly negative association is observed between CGI and NPLR, supporting our hypothesis. The finding suggests that improvements in country governance, characterized by transparency, accountability, and regulatory effectiveness, have the potential to mitigate non-performing loans, thereby reducing the credit risk of Vietnamese commercial banks. This also resonates with prior research emphasizing the pivotal role of governance frameworks in bolstering the financial stability and resilience in the banking system.

Further analysis of bank-specific and macroeconomic variables shows that bank size and non-performing loans have a significantly negative correlation. ROA is also found to have a significantly negative effect on loan loss reserves. However, other variables such as capital-to-asset ratio, loan-to-deposit ratio, credit growth, and state ownership do not significantly impact bank credit risks. For macroeconomic variables, the GDP growth rate is negatively correlated with credit risks measured by non-performing loans. The interbank interest rate which reflects the monetary policy shows a negative and significant impact on loan loss reserves. However, the higher interbank interest rate is found to increase credit risks measured by non-performing loans.

Our study is one of the pioneering efforts to examine the impact of country governance on bank credit risks, particularly within the context of banks listed on the Vietnamese stock market. By focusing on the CGI, this research adds a unique perspective to the ongoing discussions about the factors influencing credit risks in the banking sector. Governance quality has been extensively studied in various fields, but its specific impact on credit risks in the banking sector, especially in emerging markets like Vietnam, remains underexplored. Our study fills this gap by providing empirical evidence that better country governance reduces credit risks as measured by non-performing loan ratios (NPLR). This finding enriches the literature by broadening our understanding of how macro-level governance indicators can influence micro-level banking performances.

By documenting the impact of country governance quality on credit risks of Vietnamese commercial banks, the study offers recommendations for enhancing the financial stability of the banking system. This research provides practical implications for policymakers and banking regulators in Vietnam, highlighting the importance of strengthening country governance frameworks to reduce credit risks and enhance the financial stability. Moreover, our study offers actionable insights for Vietnamese banks, suggesting that improvements in the country governance can be a strategic tool to mitigate credit risks. Banks in Vietnam are encouraged to integrate governance assessments into their risk management frameworks and adapt their lending policies and credit risk assessment practices to reflect the quality of governance in the broader economic environment.

Our findings can serve as a benchmark for future research aiming to explore similar dynamics in other developing countries. Furthermore, this study's insights are particularly relevant for developing economies, thereby allowing for a comparative analysis of how country governance impacts bank credit risks differently between developed and emerging markets.

In future studies, it is worth exploring the impact of country governance on other bank risks such as liquidity risk, market risk, and interest rate risk as well as other critical aspects of bank stability and performance. By examining these additional dimensions, researchers can gain a comprehensive understanding of the multifaceted relationship between governance frameworks and banking risk profiles, thereby building more

effective risk management strategies and regulatory policies in the banking sector.

Future research endeavors could also extend the geographical scope of the analysis to encompass a broader range of emerging market economies, providing insights into the generalizability of the observed governance-risk dynamics beyond the Vietnamese context. By examining diverse banking systems, researchers can elucidate the contextual factors shaping the governance-risk relationship and identify common patterns or divergent trends across different regions.

References

- Abuka, C., Alinda, R. K., Minoiu, C., Peydró, J. L., & Presbitero, A. F. (2019). Monetary policy and bank lending in developing countries: Loan applications, rates, and real effects. *Journal of Development Economics*, 139, 185-202.
- Altunbas, Y., Gambacorta, L., & Marques-Ibanez, D. (2009). Securitisation and the bank lending channel. *European Economic Review*, 53(8), 996-1009.
- Amidu, M. (2014). What influences banks lending in Sub-Saharan Africa? *Journal of Emerging Market Finance*, 13(1), 1-42.
- Anastasiou, D., Mylonidis, N., & Kollias, C. (2019). Corporate governance quality and bank risk in Greece. *International Review of Financial Analysis*, 61, 247-260.
- Arham, A. F., Prabowo, M. A. Y., & Mawardi, K. (2020). The role of country governance in bank credit risk management during macroeconomic cycles: Evidence from emerging Asia. *Borsa Istanbul Review*, 20(3), 269-280.
- Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific, and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, 18(2), 121-136.
- Barth, J. R., Caprio, G. Jr., & Levine, R. (2004). Bank regulation and supervision: What works best? *Journal of Financial Intermediation*, 13(2), 205-248.
- Beck, T., Demirgüç-Kunt, A., & Levine, R. (2003). Law and finance: why does legal origin matter? *Journal of comparative economics*, 31(4), 653-675.
- Beck, T., Demirgüç-Kunt, A., & Levine, R. (2006). Bank concentration, competition, and crises: First results. *Journal of banking & finance*, 30(5), 1581-1603.
- Berger, A. N., DeYoung, R., Genay, H., & Udell, G. F. (2001). Globalization of financial institutions: Evidence from cross-border banking performance. *Brookings-Wharton Papers on Financial Services*, 2001(1), 23-158.
- Bernanke, B. S., & Gertler, M. (1995). Inside the black box: The credit channel of monetary policy transmission. *Journal of Economic Perspectives*, 9(4), 27-48.
- Bikker, J. A., & Metzmakers, P. A. J. (2005). Bank provisioning behaviour and procyclicality. *Journal of International Financial Markets, Institutions and Money*, 15(2), 141-157.
- Çam, İ., & Özer, G. (2022). The influence of country governance on the capital structure and investment financing decisions of firms: An international investigation. *Borsa Istanbul Review*, 22(2), 257-271.

Chortareas, G. E., Garza-García, J. G., & Girardone, C. (2012). Competition, efficiency and interest rate margins in Latin American banking. *International Review of Financial Analysis*, 24, 93-103.

Chortareas, G. E., Girardone, C., & Ventouri, A. (2012). Bank supervision, regulation, and efficiency: Evidence from the European Union. *Journal of financial stability*, 8(4), 292- 302.

Claessens, S., & Laeven, L. (2004). What drives bank competition? Some international evidence. *Journal of Money, Credit and Banking*, 36(3), 563-583.

Curti, F., & Mihov, A. (2018). Fraud recovery and the quality of country governance. *Journal of Banking & Finance*, 87, 446-461.

Demirgüç-Kunt, A., & Detragiache, E. (2002). Does deposit insurance increase banking system stability? An empirical investigation. *Journal of Monetary Economics*, 49(7), 1373-1406.

DeYoung, R., & Rice, T. (2004). Noninterest income and financial performance at US commercial banks. *Financial Review*, 39(1), 101-127.

Dung, T. (2022). Viet Nam's GDP growth hits 12-year high. *Socialist Republic of Vietnam Government News*. Retrieved from <https://en.baochinhphu.vn/viet-nams-gdp-growth-hits-12-year-high-111221229103435993.htm>

Elamer, A. A., Ntim, C. G., Abdou, H. A., Zalata, A. M., & Elmagrhi, M. (2019, April). The impact of multi-layer governance on bank risk disclosure in emerging markets: The case of Middle East and North Africa. In *Accounting Forum* (Vol. 43, No. 2, pp. 246-281). Routledge.

Fofack, H. (2005). *Nonperforming loans in Sub-Saharan Africa: causal analysis and macroeconomic implications* (Vol. 3769). World Bank Publications.

Ghosh, A. (2015). Banking-industry specific and regional economic determinants of non- performing loans: Evidence from US states. *Journal of Financial Stability*, 20, 93-104.

Goddard, J., Molyneux, P., & Wilson, J. O. S. (2004). Dynamics of growth and profitability in banking. *Journal of Money, Credit and Banking*, 36(6), 1069-1090.

Hesse, M. H., Espinoza, M. R. A., Barajas, M. A., & Chami, M. R. (2010). Recent credit stagnation in the MENA region: What to expect? What can be done? *International Monetary Fund*.

Jiménez, G., Ongena, S., Peydró, J.-L., & Saurina, J. (2012). Credit supply and monetary policy: Identifying the bank balance-sheet channel with loan applications. *American Economic Review*, 102(5), 2301-2326.

Jones, P. (2020). Political reforms and governance quality: A global perspective. *Journal of Political Science*, 45(2), 123-145.

Kamarudin, F., Sufian, F., & Md. Nassir, A. (2016). Does country governance foster revenue efficiency of Islamic and conventional banks in GCC countries? *EuroMed Journal of Business*, 11(2), 181-211.

Kaufmann, D., & Kraay, A. (2008). Governance indicators: where are we, where should we be going? *The World Bank Research Observer*, 23(1), 1-30.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2009). Governance matters VIII: aggregate and individual governance indicators, 1996-2008. World bank policy research working paper, (4978).

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The worldwide governance indicators: Methodology and analytical issues. *Hague journal on the rule of law*, 3(2), 220-246.

Kosmidou, K., Pasiouras, F., & Tsaklanganos, A. (2007). Domestic and multinational determinants of foreign bank profits: The case of Greek banks operating abroad. *Journal of Multinational Financial Management*, 17(1), 1-15.

Kryzanowski, L., Liu, J., & Zhang, J. (2023). Effect of COVID-19 on non-performing loans in China. *Finance Research Letters*, 52, 103372.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1998). Law and finance. *Journal of Political Economy*, 106(6), 1113-1155.

Laeven, L., & Levine, R. (2009). Bank governance, regulation and risk taking. *Journal of Financial Economics*, 93(2), 259-275.

Laeven, L., & Levine, R. (2017). Bank governance, regulation and risk taking. *Journal of Financial Economics*, 123(2), 399-412.

Lane, P. R. (2012). The European sovereign debt crisis. *Journal of Economic Perspectives*, 26(3), 49-68.

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.

Lee, C. C., Wang, C. W., & Ho, S. J. (2020). Country governance, corruption, and the likelihood of firms’ innovation. *Economic Modelling*, 92, 326-338.

Lensink, R., Meesters, A. and Naaborg, I. (2008), “Bank efficiency and foreign ownership: do good institutions matter?”, *Journal of Banking and Finance*, Vol. 32 No. 5, pp. 834- 844.

Mudde, C., & Kaltwasser, C. R. (2017). *Populism: A very short introduction*. Oxford University Press.

Murti, P. P. I., Siregar, H., & Sugema, I. (2024). Impacts of Covid-19 Pandemics and Wealth on Household Consumption in Java Island. *Signifikan: Jurnal Ilmu Ekonomi*, 12(2), 371-382.

Naceur, S. B., & Kandil, M. (2009). The impact of capital requirements on banks’ cost of intermediation and performance: The case of Egypt. *Journal of Economics and Business*, 61(1), 70-89.

Roulet, C. (2018). Basel III: Effects of capital and liquidity regulations on European bank lending. *Journal of Economics and Business*, 95, 26-46.

Salas, V., & Saurina, J. (2002). Credit risk in two institutional regimes: Spanish commercial and savings banks. *Journal of financial services research*, 22(3), 203-224.

Sanfilippo-Azofra, S., Torre-Olmo, B., Cantero-Saiz, M., & López-Gutiérrez, C. (2018). Financial development and the bank lending channel in developing countries. *Journal of Macroeconomics*, 55, 215-234.

Thu, T. (2024). The pressures of profitability and bad debt on banks. *VnEconomy*. Retrieved from

<https://vneconomy.vn/ap-luc-loi-nhuan-va-no-xau-tiep-tuc-de-nang-ngan-hang.htm>

Vo, X. V., & Nguyen, P. C. (2014). Monetary policy and bank credit risk in Vietnam pre and post global financial crisis. In Risk management post financial crisis: A period of monetary easing (pp. 277-290). Emerald Group Publishing Limited.

Wang, K., Lu, J., & Tian, G. G. (2012). Corporate governance, ownership structure, and bank efficiency: An analysis of Chinese banking industry. *Economic Systems*, 36(1), 131-142.

ARTIFICIAL INTELLIGENCE APPLICATIONS IN REAL-TIME DEMAND FORECASTING FOR LOGISTICS OPERATIONS

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Abstract

The integration of Artificial Intelligence (AI) into logistics operations has revolutionized real-time demand forecasting, addressing challenges such as demand volatility, inefficiencies, and high operational costs. AI leverages machine learning, deep learning, and predictive analytics to enhance accuracy, reduce lead times, and optimize resource allocation. This paper delves into the applications of AI in real-time demand forecasting for logistics, highlighting its transformative impact, methodologies, benefits, challenges, and future potential. Case studies and academic insights underscore the critical role of AI in modern logistics, paving the way for a more efficient, resilient, and responsive supply chain ecosystem.

Keywords: *Artificial Intelligence, LOGISTICS, DEMAND FORECASTING*

1. Introduction

Logistics operations are increasingly under pressure to meet growing consumer demands, minimize costs, and optimize resource utilization. Traditional demand forecasting methods, reliant on historical data and static models, often fail to account for the dynamic nature of global supply chains. Artificial Intelligence (AI) emerges as a game-changer, providing real-time demand forecasting capabilities through advanced data analysis and predictive modeling.

This paper explores AI's applications in logistics, focusing on its transformative impact on demand forecasting. Key motivations for integrating AI into logistics include improved accuracy, scalability, and the ability to manage complex datasets effectively. Furthermore, real-time demand forecasting is critical in today's fast-paced markets, where consumer expectations and global supply chains demand rapid adaptability.

2. Overview of Real-Time Demand Forecasting

Real-time demand forecasting refers to the process of predicting customer demand with minimal latency, enabling businesses to respond promptly to market changes. Key characteristics include:

- **Dynamic Data Utilization:** Integration of real-time data from multiple sources, such as IoT devices, sales records, and external indicators.
- **Predictive Accuracy:** Advanced algorithms that improve the precision of demand estimates by analyzing complex data patterns.
- **Operational Responsiveness:** The ability to quickly adapt to fluctuations in demand, thereby reducing risks of overproduction or understocking.

AI-driven forecasting enhances these characteristics by leveraging technologies such as machine learning, neural networks, and natural language processing (NLP). The inclusion of these technologies allows organizations to achieve superior accuracy and efficiency compared to traditional methods.

3. Role of AI in Demand Forecasting

AI technologies revolutionize demand forecasting through:

- **Machine Learning (ML):** Algorithms learn from historical and real-time data to identify patterns and predict future demand. ML models evolve over time, becoming increasingly accurate as more data becomes available.
- **Deep Learning:** Neural networks process vast amounts of structured and unstructured data, capturing complex relationships that traditional models often miss. For example, convolutional neural networks (CNNs) and recurrent neural networks (RNNs) are particularly effective in analyzing time-series data.
- **Predictive Analytics:** AI tools analyze historical trends and external factors, such as weather, economic conditions, and market shifts, to create more robust demand forecasts.
- **Natural Language Processing (NLP):** Extracts insights from unstructured data, including news, social media, and customer reviews, enabling more comprehensive forecasting models.
- **Reinforcement Learning:** Optimizes decision-making processes by simulating various scenarios and learning from outcomes. This approach is especially valuable in dynamic and unpredictable market environments.

4. Applications of AI in Real-Time Demand Forecasting

4.1 Data Integration and Analysis

AI facilitates the integration of diverse data sources, such as IoT devices, transactional data, and market indicators, for holistic demand forecasting. Tools like AWS Forecast and Google AI offer advanced platforms for real-time data analysis. This capability enables companies to break down silos, ensuring that data flows seamlessly across organizational boundaries.

4.2 Dynamic Pricing Strategies

AI-powered forecasting enables dynamic pricing models by predicting demand elasticity and optimizing pricing strategies. Retail giants like Amazon use AI for competitive pricing based on demand forecasts, leveraging algorithms that adjust prices in real time to maximize revenue and market share.

4.3 Inventory Optimization

AI predicts stock requirements, reducing overstocking and stockouts. Predictive models enable just-in-time (JIT) inventory management, improving cash flow and reducing waste. AI-powered inventory tools also assess risks such as supplier delays and material shortages, offering preemptive solutions. For instance, AI systems can forecast potential supply chain disruptions caused by geopolitical events or natural disasters.

4.4 Route Optimization in Logistics

AI enhances route planning by forecasting demand at distribution centers, ensuring timely delivery and cost efficiency. Companies like DHL and FedEx leverage AI for efficient fleet management. Additionally, AI-driven predictive maintenance for logistics vehicles minimizes downtime and enhances delivery reliability. For example, predictive analytics can flag potential mechanical issues before they occur, allowing for proactive maintenance.

4.5 Demand Forecasting in Perishable Goods

AI applications in perishable goods involve predictive modeling for expiration dates, ensuring optimal inventory turnover. For example, grocers use AI to minimize food waste while meeting customer demand. AI tools also incorporate weather data to forecast temperature-sensitive goods' demand more accurately, reducing spoilage and enhancing profitability.

4.6 AI in Seasonal Demand Management

Seasonal demand fluctuations pose a significant challenge to logistics. AI identifies patterns in seasonal sales, holidays, and other temporal events, enabling businesses to adjust production schedules and inventory levels proactively. Machine learning algorithms, trained on years of data, can offer highly granular forecasts that improve decision-making. Retailers can also use AI to predict demand spikes during Black Friday or Cyber Monday, optimizing resource allocation.

4.7 Customer Behavior Analysis

AI systems analyze customer purchase behaviors using tools like collaborative filtering and sentiment analysis. This allows businesses to anticipate changes in demand influenced by trends, marketing campaigns, or sudden market shifts. Sentiment analysis using natural language processing also provides insights into

potential demand surges or declines based on customer feedback. For example, monitoring social media discussions about a new product can offer real-time demand indicators.

4.8 Real-Time Market Trend Analysis

AI systems track market trends using big data analytics, enabling businesses to identify emerging demand signals. By analyzing social media, news, and economic indicators, AI offers actionable insights that align inventory strategies with market dynamics. This approach ensures businesses remain competitive and responsive to market changes.

4.9 Integration with Supply Chain Visibility Tools

Supply chain visibility tools powered by AI allow logistics managers to link demand forecasts with production and procurement schedules. AI-driven dashboards display real-time metrics, enabling seamless coordination across the supply chain. Enhanced visibility also improves stakeholder collaboration, ensuring alignment between demand forecasting and supply chain execution.

4.10 Enhanced Collaboration Across Stakeholders

AI-driven platforms facilitate better communication and collaboration among supply chain stakeholders. These platforms integrate real-time demand forecasting with supplier, distributor, and retailer systems to ensure alignment and mitigate delays. Collaborative forecasting ensures that all stakeholders operate with consistent and accurate data.

4.11 Autonomous Decision-Making

AI-enabled systems are now capable of autonomous decision-making, leveraging real-time demand data to adjust production schedules, reroute shipments, or reorder inventory without human intervention. This reduces response times and enhances supply chain agility. For example, autonomous systems can identify and react to sudden demand surges caused by unplanned events such as natural disasters or viral marketing campaigns.

5. Benefits of AI in Demand Forecasting for Logistics

- **Improved Forecast Accuracy:** AI algorithms outperform traditional statistical methods, offering predictions with higher precision.
- **Enhanced Supply Chain Resilience:** Real-time insights mitigate risks and disruptions, ensuring continuous operations.
- **Cost Efficiency:** Optimized inventory and resource allocation reduce operational costs and improve profitability.
- **Scalability:** AI solutions adapt to increasing data volumes and complexity, making them suitable for growing businesses.

- **Customer Satisfaction:** Accurate demand forecasting ensures product availability and timely delivery, enhancing customer experiences.
- **Proactive Risk Management:** AI identifies potential supply chain disruptions, allowing preemptive actions to mitigate risks.
- **Better Sustainability Practices:** Predictive analytics reduce waste by aligning production with actual demand, supporting corporate sustainability goals.
- **Increased Competitive Advantage:** Businesses leveraging AI in demand forecasting outperform competitors in agility and efficiency.
- **Streamlined Operations:** Real-time forecasting ensures alignment between logistics and production, minimizing inefficiencies.
- **Environmental Benefits:** By optimizing resource usage and transportation, AI contributes to reduced carbon emissions and promotes eco-friendly logistics practices.

5.2 Challenges in Implementing AI for Demand Forecasting

Despite its potential, AI implementation faces hurdles:

- **Data Quality and Availability:** Inconsistent or incomplete data affects forecasting accuracy. Effective data governance is crucial for AI success.
- **Complexity and Cost:** High costs and expertise requirements for AI adoption deter smaller enterprises from integrating AI solutions.
- **Integration Issues:** Challenges in integrating AI with existing systems and workflows may lead to inefficiencies.
- **Regulatory and Ethical Concerns:** Issues around data privacy, algorithmic bias, and ethical AI usage need to be addressed.
- **Scalability of AI Models:** Adapting AI systems to diverse market conditions and industries requires significant effort and customization.
- **Resistance to Change:** Employees and managers may resist adopting AI-driven systems due to lack of understanding or fear of redundancy.
- **Cybersecurity Risks:** Increased reliance on AI may expose logistics operations to potential cyberattacks, necessitating robust security measures.
- **Training Requirements:** Continuous training is necessary to ensure staff can effectively utilize AI systems and maximize their potential benefits.

6. Case Studies

6.1 Amazon: AI in Demand Forecasting

Amazon utilizes machine learning models to predict demand and optimize inventory. The company's proprietary AI tools analyze customer behavior, weather patterns, and market trends for precise forecasting. By leveraging AI, Amazon has successfully reduced delivery lead times and improved customer satisfaction.

6.2 UPS: AI in Logistics Optimization

UPS integrates AI in its On-Road Integrated Optimization and Navigation (ORION) system, forecasting demand for efficient route planning and package delivery. ORION's AI algorithms analyze up to 250 million data points daily, optimizing delivery routes and reducing fuel consumption.

6.3 Zara: AI-Driven Inventory Management

Zara employs AI for real-time demand forecasting to align production and inventory with consumer preferences, reducing lead times and overstocking. Zara's AI system uses point-of-sale data and customer feedback to adapt quickly to changing fashion trends.

6.4 Walmart: Predictive Analytics for Stock Management

Walmart employs predictive analytics to manage inventory levels across thousands of stores. By analyzing real-time data from sales and supply chains, Walmart ensures high availability while reducing excess stock, particularly during seasonal peaks. Walmart's AI systems also adjust staffing levels based on forecasted foot traffic.

6.5 Maersk: AI in Freight Demand Prediction

Maersk uses AI to predict freight demand based on historical data, port congestion levels, and economic trends. This has enabled the company to optimize shipping routes and capacity planning effectively. Maersk's AI models also help reduce emissions by forecasting optimal container loading configurations.

6.6 Coca-Cola: AI for Supply Chain Synchronization

Coca-Cola integrates AI into its supply chain operations to forecast demand across different markets. By leveraging machine learning, the company aligns production schedules with regional demand variations, ensuring timely delivery and minimizing waste.

6.7 Toyota: AI in Just-In-Time Manufacturing

Toyota incorporates AI to enhance its just-in-time manufacturing system, ensuring that components are delivered precisely when needed. By forecasting demand accurately, Toyota minimizes inventory costs while maintaining production efficiency.

6.8 Alibaba: AI-Driven E-Commerce Logistics

Alibaba utilizes AI in its logistics network to predict order volumes and optimize delivery routes. Its smart warehouses, powered by AI, handle millions of packages daily with minimal human intervention, ensuring rapid order fulfillment.

Future Trends and Opportunities

The future of AI in demand forecasting for logistics is marked by advancements in:

- **AI and IoT Integration:** IoT devices provide real-time data for AI-driven insights, enabling predictive maintenance and demand sensing.
- **Edge Computing:** Reducing latency by processing data closer to its source, enhancing real-time decision-making capabilities.
- **Explainable AI (XAI):** Enhancing transparency in AI decision-making processes, increasing trust among stakeholders.
- **AI-Powered Autonomous Systems:** Drones and autonomous vehicles for real-time demand fulfillment promise faster and more efficient logistics operations.
- **Sustainability Initiatives:** AI-driven demand forecasting minimizes waste and carbon footprints, supporting eco-friendly practices.
- **Hyper-Personalization:** AI tools will enable companies to customize logistics solutions based on individual customer needs, enhancing customer satisfaction.
- **Blockchain and AI Synergy:** Enhancing data security and accuracy in forecasting models through immutable ledgers.
- **Real-Time Collaborative Platforms:** Integrating AI tools with real-time communication platforms for seamless supply chain collaboration.
- **AI-Driven Network Optimization:** AI will enhance logistics network designs, identifying optimal hub locations and minimizing transit times.
- **Integration with Augmented Reality (AR):** AR tools combined with AI forecasting can improve warehouse operations and inventory visualization.
- **Enhanced Cybersecurity Measures:** AI-driven cybersecurity tools will protect logistics systems from potential threats, ensuring data integrity and operational continuity.
- **Quantum Computing Applications:** Quantum AI will provide unprecedented computational power, solving complex forecasting challenges in logistics.

7. Conclusion

Artificial Intelligence transforms real-time demand forecasting for logistics operations, enabling businesses to adapt to rapidly changing market dynamics. By enhancing accuracy, efficiency, and responsiveness, AI addresses critical challenges in logistics management. The incorporation of emerging technologies such as IoT, blockchain, and edge computing further bolsters the potential of AI. While implementation hurdles persist, ongoing advancements in AI technologies and increased adoption signify a promising future for logistics operations. Companies that embrace these innovations will gain a competitive edge in the dynamic global marketplace.

References

1. Ivanov, D., & Dolgui, A. (2020). Digital supply chain: Incorporating artificial intelligence and digital twins into supply chain resilience. *International Journal of Production Research*, 58(22), 6832-6851.
2. Waller, M. A., & Fawcett, S. E. (2013). Data science, predictive analytics, and big data: A revolution that will transform supply chain design and management. *Journal of Business Logistics*, 34(2), 77-84.
3. DHL. (2023). Artificial intelligence in logistics: Use cases and future trends. Retrieved from <https://www.dhl.com>
4. Amazon. (2023). Machine learning applications in supply chain optimization. Retrieved from <https://www.aboutamazon.com>
5. UPS. (2023). The role of AI in logistics innovation. Retrieved from <https://www.ups.com>
6. Choi, T. M., Wallace, S. W., & Wang, Y. (2018). Big data analytics in operations management. *Production and Operations Management*, 27(10), 1868-1881.
7. Kouvelis, P., Chambers, C., & Wang, H. (2006). Supply chain management research and production and operations management: Review, trends, and opportunities. *Production and Operations Management*, 15(3), 449-469.
8. Maersk. (2023). AI applications in freight demand forecasting. Retrieved from <https://www.maersk.com>
9. Ben-Daya, M., Hassini, E., & Bahroun, Z. (2019). Internet of things and supply chain management: A literature review. *International Journal of Production Research*, 57(15-16), 4719-4742.
10. Zhang, A., & Adhitya, A. (2021). AI in perishable inventory management: Real-time analysis and predictions. *Logistics Research*, 14(2), 211-232.

CONCEPTUALIZING A FUTURISTIC KANO MODEL FOR INDUSTRY

6.0

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Abstract:

Since its introduction in 1984, Kano's model of attractive quality (Kano et al., 1984) has grabbed the attention of many marketing practitioners and researchers from a wide range of industries, and has evolved into one of the most popular service quality (SQ) models off the traditional SQ theory mainstream, which is pre-dominated by PZB (Parasuraman, Zeithaml and Berry) (Kumar, S., 2023) and several other authors. Despite the fact that the model originates from the Japanese production sector, it has been successfully implemented and empirically tested in numerous studies across various service settings (e.g. Fuchs and Weiermair, 2004). **Research Objective:** The purpose of this paper is to review the Kano model literature in order to provide marketing researchers with a reference guide, specifically with regards to the context and focus of previous studies, and the different methodological approaches for the assessment of the different Kano factors. Finally, the paper proposes the future direction to be used in Industry 6.0 of Kano model based on the citation networks and research topics.

Keywords: *Kano model, quality, customer satisfaction, Industry 6.0*

Introduction

The Kano model has emerged into one of the most popular quality models nowadays. It has grabbed the attention of many marketing practitioners and researchers who are involved in product or service development projects and who are trying to identify those product/service features that represent key drivers of customer satisfaction and dissatisfaction (Kumar, S., 2023). One of the major assumptions of the Kano model is that certain product/service attributes (quality elements) primarily have an impact on creating satisfaction, while others primarily have an impact on creating dissatisfaction. In the marketing literature, which is not based on the Kano model, this is often referred to as *asymmetric impact on overall customer satisfaction* (OCS). Furthermore, the Kano model assumes that the same product/service attributes, which show an asymmetric impact on OCS, have a varying impact OCS, depending on their current level of performance. This is also referred to as *nonlinear impact on OCS*. Correspondingly, in the model product/service attributes are classified into five different categories of quality elements, depending on their character of impact on OCS (Table 1).

Table 1: Five categories of quality elements

Quality elements	Definition
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Attractive quality elements	<p>When fulfilled, they provide satisfaction, but when not delivered, they do not cause dissatisfaction, because they are not expected by the customer (asymmetric impact on OCS).</p> <p>An increase in fulfilment (performance/positive disconfirmation) results in an over-proportional increase of satisfaction (nonlinear impact on OCS).</p>
One-dimensional quality elements	<p>Quality elements that result in satisfaction when fulfilled and in dissatisfaction when not fulfilled (symmetric impact on OCS). An increase in fulfilment (performance/positive disconfirmation) results in a proportional increase of satisfaction, whereas a decrease in fulfilment results in a proportional decrease of satisfaction (or increase of dissatisfaction).</p>
Must-be quality elements	<p>Quality elements that result in dissatisfaction when not fulfilled (or not delivered at a satisfactory level), because the customer takes them for granted. But when fulfilled (delivered at a satisfactory or higher level) they do not result in satisfaction (asymmetric impact). A decrease in fulfilment results in an over-proportional increase of dissatisfaction (or decrease of satisfaction) (nonlinear impact on OCS).</p>
Indifferent quality elements	Quality elements that result neither in

	satisfaction nor dissatisfaction, whether fulfilled or not.
Reverse quality elements	Quality elements that result in dissatisfaction when fulfilled and in satisfaction when not fulfilled.

Theoretical background

In the late 1950s, American behavioral scientist Frederick Herzberg conducted research on what matters people would be affected and how these matters play a role in people's emotions during their work (Kumar, S., 2023). Through in-depth investigation, he found that matters that make people feel satisfied are all belonging to work content, and matters that make people feel dissatisfied with their work are all work environment or relationship. He calls the former as the incentive factor, the latter is called the health factor (Kumar, S., 2023). He believes that the method of improving people's job satisfaction should be combined with two factors. Not only playing the positive role of incentives, but also developing strategies for health factor at the same time, only in this way can eliminate negative effects and achieve the maximum satisfaction of workers. Herzberg's theory of motivation is also called two-factor theory. Kano extrapolated Herzberg's two-factor theory and developed a model to identify the quality attributes that influence customer satisfaction, and suggested a non-linear relationship between them. The Kano model can be used to identify and classify the quality attributes based on their impact on customer satisfaction into must-be, attractive, one-dimensional, reverse, and indifferent attribute categories (Kumar, S., 2024). The Kano model transforms the specific attributes of products and services into the benefits of customers. Based on the detailed classification of quality factors, it seeks and understands the customer's attitude towards these interests to guide the company's relevant management decisions in quality management, product innovation and service design. The field has received extensive attention and practical application. However, with the application of practice and the development of related theories, more and more scholars have discovered that Kano model itself has some defects, such as the Kano model itself belongs to qualitative analysis methods, classification criteria relatively subjective. In order to enhance the management of the Kano model in the role of support in practice decision, a large number of scholars have carried out related research from different perspectives, but the research directions are numerous and complex, and the research results are in a state of jungle, making it difficult to judge the main line of its development and evolution (Kumar, S., 2024). In order to seek breakthrough points, some scholars have combed and summed up the relevant research of the Kano model: Josip (2007) reviewed the relevant literature of the Kano model in marketing research and application from 1984 to 2006, choosing 46 literature to analyze the Kano's application industry, the measurement methods of quality elements and difference of proposing types of Kano. He thinks future research should focus on the precise quality factor classification method and conduct the empirical research. Löfgren (2009) extracted 33 papers from ABI/Inform, Emerald, and ISI databases for combing and analysis on selecting keywords as Kano, quality dimensions, attractive attribute, and customer satisfaction, then made a suggestion for Kano model including the quality dimensions and the wording of the questionnaire design, quality attribute classification to reflect the customer demand, the specific

classification method of quality attributes and the life cycle type of quality attributes. Rashid (2010) (Kumar, S., 2024) thought Kano model is widely used to analyze customer requirement in product development. By reviewing relevant research literature of Kano is beneficial to discovering further research trends and directions, and proposed that combining the Monte Carlo simulation method can circumvent the problem of missing data in the Kano model questionnaire survey. Shain (2013) (Kumar, S., 2024) integrated and teased the research literature of Kano from 1979 to 2010 and pointed out that only 10% of the literature is to improve the weakness of Kano model. In this part of the research, Shain classified the related literature into three categories based on the classification criteria of the quality attributes. The quality attribute results differ from every type of classification method due to different criteria. Shain also proposed a new Kano model can accurately access customer-related requirements, which divide the quality attributes into: strict essential quality elements, necessary quality elements, incomplete essential quality elements, incomplete charm quality elements, attractive quality elements, and complete attractive quality elements. Luor (2015) teased out relevant literature of Kano model study from 1998 to 2012 in the ISI and Web of Science databases, and focused on the analysis of 94 academic papers (Fifty-two articles were published in SCI and SSCI journals). He found that during these 14 years, the number of relevant researches in the Kano model has been increasing, the research content has been deepening, and the influence of the Kano model has been growing. Research contributors are mainly distributed in Asia, Africa, Americas and Europe. At the same time, he pointed out that there is a lack of systematic literature on the research and application of Kano model, causing the future research direction of Kano model is foggy to grasp. Materla (2017) teased the Kano model literature which applied to the medical and health service industry, publishing in Science Direct, Google Scholar, and Web of Science, setting the search keywords as “Kano model” ”healthcare” ”service quality” during the period from 2002 to 2016. The related literature found that the application of the Kano model in the healthcare industry is still immature. To improve the service quality of the healthcare industry, it is necessary to integrate the Kano model with other methods (such as QFD, SERVQUAL, etc.) (Kumar, S., 2024) to obtain customer demand information effectively. It can be seen that reviewing the relevant research literature of the Kano model is conducive to discovering the development trend and mainstream direction of the theoretical research. However, there is still a lack of research on the Kano model system in China. For this reason, this article combs the relevant research literature of Kano model through the visualization software and carries out comparative analysis, presents the development context of the current Kano model research, search the differences between domestic and foreign research, exploring the research direction that Kano model can expand in the future.

Literature review Industry 6.0

Industry is defined as the production of goods and services through the transformation of raw materials and resources into valuable products. It involves the creation of finished products or services through various stages of production that may include manufacturing, processing, assembly, packaging, and distribution. Industries have played a significant role in the economic growth and development of nations throughout history. They have contributed to the creation of employment opportunities, the development of new technologies, and the improvement of living standards. Over the years, the industrial sector has gone through

numerous changes, and each of these changes has been termed as an "Industry Revolution."

Industry 1.0: The Birth of the Industrial Revolution

Industry 1.0, also known as the first industrial revolution, began during the late 18th century and lasted until the mid-19th century. It was characterized by the widespread use of mechanized production, the utilization of energy sources such as coal and steam-power, and the emergence of the first factories (Kumar, S., 2024). This revolution allowed for mass production to become possible and saw the emergence of the first industrial giants such as the cotton mills and ironworks.

Industry 2.0: The Era of Mass Production

Industry 2.0 was marked by the introduction of electricity and the invention of new technologies such as the assembly line. This revolution led to increased productivity, efficiency, and quality in the production of goods, as well as the emergence of new industries such as the automobile industry.

Industry 3.0: The Rise of Automation

Industry 3.0, also known as the digital revolution, saw the use of electronic technologies to create computer-based systems, robotic production lines, and automated factories (Kumar, S., 2024). This revolution allowed for the emergence of the internet, as well as the development of new technologies such as 3D printing, big data, and cloud computing.

Industry 4.0: Automation and Digitization

Industry 4.0, also known as the fourth industrial revolution, began in the early 21st century and is characterized using automation and data exchange. This revolution has allowed for the development of the internet of things (IoT), artificial intelligence, and machine learning. It has also enabled the use of 3D printing, big data, and cloud computing.

The growth of Industry 4.0 is driven by several factors, including the need to increase productivity and efficiency, the emergence of new technologies such as artificial intelligence and machine learning, and the increasing use of the internet of things (IoT). The use of automation and data exchange allows for faster and more accurate data processing, as well as increased efficiency in the production of goods. Additionally, the development of new technologies such as artificial intelligence and machine learning allow for more efficient decision-making and problem-solving capabilities. Finally, the use of the internet of things (IoT) allows for improved communication and data-sharing between connected devices.

The Evolution of Industry 5.0: Humans and Machines Working Together

Industry 5.0, also known as the Human-Tech partnership, aims to bring together the benefits of Industry 4.0 with the human touch. It emphasizes the importance of human creativity, innovation, and problem-solving skills, while also utilizing advanced technologies such as AI, robotics, and IoT. Industry 5.0 aims to create a work environment where machines and humans work in collaboration, with machines performing repetitive and dangerous tasks while humans focus on more complex and creative work. This approach is expected to lead to increased efficiency, productivity, and job satisfaction, while also promoting social responsibility and sustainability (Kumar, S.).

The need for Industry 5.0 is driven by the need to remain competitive in the global market, as well as the increasing demand for increased efficiency, productivity and quality. Additionally, the use of advanced technologies such as cognitive computing, artificial intelligence and machine learning allow for improved

decision-making and problem-solving capabilities, as well as the potential for new business models (Kumar, S.).

Unique characteristics of Industry 5.0:

Collaboration : Industry 5.0 emphasizes the importance of collaboration between humans and machines. This means that humans and machines will work together to achieve common goals, with each one complementing the other's strengths and weaknesses.

Customization : Industry 5.0 is characterized by the customization of products and services. This means that products will be designed and produced based on the specific needs and requirements of individual customers.

Sustainability : Industry 5.0 places a strong emphasis on sustainability. This means that manufacturing processes will be designed to reduce waste and minimize the impact on the environment.

Decentralization : Industry 5.0 emphasizes decentralization, with a focus on distributed production and manufacturing. This means that production will be closer to the point of consumption, reducing the need for transportation and logistics.

Flexibility : Industry 5.0 emphasizes flexibility, with the ability to quickly adapt to changing market conditions and customer needs. This means that manufacturing processes will be designed to be easily reconfigured and adapted to meet changing demands.

Industry 5.0 is a revolutionary advancement in the industrial sector, with the potential to drastically improve productivity, efficiency, and quality across various industries. This revolution is characterized by using advanced technologies such as artificial intelligence, machine learning, and the internet of things (IoT). The prospects of Industry 5.0 are promising, as the use of advanced technologies and automation will continue to improve productivity and efficiency across various industries. Additionally, the development of new technologies such as blockchain, quantum computing, and advanced robotics will allow for the potential for new business models and the development of new products (Kumar, S.). Overall, Industry 5.0 is focused on creating a more sustainable, collaborative, and customer-centric manufacturing environment that leverages the strengths of both humans and machines.

Industry 6.0: Advancements and Challenges

Industry 6.0(Future Concept), also known as the sixth industrial revolution, is characterized by using advanced technologies such as quantum computing, and nanotechnology over the pre-built Industry 5.0 architecture. These technologies will enable more efficient and effective solutions to solve complex problems, as well as the potential for new business models.

The use of Industry 6.0 technologies will also provide the potential for advanced robotics, and increased safety and security in production and manufacturing processes. Additionally, the use of blockchain technology will enable secure and reliable data-sharing and communication between connected devices, as well as the potential for new economic models. Ultimately, the use of Industry 6.0 will continue to revolutionize the way we produce, manage, and consume goods, services, and information but as with any technological advancement, Industry 6.0 may also have some potential drawbacks or negative impacts.

Addressing the Drawbacks of Industry 6.0: Strategies and Solutions

The advent of Industry 6.0 presents a multitude of challenges that require substantial investment in the

development of technological, social, and economic infrastructures to ensure their smooth integration into society. The development of new technologies and automation is likely to have a profound impact on employment, with many jobs being rendered obsolete or transformed. This may exacerbate existing inequalities in society and result in job displacement for many people, particularly those with lower levels of education or training. Additionally, the widespread adoption of Industry 6.0 technologies may also result in increased environmental degradation, resource depletion, and pollution, which could have serious consequences for future generations. To address these challenges, policymakers must take a proactive approach to ensure that Industry 6.0 is implemented in a socially and environmentally responsible manner. This may involve the implementation of new regulations and policies aimed at mitigating the negative impacts of automation and ensuring that the benefits of technological progress are shared equitably across society.

Potential directions for Industry 6.0 could involve advancements in areas such as:

1. *Biotechnology Integration*: Further integration of biotechnology into industrial processes, including bioengineering, biomanufacturing, and bioinformatics.
2. *Sustainable and Circular Economy Practices*: Greater emphasis on sustainable manufacturing practices, resource efficiency, and circular economy models to minimize waste and environmental impact.
3. *Quantum Computing and Quantum Technologies*: Utilization of quantum computing and other quantum technologies to solve complex optimization problems, enhance data security, and revolutionize computation capabilities.
4. *Advanced Robotics and Autonomous Systems*: Development of more sophisticated robotics and autonomous systems capable of handling complex tasks in diverse industrial settings.
5. *Augmented Reality (AR) and Virtual Reality (VR)*: Expanded use of AR and VR technologies for training, maintenance, design, and collaboration in industrial settings.
6. *Advanced Materials and Nanotechnology*: Continued development of advanced materials and nanotechnology for applications in manufacturing, energy, healthcare, and other industries.
7. *Decentralized Manufacturing and 3D Printing*: Increased adoption of decentralized manufacturing models enabled by advancements in additive manufacturing (3D printing) and distributed production networks.
8. *Cyber-Physical Systems and Digital Twins*: Integration of cyber-physical systems and the widespread adoption of digital twin technologies for real-time monitoring, optimization, and predictive maintenance.

In summary, Industry 6.0 is a futuristic industry that transcends previous revolutions, emphasizing sustainability, intelligence, and holistic integration. Its impact will be profound, shaping the way we work, interact, and live in the coming decades.

Assessment of Kano quality elements

Kano method

Besides their model, Kano et al. (1984) (Kumar, S.) introduced a methodology for assessing the different quality elements. The authors use a questionnaire that consists of functional and dysfunctional questions for each product/service attribute, whereas the obtained data is analysed by means of a special evaluation

table(Kumar, S.). Since its introduction, numerous authors have employed the Kano method, particularly in the field of TQM, where the Kano categorisation of attributes is applied in order to adjust improvement ratios in quality function deployment studies (QFD) (Matzler and Hinterhuber, 1998; Tan et al., 1999; Shen et al., 2000; Tan and Shen, 2000; Tan and Pawitra, 2001; Pawitra and Tan, 2003). Pawitra and Tan (2003) further suggest the integration of SERVQUAL (PZB, 1985) into Kano/QFD studies.

CIT and analysis of complaints

The method that Herzberg (1959) applied to identify the M-H factors of work satisfaction was the *critical incident technique* (CIT). This technique has been widely used by several other researchers who aimed to explore a similar existence of *primarily satisfying* and *primarily dissatisfying attributes* of various products (e.g. Hausknecht, 1988; Maddox, 1981; Swan and Combs, 1976) and services (e.g. Johnston, 1995; Bitner et al., 1990; Smith et al., 1992; Johnston and Silvestro, 1990; Silvestro and Johnston, 1990; Stauss and Hentschel, 1992). Similarly, some authors apply an *analysis of complaints and compliments* for the same purpose (e.g. Cadotte and Turgeon, 1988; Friman and Edvardsson, 2003; Oliver, 1997). Despite the fact that the mentioned studies do not originate in the Kano model, Kano-authors frequently make references to them, and some refer to both CIT and analysis of complaints and compliments as qualitative data-based methods for exploring Kano quality elements (e.g. Matzler et al., 2002).

Regression analysis with dummy variables / Penalty-reward contrast analysis

Several other studies from the customer satisfaction literature, that are not based on the Kano model, are frequently referred to within the Kano model context, but having a different research focus (e.g. Mittal and Baldasare, 1996; Mittal et al., 1998; Anderson and Mittal, 2000; Yi and La, 2003). The major difference of these studies, in contrast to Kano studies, is that it is primarily hypothesised negative performance/disconfirmation to have a stronger impact on OCS than positive performance/disconfirmation, whereas Kano studies hypothesise the existence of certain product/service attributes that have either a stronger or a weaker impact on OCS, in cases of negative or positive performance/disconfirmation. An explanation of the reason why these two research streams “crossed” might be similarities in their research objectives, but more likely it is the specific method of data analysis that is applied in both types of studies, namely, regression analyses with dummy variables. The first group of authors uses it to test the asymmetry of positive and negative performance/disconfirmation, whereas several Kano authors apply it for the assessment of different Kano quality elements. The first ones to introduce this kind of analysis in the Kano literature were Matzler and Sauerwein (2002), who thereby refer to the methodology used in a customer satisfaction study with transport services conducted by Brandt (1987) 15 years earlier. In his study, Brandt applied a multiple regression analysis on attribute satisfaction related to OCS, using two sets of dummy variables, one for extremely high, and the other for extremely low ratings of attribute satisfaction. Brandt identified *penalty-*, *reward-* and *hybrid factors*, analogously to Kano’s *must-be-*, *attractive-* and *linear quality elements* (not referring to Kano). Hence this kind of analysis is frequently termed *penalty-reward contrast analysis* (PRCA) in the Kano literature.

Importance-grid analysis

Another frequently used empirical approach for the assessment of different Kano quality elements is the *importance grid analysis* (IGA), a technique that was first introduced by Vavra (1997). IGA makes use of

explicit and implicit ratings of attribute importance. Explicit importance ratings are obtained directly from the customer (e.g. direct rating-, constant-sum or ranking scales) while implicit importance ratings are derived by regressing attribute performance against a global measure of performance (e.g. OCS). Most authors use standardised beta coefficients from multiple regression analyses (Fuchs, 2002; Matzler and Sauerwein, 2002; Matzler et al., 2002; Peters, 2005; Busacca and Padula, 2005) and partial correlation coefficients (Matzler et al., 2002, 2003; Fuchs and Weiermair, 2003, 2004; Bartikowski and Llosa, 2004), while some use Pearson- (Matzler et al., 2002) or Spearman rank order correlation coefficients (Matzler et al., 2002).¹ Both measures of importance then are depicted along the x- and y-axis of a two-dimensional grid, which is, in the next step, being divided into four quadrants, most frequently by means of grand means of implicit and explicit attribute importance scores. Depending on the positionings of attributes in one of the four quadrants, the identification of different Kano factors is being made. As its methodology resembles the one of the importance-performance analysis (Martilla and James, 1977), some authors refer to IGA as an “advanced version” of IPA (Bartikowski and Llosa (2004). But the objectives of the two analyses are completely different. The purpose of IPA is to directly infer improvement priorities from the attributes’ positionings in the grid, based on the current level of performance, whereas IGA’s primary objective is to identify the different Kano quality elements, for which, in a further step, improvement priorities can be inferred by analysing their current level of performance. Concerning the use of IPA, some use it in combination with IGA (Martensen and Gronholdt, 2001) or other Kano assessment methods (Yang, 2003), whereas several Kano authors pinpoint the problem of potentially misleading implications from IPA, as the technique assumes symmetric and linear relationships between attribute level performance and OCS (Matzler and Sauerwein, 2002; Matzler et al., 2003, 2004; Fuchs and Weiermair, 2003; Eskildsen and Kristensen, 2006).

Comparison of empirical assessment methods

Summing up, besides the Kano method (KM), both PRCA and IGA represent the most commonly employed empirical assessment methods in the Kano literature. Nevertheless, convergent validity between the methods has not yet been confirmed. Furthermore, authors who have tested the convergent validity between IGA and PRCA frequently criticise the use of IGA and suggest the use of PRCA (Matzler and Sauerwein, 2002; Fuchs and Weiermair, 2003; Busacca and Padula, 2005). On the one hand, they argue against IGA because of the lack of a stringent theory that would explain why different Kano factors could be assessed by comparing implicit and explicit importance scores. On the other hand, they argue that attribute importance (implicit importance) should be regarded as a function of attribute performance. Thus the use of static and average implicit attribute importance measures, in order to assess different Kano quality elements, would mean that one of the major assumptions of the Kano model is being neglected, i.e., the asymmetric and nonlinear relationship between attribute level performance and OCS. Within this regard, PRCA seems to be a more appropriate method, as the impact of attribute-level performance on OCS is assessed for extremely negative and for extremely positive ratings. When analysing studies that employ IGA and PRCA, one can also notice that PRCA is usually applied to smaller numbers of product/service attributes compared to IGA. The reason is to be sought in the problem of multicollinearity, which is two-fold in PRCA. On the one hand, two regression coefficients are calculated for each attribute. On the other hand, the use of large numbers of attributes

exponentiates the risk of inter correlations among predictor variables, which can cause severe difficulties in the interpretation of PRCA results. Hence some authors employ a factor analysis before applying PRCA to the data (Matzler et al., 2004a; Fuller et al., 2006). With regards to the different types of regression analyses that are used in order to assess the different Kano quality elements, almost all authors use multiple regression with dummy variables, only one study is reported that employs a *bivariate* regression with dummy variables (Ting and Chen, 2002), and one that uses a *Shapely value* regression analysis, which is frequently applied in game theory studies (Conklin et al., 2004).

Literature overview of Kano Model

An overview of the reviewed literature on the Kano model is given in Table 2, encompassing authors (Column 1), industry (object) of research (Column 2), the employed assessment method of Kano quality elements (Column 3) and information on whether the corresponding authors define the Kano model as a model of quality (Q), satisfaction (S), customer requirements (CR) or customer needs (CN) (Column 4). In total 46 articles/books were analysed.

Table 2: Research studies and conceptual papers on the Kano model

Author	Industry	Assessment of Kano quality elements	Model type
Kano et. al. (1984)	technical products	Kano method (KM)	Q
Brandt (1987)	transport services	Penalty-reward-contrast analysis (PRCA)	-
Schvaneveldt et al. (1991)	mass market services	KM	Q
Berger et al. (CQM) (1993)	technical products	KM	CR
Fong (1996)	conceptual paper	Suggests the use of KM in combination with a self-stated importance questionnaire.	CR
Lee and Newcomb (1996)	science research program	KM	CR
Matzler et al. (1996)	sports products	KM	CS
Chikara and Takahashi (1997)	information system	KM	n.a.
Vavra (1997)	conceptual paper (book)	Importance grid analysis (IGA)	Q
Huiskenon and Pirttila (1998)	customer service	functional/dysfunctional questions (KM)	Q
Matzler and	sports products	KM	CS

Hinterhuber (1998)			
Tan et al. (1999)	IT (web page)	KM	CS
Shen et al. (2000)	conceptual paper	KM	n.a.
Tan and Shen (2000)	IT (web page)	KM	n.a.
Martensen and Gronholdt (2001)	employee satisfaction	IGA	Q
Sa and Saraiva (2001)	services (Kindergarten)	KM	CR
Tan and Pawitra (2001)	tourist destination	KM	n.a.
Erto and Vanacore (2002)	hotel service quality	not clear; use a probabilistic approach to measure SQ	Q
Fuchs (2002)	tourist destination	IGA	CS
Matzler and Sauerwein (2002)	internal IT department	IGA; PRCA	CS
Matzler et al. (2002)	internal IT department	IGA (test the convergent validity of IGA with 4 different implicit importance measures)	n.a.
Ting and Chen (2002)	services (hypermarket)	regression analysis with dummy variables for each attribute	Q
Fuchs and Weiermair (2003)	tourist destination	IGA; PRCA	CS
Yang (2005)	technical products	KM	Q
Eskildsen and Kristensen (2006)	employee satisfaction	regression analysis between attribute performance and attribute importance	CS
Fuller et al. (2006)	tourist destination	PRCA	CS
Jonsson Kvist and Klefsjo (2006)	tourism	n.a.	CN
Lilja and Wiklund	conceptual paper	-	Q

(2006)			
Riviere et al. (2006)	food products	two-sequence consumer test which considers the Kano model	CS

Need of Industry 6.0

In the current landscape shaped by the COVID-19 pandemic, the global challenge of meeting customer demands for goods, services, and essential items has become increasingly complex. This crisis has compelled manufacturers, organizations, and service providers within the automotive industry to reassess their production strategies, service delivery mechanisms, customer engagement approaches, supply chain networks, circular economy practices, product integration, green initiatives, and digitalization efforts. Throughout the history of industrial revolutions, industries have demonstrated their adaptability and capacity for significant transformation. Enterprises are now poised to embrace this ongoing evolution towards climate neutrality and enhanced digital governance in a dynamic and predictable environment. This revolution is set to establish a lasting connection between the world's response to climate change and environmental crises, prompting proactive measures to mitigate global threats in the future.

Result & Findings: Kano Model Research Future Outlook

This paper makes a prospect for the future development of the Kano model on the basis of the statistical analysis of the literature on the Kano model. Study on integration and application of Kano model and other methods. The Kano model is essentially a research method for obtaining and classifying relevant elements of customer need. The acquisition and effective classification of customer need are the basis for companies to design products and services, improve product and service quality. To improve Kano decision support role, it is necessary to carry out the integration of Kano model and other methods. In addition, from the review of the literature in this article, this direction has achieved certain research results and is also a major research trend in the future. The current literature mainly involves the integration of QFD, SERVQUAL model, IPA analysis, and fuzzy theory, which greatly expands the practical application of the Kano model. The combination of other methods, such as TRIZ (innovation problem invention theory), FMEA, Cluster Analysis Method, and Multivariate Adjustment and Regression Analysis carries out effective acquisition of customer demand elements, customization and refined classification, charm demand element mining and the relationship between Kano model customer satisfaction and product performance relationship function fitting will undoubtedly have a broad prospect for perfecting the Kano model related theory and further improving its decision support role. Study on improving the accuracy of the classification of quality elements in Kano model. The Kano model provides a set of structured methods for detecting non-linear relationships between customer satisfaction and product performance, and has important guiding value for management practices.

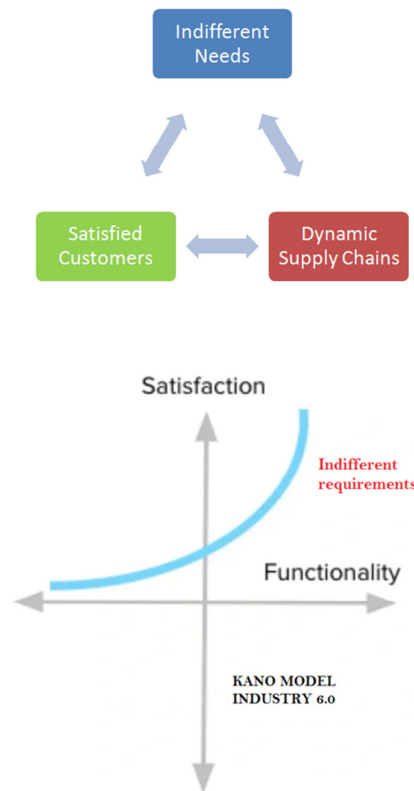


Figure 1 :- Conceptual futuristic Kano Model for Industry 6.0

Conclusion

However, whether the Kano model questionnaire, the Kano model classification table, or the Kano model final classification results table will have some defects in the process of application, such as the questionnaire is too formatted and emphasizes a single answer; Different question wording affects the respondents; The Kano model classification table is too simple and indifferent quality elements are too many; The final classification results table emphasizes determining the final classification according to the frequency and so on. Only above problems are solved, can the quality elements achieve refined classification. Therefore, it is necessary to carry out relevant research from multiple perspectives combined with multidisciplinary theories of psychology, statistics, design and so on.

Managerial & future Implications: Study on the dynamic evolution of the life cycle of quality elements in Kano model. As Dr. Noriaki (2001) said, the quality factor classification result of Kano model will change dynamically, and it would have a life cycle characteristics, but it needs to combine different scenarios to

conduct research. In addition, Martin (2008) also proposed that life cycle-related research on the quality elements of the Kano model is an interesting issue for charisma quality theory research. Scholars at home and abroad combined with different industry situations and enterprise characteristics, and discussed the dynamic evolution of the life cycle of quality elements, and proposed two life cycle modes: successful quality attribute life cycle model (I-A-O-M) and stability life cycle model (I-O-I). Therefore, in the future, we can consider extending the search scope of the database, language constraints of loose documents, and further analyze the evolution path of Kano from different perspectives to more accurately grasp the research dynamics of the Kano model.

Reference

1. Fuchs, M. and Weiermair, K. (2004), "Destination benchmarking: an indicator-system's potential for exploring guest satisfaction", *Journal of Travel Research*, Vol. 42, pp. 212 – 225.
2. Kano, N., Seraku, N., Takahashi, F. and Tsuji, S. (1984), "Attractive quality and must-be quality", *Hinshitsu, The Journal of the Japanese Society for Quality Control*, April, pp. 39 – 48.
3. Kumar, S. (2023). Red Ocean Strategy: A Literature Review. *International Journal of Economics & Business Administration (IJEBA)*, 11(4), 91-100.
4. Kumar, S. (2023). Customer Innovativeness An Effusive Perspective To Brand Extension. *Business Excellence and Management*, 13(4), 61-67.
5. Kumar, S. (2023). The The Red Queen Effect and How to Evade the Red Queen Effect by using Generative AI: Preparing Companies for Industry 5.0. *DME Journal of Management*, 4(02), 44-53.
6. Kumar, S. (2023). A Study on Role of Women Entrepreneurs in G20 Countries. *DME Journal of Management*, 4(02), 18-37.
7. Kumar, S. (2024). Great Suppliers Theory–(An Offer based Market Segmentation Framework). *Saudi J Bus Manag Stud*, 9(3).
8. Kumar, S. (2024). Empowering Women Entrepreneurs: A Comprehensive Analysis of their Impact in G20 Economies. *Apex Journal of Business and Management*, 2(2), 75-96.
9. Kumar, S. (2024). Growing Use of Next-Door Faces and Transformation to The Digital Age: A Study on Arrival of New Practices In the Indian Advertising Industry. *NOLEGEIN-Journal of Advertising and Brand Management*, 7(1), 11-20.
10. Kumar, S. PROPOSITION OF STRATEGIES FOR BUSINESS MODELS THAT WORK IN SPORTS LEAGUE BUSINESS IN INDIA AND OTHER COUNTRIES. *SAMIKHIYA A Multidisciplinary Research Journal ISSN: 2583-827X (Online)*, Vol. 3 Issue 01, June 2024, 102.
11. Kumar, S. (2024). Story of Top Tea Companies and Top Chai Startups in India: What Makes Them to Keep it Big. *Optimization: Journal of Research in Management*, 16(1).
12. Kumar, S. Strategic Decision Making and Strategic Decision Practices in Intelligent Organizations: A Review.

13. Kumar, S. (2024). Advancing Sustainability: A Conceptual Review for 21st Century Corporates. *International Journal of Economics & Business Administration (IJEBA)*, 12(2), 176-211.
14. Kumar, S. Changing Face of Authority Figures and Influencers in the New Age: A Study of New Emerging Practices in the Indian Advertising Industry.
15. Kumar, S. 44. A Case Study on Gujarat's New Generations Overcoming the Challenges of Third Generation Company.
16. Kumar, S. (2024). Breaking the Glass Ceiling Effect Chai Women Entrepreneurs of India. *Journal of Entrepreneurship*, 13(04).
17. Kumar, S. A LOOK INSIDE THE SHOPPING BAGS OF THE NEW INDIAN CONSUMERS: WHERE IS THE FUTURE INDIAN CONSUMER HEADED?. *GWALIOR MANAGEMENT ACADEMY*, 22.
18. Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1985), "A conceptual model of service quality and implications for future research", *Journal of Marketing*, Vol. 49, fall, pp. 41-50.
19. Löfgren, M. and Witell, L. (2009) Two Decades of Using Kano's Theory of Attractive Quality: A Literature Review. *Quality Management Journal* , 54, 37-38.
20. Rashid, M.M. (2010) A Review of State-of-Art on Kano Model for Research Direction. *International Journal of Engineering Science & Technology*, 2.
21. Materla, T., Cudney, E.A. and Antony, J. (2017) The Application of Kano Model in the Healthcare Industry: A Systematic Literature Review. *Total Quality Management & Business Excellence* . <https://doi.org/10.1080/14783363.2017.1328980>
22. Matzler, K. and Hinterhuber, H.H. (1998), "How to make product development projects more successful by integrating Kano's model of customer satisfaction into quality function deployment", *Technovation*, Vol. 18, No. 1, pp. 25 – 38.
23. Tan, K.C. and Pawitra, T.A. (2001), "Integrating SERVQUAL and Kano's model into QFD for service excellence development", *Managing Service Quality*, Vol. 11, No. 6, pp. 418 – 430.
24. Shen, X.X., Tan, K.C. and Xie, M. (2000), "An integrated approach to innovative product development using Kano's model and QFD", *European Journal of Innovation Management*, Vol. 3, No. 2, pp. 91 – 99.
25. Herzberg, F., Mausner, B. and Snyderman, B. (1959), *The motivation to work*, Wiley, New York, NY.
26. Silvestro, R. and Johnston, R. (1990), "The determinants of service quality: hygiene and enhancing factors", in: *Quality in services II, selected papers*, Warwick Business School, England, pp. 193 – 210.
27. Swan, J.E. and Combs, L.J. (1976.), "Product performance and consumer satisfaction: a new concept", *Journal of Marketing*, Vol. 40, April, pp. 25 – 33.
28. Oliver, R.L. (1997), *Satisfaction: a behavioral perspective on the consumer*, Irwin/McGraw-Hill Companies, New York, NY.

29. Friman, M. and Edvardsson, B. (2003), “A content analysis of complaints and compliments”, *Managing Service Quality*, Vol. 13, No. 1, pp. 20 – 26.
30. Brandt, R.D. (1987), “A procedure for identifying value-enhancing service components using customer satisfaction survey data“, in: *Add Value to Your Service*, Chicago, AMA, pp. 61 – 65.
31. Mittal, V., Ross, W.T. and Baldasare, P.M. (1998), “The asymmetric impact of negative and positive attribute level performance on overall satisfaction and repurchase intentions”, *Journal of Marketing*, Vol. 62, January, pp. 33 – 47.
32. Vavra, T.G. (1997), *Improving your measurement of customer satisfaction: a guide to creating, conducting, analyzing and reporting customer satisfaction measurement program*, ASQC Quality Press, Milwaukee, WI.
33. Yi, Y. and La, S. (2003), “The moderating role of confidence in expectations and the asymmetric influence of disconfirmation on customer satisfaction”, *Service Industries Journal*, Vol. 23, No. 5, pp. 20 – 47.
34. Yang, C.C. (2005), “The refined Kano's model and its application”, *Total Quality Management and Business Excellence*, Vol. 16, No. 10, pp. 1127 – 1137.
35. Conklin, M., Powaga, K. and Lipovetsky, S. (2004), “Customer satisfaction analysis: identification of key drivers”, *European Journal of Operational Research*, Vol. 154, No. 3, pp. 819 – 827.
36. Ting, S.C. and Chen, C.N. (2002), “The asymmetrical and nonlinear effects of store quality attributes on customer satisfaction”, *Total Quality Management*, Vol. 13 No. 4, pp. 547 – 69.

UNDERSTANDING THE ROLES OF EMPLOYEES IN CURBING THE IMPEDIMENTS

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Abstract

Within all types of organizations, within the course of implementation of job duties, achievement of organizational goals and carrying out the overall functioning of the organizations in an effective manner, there are occurrence of impediments. The impediments may take place in a major as well as in a minor form. These need to be prevented from giving rise to problems within the course of implementation of job duties. The employees need to identify the causes of the occurrence of impediments. They need to be well-versed in terms of methods and procedures to curb the impediments. Furthermore, they need to be prevented from assuming a major form. The employees put into operation this task on one's own as well as through obtaining support and assistance from others. The other members are, supervisors, colleagues and employers. All the members need to work in collaboration and integration with each other in curbing the impediments. This task may be time consuming or may require less amount of time. But the implementation of appropriate strategies and methods will facilitate this job duty in a well-organized manner. There are number of factors in terms of impediments take place, i.e. job duties, responsibilities, methods, strategies, procedures, infrastructure, amenities, facilities, other individuals and the overall environmental conditions. The impediments need to be alleviated, when the individuals are wholeheartedly determined towards generation of desired outcomes. Therefore, it can be stated, the employees have an important role to play in curbing impediments. The main concepts that are taken into account in this research paper are, roles of employees in curbing the impediments, factors regarding which impediments occur within employment settings and curbing impediments is advantageous to the employees and organizations.

Keywords: *Abilities, Employees, Impediments, Job Duties, Methods, Organizations, Skills*

Employees are regarded as the assets of the organizations. They are required to make use of their educational qualifications, competencies and abilities in the implementation of job duties, achievement of organizational goals and in leading to overall functioning of the organizations in an efficient manner. It is comprehensively understood within the course of putting into operation job duties there are occurrence of impediments. These may take place in a major or in a minor form. Hence, the employees need to play an important role in curbing the impediments. The employees need to make use of their skills, abilities and aptitude to curb the impediments (The Employee's Role, 2021). The employees need to communicate and participate in various tasks and activities. They need to interact with colleagues and supervisors. In this

manner, they will be able to contribute significantly in augmenting their knowledge and understanding. Furthermore, impediments will be curbed and prevented from assuming a major form. Therefore, participation and communication of the employees is regarded as indispensable in curbing the impediments.

The employees need to conduct research on regular basis in terms of their job duties and responsibilities. This needs to take place throughout their jobs. The main aim of conducting research is to augment information in terms of methods, procedures and strategies. These need to be put into operation in a well-ordered and satisfactory manner to do well in one's job duties. Furthermore, the desired outcomes will be generated. The research is conducted through making use of various sources, i.e. books, articles, reports, projects, other reading materials and internet (What is Employee Role? 2021). The employees need to put emphasis on honing of problem-solving skills. These skills will facilitate in providing solutions to various types of problems. Furthermore, these need to be prevented from giving rise to impediments. These skills can be up-graded on one's own as well as through obtaining support from supervisors or colleagues. The implementation of these skills would prove to be beneficial to the employees as well as the organization as a whole. Therefore, conducting research on regular basis and honing of problem-solving skills are regarded as significant roles of employees in curbing the impediments.

The employees are required to experience number of difficulties and challenges within the course of putting to operation job duties and responsibilities. But they need to form positive viewpoints in terms of various factors. As a consequence, they will wholeheartedly be determined towards the implementation of job duties and achievement of organizational goals. When the individuals are required to work with demanding supervisors, in such cases, formation of positive viewpoints will prove to be beneficial to them. The employees should develop motivation towards the implementation of job duties. Within employment settings, they need to form the perspective that their jobs are facilitating in generation of income, sustaining their living conditions in an effective manner and enhancing their career prospects. The supervisors and employers contribute in development of motivation among employees by giving of rewards, incentives, increase in pay, promotional opportunities, paid leaves, paid vacations and so forth. When the employees are overwhelmed by any types of impediments, the formation of positive viewpoints and development of motivation will prove to be favourable to them on a comprehensive basis. Therefore, it can be stated, formation of positive viewpoints in terms of various factors and development of motivation are vital roles of employees in curbing the impediments.

Roles of Employees in curbing the Impediments

It is comprehensively understood that within the course of putting into operation job duties and responsibilities, impediments take place in terms of number of factors, i.e. principles, policies, laws, methods, strategies, approaches, procedures, materials, technologies, infrastructure, amenities, facilities and the overall working environmental conditions. One of the important aspects that needs to be taken into account is, the employees need to feel comfortable within the workplace. As a consequence, they will be able to concentrate on their job duties in a well-organized and satisfactory manner (Role of Employees in Organization Culture, 2021). All the members of the organization, irrespective of their job positions in the hierarchy need to work in co-ordination with each other to curb the impediments, which have had

unfavourable effects on the organization as a whole. Whereas, the employees are required to focus on the curbing of the impediments, which are giving rise to detrimental effects on the implementation of their job duties. The employees need to inculcate the traits of morality and ethics in putting into practice their roles. Roles of employees in curbing the impediments are stated as follows:

Communication and Participation of the Employees

The employees are required to play an important role in curbing the impediments. They employees need to make use of their knowledge, abilities and aptitude to curb the impediments. The employees need to communicate and participate in various tasks and activities. They need to interact with colleagues and supervisors. In this manner, they will be able to contribute significantly in augmenting their knowledge and understanding. The implementation of effective communication processes will enable the employees to work in co-ordination with others to curb the impediments. Furthermore, when they will participate in other tasks and activities, particularly which are work-related, impediments will be curbed and prevented from assuming a major form. It is the job duty of the supervisors and employers to encourage the participation of the employees in various tasks, which would enable them to not only curb impediments, but also enhance their career prospects. Hence, communication and participation of the employees is a task, which renders a significant contribution in curbing the impediments. Therefore, communication and participation of the employees is regarded as one of the indispensable roles of employees in curbing the impediments.

Conducting Research on Regular Basis

The employees need to conduct research on regular basis in terms of aspects related to their job duties and responsibilities. This task needs to be put into operation throughout their jobs. The research is conducted through making use of various sources, i.e. books, articles, reports, projects, other reading materials and internet. On the internet, the individuals are able to find information in terms of all subjects, concepts and factors. Hence, it is regarded as the prominent source in augmenting information in terms of ways to curb impediments. The main aim of conducting research is to augment information in terms of methods, procedures and strategies. These need to be put into operation in a well-ordered and satisfactory manner to do well in one's job duties. Furthermore, the desired outcomes will be generated and employees will contribute in achieving organizational goals. The research will facilitate the employees in curbing the impediments which take place within the course of implementation of job duties and achievement of goals. Therefore, conducting research on regular basis is one of the important roles of employees in curbing the impediments.

Honing of Problem-Solving Skills

Problems are regarded as an integral part of the professional lives of the individuals. The various aspects in terms of which they take place are, job duties, responsibilities, principles, policies, laws, methods, strategies, approaches, procedures, materials, technologies, infrastructure, amenities, facilities and the overall working environmental conditions. The employees need to put emphasis on honing of problem-solving skills. These skills will facilitate in providing solutions to various types of problems. Furthermore, these need to be

prevented from giving rise to impediments. These skills can be up-graded on one's own as well as through obtaining support from supervisors or colleagues. The employees need to put into practice effective communication processes with their supervisors and colleagues. In this manner, they will be able to augment their knowledge and understanding in terms of various factors. Furthermore, problem-solving skills will facilitate in providing meaningful solutions to various types of problems and impediments. The implementation of these skills would prove to be advantageous to the employees as well as the organization as a whole. Therefore, honing of problem-solving skills is a significant role of employees in curbing the impediments.

Formation of Positive Viewpoints in terms of various Factors

The employees are required to experience number of difficulties and challenges within the course of putting to operation job duties and responsibilities. These are normally in terms of methods and procedures to be used. But employees need to form positive viewpoints in terms of various factors. When the job duties are cumbersome, the formation of positive viewpoints will enable the individuals to do well in their jobs and achieve the desired goals. As a consequence of formation of positive viewpoints, employees will be wholeheartedly determined towards the implementation of tasks and achievement of organizational goals. When the individuals are required to work with demanding supervisors, in such cases, formation of positive viewpoints will prove to be beneficial to them. The research studies have indicated, that when supervisors convey to the employees that they have limited time to complete the job duties, they usually are focusing upon implementation of tasks, which prove to be advantageous. Therefore, formation of positive viewpoints in terms of various factors is a crucial role of employees in curbing the impediments.

Development of Motivation

The employees should develop motivation towards the implementation of job duties. The mind-sets of the employees will get stimulated and they will develop enthusiasm towards their tasks and activities. Throughout the jobs of the employees, they need to put emphasis on this factor. Within employment settings, they need to form the perspective that their jobs are facilitating in generation of income, sustaining their living conditions in an effective manner and enhancing their career prospects. The supervisors and employers contribute in development of motivation among employees by giving of rewards, incentives, increase in pay, promotional opportunities, paid leaves, paid vacations and so forth. When the employees are overwhelmed by any types of impediments, the formation of constructive viewpoints and development of motivation will prove to be favourable to them on a comprehensive basis. As a consequence, there will be a decline in the rate of absenteeism. Furthermore, work pressure will also not enable them to experience any types of impediments. As they will be wholeheartedly committed towards their job duties. Therefore, development of motivation is a vital role of employees in curbing the impediments.

Implementing the Traits of Diligence, Resourcefulness and Conscientiousness

Throughout the job duties of the employees, they need to implement the traits of diligence, resourcefulness and conscientiousness. The reinforcement of these traits will prove to be beneficial to the employees on a

comprehensive basis. They will be able to contribute efficaciously in doing well in their jobs, achieving organizational goals, meeting the expectations of their employers, providing solutions to various types of problems, curbing impediments and leading to up-gradation of the overall structure of the organizations. The methods and strategies can be put into operation in an appropriate manner, when the employees pay adequate attention towards reinforcement of these traits. The employees are aware of the fact that if they need to generate the desired outcomes, they need to put emphasis on reinforcement of these traits. Putting into operation all job duties, such as, working on assignments and projects, preparation of reports, getting engaged in production and manufacturing processes and so forth, these traits would prove to be favourable and worthwhile. Therefore, implementing the traits of diligence, resourcefulness and conscientiousness is a meaningful role of employees in curbing the impediments.

Implementing Time Management Skills

The employees are overwhelmed by number of job duties and responsibilities. They need to take out sufficient amount of time for all of them. In the implementation of these skills, priorities are assigned. The tasks, which are more important are carried out first, whereas, the tasks, which are regarded as less important are given second preference. The individuals are able to avoid procrastination (Policy, Data, Oversight, n.d.). When the employees are overwhelmed by any types of impediments, the implementation of time management skills will prove to be favourable to them on a comprehensive basis. As a consequence, they will not only be able to take out sufficient amount of time for all the job duties, but they will be able to curb impediments. When the employees have sufficient amount of time available for all tasks, they need to ensure, they concentrate on them in a well-organized and disciplined manner. The employees normally feel satisfied, when they are able to curb impediments by devoting sufficient amount of time towards them. Therefore, implementing time management skills is a suitable role of employees in curbing the impediments.

Utilizing Modern, Scientific and Innovative Methods

In the present existence, with advancements taking place and with the advent of modernization and globalization, it is necessary to utilize modern, scientific and innovative methods. The various types of these methods are, utilization of maps, graphs, charts, images, pictures, models, designs, structures, and so forth. In all types of organizations, i.e. production, manufacturing, services, educational institutions, financial institutions and so forth, these methods are used. The utilization of these methods would prove to be favourable to all the members as well as the overall structure of the organizations. These methods need to be put into operation within the course of implementation of job duties. As a consequence of putting them into operation, the job duties can be carried out in an efficient manner. Furthermore, the employees are able to curb impediments. In some cases, the jobs can be completed in less amount of time, whereas, in other cases, they may be completed in more time. In the training and development programs, the employees are imparted information in terms of utilization of these methods. Therefore, utilizing modern, scientific and innovative methods is a noteworthy role of employees in curbing the impediments.

Forming Cordial and Sociable Terms and Relationships with Others

Throughout the job duties of the employees, they need to form cordial and sociable terms and relationships with others. The other individuals are, employers, supervisors and colleagues. The job duties can be carried out on an individual basis as well as in groups. Even when they are putting into operation job duties on an individual basis, still they are required to communicate with others to generate ideas and viewpoints. Formation of cordial and sociable terms and relationships with others proves to be beneficial to the employees to a major extent. The major benefits experienced are, jobs are done well; employees meet the expectations of their employers; methods are put into practice in an adequate manner; employees develop motivation towards the implementation of job duties; knowledge, skills and abilities are augmented; modern, scientific and innovative methods are utilized; employees incur the feeling of job satisfaction; organizational goals are achieved; solutions are provided to various types of problems; impediments are curbed and overall structure of the organizations are up-graded. Therefore, forming cordial and sociable terms and relationships with others is a role of employees in curbing the impediments, which needs to be reinforced throughout the job duties of the employees.

Possessing the Abilities to Work under Stress

Within the course of implementation of job duties there are occurrence of impediments. The employees need to make use of their knowledge, skills, and abilities to curb the impediments. They need to be well-aware in terms of their job duties. When the employees are overwhelmed by any types of impediments, the implementation of knowledge and skills will prove to be approving to them on a comprehensive basis. As a consequence, they will render a significant contribution in doing well in their job duties and curbing impediments. The employees are aware of the fact that if they need to do well in their tasks and generate the desired outcomes, they need to put emphasis on reinforcement of this aspect. Putting into operation all types of job duties, such as, working on assignments and projects, preparation of reports, getting engaged in production and manufacturing of goods and so forth, this aspect would prove to be constructive and useful. Therefore, possessing the abilities to work under stress is a role of employees in curbing the impediments, which has rendered an important contribution in incurring the feeling of job satisfaction and in retaining the jobs.

Factors regarding which Impediments occur within Employment Settings

In all types of organizations, i.e. production, manufacturing, services, educational institutions, financial institutions and so forth, within the course of implementation of job duties there are occurrence of various types of impediments. The employees need to make use of their educational qualifications, skills, and capabilities to curb the impediments (Employees – Your Rights and Responsibilities, n.d.). The occurrence of impediments are regarded as an integral part of the professional lives of the individuals. All the members, irrespective of their job positions in the hierarchy need to identify the causes of impediments. The employees need to put emphasis on honing of skills and abilities on regular basis. These can be honed on their own as well as through obtaining support from others. In the training and development programs, the trainers make provision of information, which would render an important contribution in augmenting knowledge, skills and abilities. Factors regarding which impediments occur within employment settings are,

job duties and responsibilities; principles, policies and laws; methods, strategies and procedures; materials and technologies; infrastructure, amenities and facilities and the overall working environmental conditions. These are stated as follows:

Job Duties and Responsibilities

Within the course of implementation of job duties and responsibilities, there are occurrence of impediments. These are related to methods and approaches, stipulated time frame, materials and technologies and so forth. When the individuals are to work with other individuals and they are not available on time, in other words, there is lack of effective communication processes with them, in such cases as well, there are occurrence of impediments. The employees need to make use of their knowledge, skills, and abilities to curb the impediments. They need to be well-aware in terms of their job duties and responsibilities. When the employees are overwhelmed by any types of impediments, the implementation of knowledge and skills will prove to be favourable to them on a comprehensive basis. As a consequence, they will render a significant contribution in doing well in their job duties and curbing impediments. Therefore, job duties and responsibilities are important factors regarding which impediments occur within employment settings.

Principles, Policies and Laws

The overall functioning of the organizations takes place in accordance to the principles, policies and laws. The individuals in leadership positions are vested with the authority and responsibility of formulating principles, policies and laws. It needs to be ensured, these prove to be favourable to the employees as well as the organization as a whole. These are formulated in terms of job duties, methods, strategies, procedures, sexual harassment, anti-discriminatory policies; equal rights and opportunities; and in leading to functioning of the overall working environmental conditions in an appropriate manner. When these are not formulated appropriately, there are occurrence of impediments. Hence, it is of utmost significance for all the members to follow the principles, policies and laws throughout their jobs. Therefore, it can be stated, principles, policies and laws are significant factors regarding which impediments occur within employment settings.

Methods, Strategies and Procedures

The various types of impediments do take place within the course of utilization of methods, strategies and procedures. The utilization of methods, strategies and procedures need to prove to be favourable to all the members as well as the overall structure of the organizations. These methods need to be put into operation within the course of implementation of job duties. As a consequence of putting them into operation, the job duties can be carried out in an efficient manner. Furthermore, the employees are able to generate awareness in terms of the measures to curb the impediments. When the methods, strategies and procedures are put into practice in a well-organized manner, the employees will contribute significantly in doing well in their job duties and in curbing impediments. Therefore, it is well-understood, methods, strategies and procedures are indispensable factors regarding which impediments occur within employment settings.

Materials and Technologies

The materials and technologies are the key factors in doing well in one's job duties and in achieving the desired goals. The various types of impediments do take place within the course of utilization of materials and technologies. These are, difficulties in utilization of materials, lack of skills, breakdown of technologies and so forth. All the members of the organization need to be informative in terms of methods of making use of them in an efficient manner. The utilization of technologies would facilitate the implementation of job duties in an efficient manner. Furthermore, the employees are required to generate awareness in terms of the measures to manage them. When the materials and technologies are put into practice in a well-organized manner, the employees will contribute significantly in doing well in their job duties, generating the desired outcomes, achieving organizational goals and in curbing impediments. Therefore, materials and technologies are notable factors regarding which impediments occur within employment settings.

Infrastructure, Amenities and Facilities

Infrastructure, amenities and facilities are related to power supplies, water supplies, restrooms, clean drinking water, availability of heating and cooling equipment in accordance to the weather conditions, elevators, ramps, parking space and so forth. The employees need to feel comfortable within the workplace. As a consequence, they will be able to concentrate on their job duties in a well-ordered and adequate manner. The various types of impediments do take place within the course of making available infrastructure, amenities and facilities. These are, lack of financial resources, unavailability of personnel to manage them, difficulties in utilization of infrastructure, amenities and facilities, lack of knowledge and competencies and so forth. All the members of the organization, irrespective of their job positions in the hierarchy need to be informative in terms of methods of making use of and managing them in an efficient manner. Therefore, infrastructure, amenities and facilities are eminent factors regarding which impediments occur within employment settings.

The overall Working Environmental Conditions

The overall working environmental conditions need to be amiable in order to do well in one's jobs, achieve organizational goals and carry out the overall functioning of the organization in a disciplined manner. The various types of impediments that take place in terms of the working environmental conditions are related to organization of training and development programs; organization of workshops and seminars; recruitment and selection of employees; utilization of pioneering methods; putting into operation effective communication processes; job duties and responsibilities; principles, policies and laws; methods, strategies and procedures; materials and technologies; infrastructure, amenities and facilities and achievement of organizational goals. The members need to identify the causes of impediments and implement measures to curb them. Furthermore, it needs to be ensured, impediments do not impose detrimental effects in leading to up-gradation of the overall structure of the organizations. Therefore, the overall working environmental conditions are well-known factors regarding which impediments occur within employment settings.

Curbing Impediments is Advantageous to the Employees and Organizations

The acquisition of employment opportunities is regarded as the primary job duty of the individuals,

irrespective of their communities, categories and backgrounds. The individuals acquire education and augment their knowledge, skills and abilities so they are able to attain employment opportunities. Within the course of acquisition of employment opportunities, there are occurrence of impediments. The individuals put in efforts to their best abilities to curb them. Within the course of implementation of job duties there are occurrence of impediments. The employees need to make use of their educational qualifications, skills, and abilities to curb the impediments. When impediments are curbed, employees and organizations benefit. The various benefits are, leading to an increase in productivity and profitability; satisfying customer requirements; augmenting knowledge, skills and abilities; utilizing modern, scientific and innovative methods; enhancing infrastructure, amenities and facilities; promoting well-being and goodwill; providing solutions to the problems in an appropriate manner; depicting creativity in projects and assignments; incurring the feelings of pleasure and contentment and forming sociable and pleasant terms and relationships with others. Therefore, curbing impediments is advantageous to the employees and organizations is understood by all the members on a comprehensive basis.

All the members of the organization need to be informative in terms of methods of curbing impediments throughout their jobs. Whether the job duties are complicated or they are manageable, impediments do take place within the course of their implementation. The employees should not feel overwhelmed by impediments. But they should have faith in themselves and augment their confidence levels. The employees need to make use of their knowledge, skills, and abilities to curb the impediments. Within all types of organizations, one of the important aspects is, employees need to be well-aware in terms of their job duties and responsibilities. When they are overwhelmed by any types of impediments, the implementation of knowledge and skills will prove to be favourable to them on a comprehensive basis. As a consequence, they will render a significant contribution in curbing impediments. This will facilitate in doing well in their job duties and in achieving organizational goals. Therefore, it is well-understood that curbing impediments is advantageous to the employees and organizations.

Throughout their jobs, the employees need to focus on their skills and abilities. The various types of skills that need to be honed are, communication skills, time management skills, decision making skills, analytical skills, creative skills, technical skills, critical thinking skills, problem-solving skills, negotiation skills, presentation skills, personal skills, professional skills and leadership skills. On the other hand, the abilities which need to be up-graded are, making wise and productive decisions; conducting analysis of the problems, which need to be improved; identifying the limitations within the course of implementation of job duties; formation of positive viewpoints in terms of various factors; development of motivation; inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; taking out sufficient amount of time for all tasks and activities; utilizing modern, scientific and innovative methods; forming cordial and sociable terms and relationships with others and possessing the abilities to work under stress. When the employees are overwhelmed by impediments, they need to make use of their skills and abilities in an appropriate manner. In this manner, the impediments will be curbed. Therefore, it is apparently understood that curbing impediments is advantageous to the employees and organizations.

Conclusion

Within the course of implementation of job duties there are occurrence of impediments. The employees need to make use of their skills, abilities and aptitude to curb the impediments. Roles of employees in curbing the impediments are, communication and participation of the employees, conducting research on regular basis, honing of problem-solving skills, formation of positive viewpoints in terms of various factors, development of motivation, implementing the traits of diligence, resourcefulness and conscientiousness, implementing time management skills, utilizing modern, scientific and innovative methods, forming cordial and sociable terms and relationships with others and possessing the abilities to work under stress. Factors regarding which impediments occur within employment settings are, job duties and responsibilities; principles, policies and laws; methods, strategies and procedures; materials and technologies; infrastructure, amenities and facilities and the overall working environmental conditions. Curbing impediments is advantageous to the employees and organizations. Finally, it can be stated, when impediments will be curbed, the employees will contribute significantly in doing well in their jobs and leading to up-gradation of the overall structure of the organizations.

Bibliography

Employees – Your Rights and Responsibilities. (n.d.). Government of Western Australia Department of Mines, Industry Regulation and Safety. Retrieved December 23, 2021 from commerce.wa.gov.au

Policy, Data, Oversight. Performance Management. (n.d.). Retrieved December 23, 2021 from opm.gov

Role of Employees in Organization Culture. (2021). Retrieved December 23, 2021 from managementstudyguide.com

The Employee's Role. (2021). Retrieved December 23, 2021 from freedonia.edu

What is Employee Role? (2021). Retrieved December 23, 2021 from taskmanagementguide.com

BOARD DIVERSITY AND FINANCIAL PERFORMANCE OF VIETNAMESE BANKS

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Abstract

The main purpose of this study is to develop a research model that identifies and assesses the factors influencing board diversity in Vietnam and their impact on bank financial performance. This study will be undertaken using a sample of Vietnamese banks listed on the Vietnamese stock exchange between 2014 and 2023. To accomplish the research goal, the data will be examined with multiple linear regression models. The study examines the demographic features of the board of directors based on four factors: age, gender, board size, and education level. The paper will present numerous instructions for shareholders in selecting the board of directors based on the relationship between the selected attributes and the company's financial success.

Keywords: *Board of Directors, Financial Performance, Gender Diversity, Board Size, Education Diversity, Age Diversity.*

Introduction

Background of the Study

Corporate governance has become a subject of significant relevance in the business world (Chan et al., 2015). As company governance is critical in building a company culture of awareness, transparency, and openness, it affects significantly on performance of firms (Al-Ahdal et al., 2019). Therefore, improving governance efficiency is critical to preventing a company financial crisis (Meng et al., 2024). Concerning interactions between top management in organizations and board functions, corporate governance is a process which includes guiding, monitoring, and assessing organizational performance (Caluwe et al., 2024). The problem of board optimization has become a controversy among not only policymakers, but also academics in many parts of the world (Sarpong-Danquah et al., 2023). Understanding a country's corporate governance not only promotes the development of its companies, capital markets, and even its economy, but it also allows outsiders to have a better understanding about the country and its companies, leading to the

establishment of diplomatic business relationships with foreign companies and investors (Jiang & Kim, 2024). Following this statement, the board of directors serves as a structure for managing and supervising senior management, which is one of the most effective ways to eliminate agency conflicts between managers and shareholders (Sarpong-Danquah et al., 2023). Ding et al. (2024) emphasized that the board of directors is a critical internal governance system that ensures shareholder interest and management responsibility, as consistently acknowledged in the finance field. The study focuses on analyzing the impact of diversity within the board and corporation's financial performance.

The board of directors has a critical role in determining a business's long-term viability and performance because every strategy or initiative must be approved or begun by the board. As a result, many firms face difficulties in selecting and appointing members to the board of directors, particularly banks, which are one of the primary sources of financing for a huge number of enterprises. It is necessary to change board duties to ensure integration of corporate and departmental governance (Caluwe et al., 2024). One strategy to ensure that manager and CEO monitoring is as rigorous as possible is to expand the number of directors with diverse characteristics, since diversity from various backgrounds can influence board decisions and promote banking system stability (Ofori-Sasu et al., 2022). Diversity management is one issue that influences whether corporate governance is effective. There are some researchers who state that senior leaders' demographic features influence their strategic judgments and corporate activities. A better organized board structure tends to enhance the company performance (Ding et al., 2024). For instance, they can broaden their perspective in the process of making decisions by the rise of creativity and innovation (Cox & Blake, 1991). However, some experts contend that corporations with more diversified boards of directors are less likely to establish foreign subsidiaries. Therefore, it is necessary to assess the correlation between the diversity of the board and financial outcomes of corporations.

Problem Statement

Companies' social, environmental, and financial performance improves when there is a presence of diversity in a board (Schoonjans, 2024). Until now, diversity on corporate boards has received widespread and positive attention, resulting in a steady growth in the number of research articles on diversity (Fernando et al., 2020). The findings of these research publications influence company recruitment trends. However, due to cultural variances between countries, particularly in Europe, America, and Asia, this cannot be stereotyped or cannot apply in specific fields since each industry has a different nature. Just a few studies have examined the influence of various board diversity measures on both bank risk and bank financial performance in an international environment (Elnahass et al., 2023), and there have been very few studies on this topic in the Vietnamese market, particularly in the banking business, and the most of them were conducted over a decade ago, making the data rather old and unsuitable for Vietnam's present economic position. As a result, it is critical to investigate the impact of board of directors' diversity in banks on the performance of Vietnam's listed companies.

In the growth of technology 4.0, creativity and innovation are increasingly valued in many enterprises. In the past, there has been a call to attention, including by the Basel Committee on Banking Supervision, to the importance of studying, understanding, and improving financial institution corporate governance through the formation of a board of directors (De Andres & Vallelado, 2008). And until now, the question of board diversity and its relationship to firm success has become a resource and idea for various research in the financial and accounting fields, which foster lots of researchers to investigate it (Hernández-Atienza et al., 2024).

Over the years, several regulatory requirements and societal pressures have pushed businesses to seek gender diversity on their boards and senior management teams (Thams et al., 2018), (Fernando et al., 2020), leads to several nations now require or have laws mandating that women serve on boards of directors (Alhosani & Nobanee, 2023). According to the survey, Norway, Belgium, Germany, Iceland, France, Italy, Denmark, and Malaysia have been at the forefront of this initiative, requiring a minimum of 30-40% representation of each gender within board; meanwhile, Finland, Israel, the United Arab Emirates, and India have required that there is at least one woman in board of business (Alhosani & Nobanee, 2023). In the past, most Vietnamese organizations tended to emphasize male personnel for key positions or older applicants with extensive experience. However, a notable shift in this field has been seen in recent years. (Soare et al., 2021).

Regarding the age of board members, a large amount of academic research investigates whether board age diversity has a detrimental or beneficial influence on business financial success (Arioglu, 2020). Board age diversity is one of two board features that have an impact on financial success (Grishunin et al., 2024) as it reflects the directors' value, and professional experience (Arioglu, 2020). For example, if a board's members were mostly elderly, shifting work patterns would present new difficulties and possibilities for the bank's senior executives (Grishunin et al., 2024).

In terms of the number of directors with a corporate board, many experts and investors have been interested in the question of how many members a business board of directors should have (Sarpong-Danquah et al., 2023). Proponents of multi-member boards say that having more individuals on board can increase background knowledge, meaning that there will be more professional specialists participating in the company's development plans and strategies, leading to a considerable boost in ROA (Danso et al., 2024). However, research indicates that a diversified board may provide a considerable limitation on strategy change (Goodstein et al., 1994).

Looking at the difference in degree level of board of directors, directors with different educational backgrounds can contribute more knowledge and complete insights to the monitoring and advising functions in corporations (Danso et al., 2024). Multiple directors with diverse experience and educational backgrounds will provide more external diplomatic contacts, allowing for more thorough judgments and more efficient resource allocation (Trinh et al., 2019). Moreover, businesses and shareholders should seek and elect board

members with advanced degrees since their skills and knowledge are likely to improve the company's credit rating (Papadimitri et al., 2020).

However, there are still numerous gaps about this issue in the academic literature in the banking sector, particularly in developing nations, due to the diverse effects of various external and internal elements of firms, as well as the economic circumstances at the moment. Recognizing this requirement, this study is undertaken to provide corporate shareholders with the most objective and clear picture of the correlation between the board of directors' qualities and the company's financial performance in the banking industry. The results of this study expectedly assist companies and shareholders in better understanding the characteristics of the board of directors, conducting elections and appointments, and establishing the most effective strategic board of directors, resulting in the ability to benefit businesses, policymakers, and professional agents. The study also helps viewers understand how corporate governance works for companies in Vietnam under the new trend.

Research Objective

This research is conducted with three major aims as follows:

- Identify the diversity factors of the board of directors in Vietnamese banks.
- Evaluate the influence of each board's characteristics on the banking company's financial success.
- Propose recommendations for both enterprises and shareholders in the process of electing and appointing board members to improve the financial performance in Vietnamese banks.

Literature Review

Related Theories

Resource Dependence Theory

Resource dependence theory is highlighted as the key mechanism by which diversity influences business performance (Hernández-Atienza et al., 2024). This theory emphasizes the need to depend on and collaborate to secure essential resources from the external environment in order to achieve higher long-term performance returns and maintain operations (Farndale et al., 2021). In 1978, Pfeffer and Salancik presented Resource Dependence Theory through the release of "The External Control of Organizations: A Resource Dependence Perspective". According to this view, resources are critical in helping firms to adopt and achieve strategic goals while also developing sustainably (Selznick, 1948). In an experimental comparison

with other models, this theory model had greater power and significance in explaining the merit impact of board diversity (Hernández-Atienza et al., 2024).

Agency Theory

The most used theory in the context of the corporate governance field is agency theory, which is by far developed by Jensen and Meckling (1976). This is a study of organizational behavior, focusing on the role and influence of situational factors on the operations of enterprises. This theory highlights the interaction between the agent (manager) and the principal (owner), in which the agent (manager) decides on the business operations and the principal (owner) hires them (Squires & Elnahla, 2020). According to this view, conflicts arise from competing interests of both parties, means that there are differences regarding financial goals between management and business shareholders, because when the manager seeks to maximize their personal gains from common assets, like building larger private offices, or hiring expensive cars, which affects the interests of the owner (Sarpong-Danquah et al., 2023). Core et al. (1999) has pointed out that agency problems develop from poor corporate governance systems when managers aim to maximize their own interests, resulting in lower company performance. To protect shareholders' interests and reduce friction between the two parties, the board of directors must oversee managers' operations.

Review of Previous Studies

A study titled "The Pathways of Board Diversity in European Contexts: Exploring the Influence of Director Types on Firm Performance" by Hernández-Atienza et al. (2024) has collected 15,471 observations from 9 countries and used 5 independent variables, including gender, age, tenure, education, and nationality factors to access and determine the correlation between board diversity and its influence on performance of business. Moreover, to reach the desired outcome, the study used two dependent variables: ROA (return on asset) and Tobin's Q ratio, ten control variables, and a U-shaped relationship, as well as the Blau index for gender and financial expertise (Hernández-Atienza et al., 2024). After the analysis process, Hernández-Atienza et al. (2024) offered the findings that emphasized there is a favorable influence on company performance by the diversity within boards regarding gender, age, and education factors. In contrast, the data for the remaining diversity parameters and board member types suggests that nationality diversity has an inconsequential effect, while tenure diversity has a negative impact. In conclusion, tenure, educational achievement, and nationality diversity may have a negative impact on firms (Hernández-Atienza et al., 2024).

Another study on the relationship between board diversity and banking performance is "The Nexus among board diversity and bank stability: Implications from gender, nationality, and education" by Elnahass et al. (2023). This study analyzes a sample of 153 banks, including 1328 observations from 14 countries to explore three independent variables, namely gender, education, and nationality diversity in the banking business. During data gathering, the author discovered that, while the number of female directors is fewer than that of male directors, their participation has grown over time in banks (Elnahass et al., 2023). To assess the influence of board diversity on bank stability, the authors employ three risk indicators to analyze,

including insolvency risk, credit risk, and operational risk. Furthermore, the article investigates the correlation between board diversity and financial outcomes by evaluating bank performance, which includes return on average assets (ROAA) and return on average equity (ROAE). Elnahass et al. (2023) used 4 types of formulas to analyze the collected data, two of them are derived from Elnahass et al. (2020) and Trinh et al. (2020). Using panel regression - Ordinary Least Squares (OLS) linear probability regression, this study discovers that board members with PhD degrees are consistently improved financial performance and efficiency of cost, and gender diversity is connected with increased bank stability (Elnahass et al., 2023). However, Elnahass et al., 2023 concluded that a higher proportion of foreign directors can lead to a weaker performance in finance and a strong growth in credit risk, which means that there is a negative influence on bank sustainability.

“The role of judicial efficiency in the board size-financial performance nexus: Evidence from microfinance institutions” (Sarpong-Danquah et al., 2023) investigated how the size of a board of directors influences corporation outcomes. After collecting data from 408 financial institutions between 2010 and 2018 and evaluating it with the System Generalized Method of Moments estimator, the authors concluded that a larger board size can reduce the level of effectiveness of financial corporation performance not only in short, but also in long term. Sarpong-Danquah et al. (2023) evaluated three dependent variables: profit margin (calculated as net operating income/operating revenue), operational self-sufficiency, and return on assets (ROA); two independent variables: board size and judicial efficiency, with board size measured as the number of directors on the board; and control variables such as the proportion of women on the board, financial structure (calculated as debt/equity), and so on. Furthermore, the study was done based on agency theory, which postulated that the size of a corporate board of directors has a favorable influence on the organization (Sarpong-Danquah et al., 2023).

The study titled "Board diversity and corporate investment oversight" (Harjoto et al., 2018) examined the relationship between board diversity and performance in corporate investment oversight by analyzing diversity in five dimensions: age, gender, tenure, race, and expertise of the board. With the fixed-effect regression, the results are consistent. Using samples of 1898 companies between 1998 and 2014, and a common demographic study measure which was developed by Gibbs and Martin (1962) and later referenced by Blau (2000), the author discovered that gender, race, and age had no effect on corporate investment performance (Harjoto et al., 2018). By contrast, there was a link between tenure and expertise and company performance. This suggests that experienced boards make better investment judgments than homogeneous boards since they have varied points of view on business.

Kolev & McNamara (2019) used the resource dependency theory and data from 1500 enterprises during the timescale of 1996 to 2012 to demonstrate the correlation between the diversity in racial and gender on the board of directors, and the influence on corporate divestment. According to Kolev and McNamara (2019), because of disparities in information, viewpoints, experiences, and attitudes among individuals and ethnicities, it will take quite some time for the board of directors to reach the final decision. At the same time, the research found that when there is cognitive heterogeneity on the board (also known as diversity),

more information is exchanged, meetings are better prepared and more frequent, and divestment monitoring is more closely implemented, resulting in higher divestment returns.

Based on the preceding discussion, the current research is conducted to examine the effect of four key independent variables including board age, board size, board gender, and board education on a new dependent variable that is profit margin. To make the outcome more realistic and meaningful, multiple linear regression models will be utilized. It is expected that the findings may not be indicative of the entire business or sector, as numerous factors influence the company's financial success. Furthermore, the study's samples will be collected within the last ten years, from 2014 to 2023, thus the results are estimated to be more reliable in the current market.

Hypotheses Development

Board Size and Financial Performance

The size of the board of directors is an important factor that influences the company's effectiveness. To be specific, board size refers to the number of directors on a board of directors, regardless of gender, age, or race.

Many future business professors and policymakers have disputed whether board size can provide the effectiveness for company success or not (Sarpong-Danquah et al., 2023). According to resource dependency and agency theory, larger boards may have more specialists and independent directors, which means that the bigger board size, the more valuable resources, boosting decision-making process (Danso et al., 2024). Major boards may add value not only to major banks but also to those led by CEOs (Tampakoudis et al., 2022). Furthermore, banks with larger board sizes exhibit more visible market discipline (Saheruddin & Soedarmono, 2022)

On the other hand, Sarpong-Danquah et al.'s (2023) emphasized board size has a direct negative impact on financial performance in both the short and long term. Previously, Goodstein et al. (1994) demonstrated that if the board of directors is too broad, it might pose severe difficulties in the process of providing feedback, planning, and modifying the enterprise's strategy. Both studies concluded that firms should plan and explore reducing the size of the board of directors if they want to enhance the company's performance. A big board may support the board's essential tasks, but a lack of understanding in communication and ideas can undermine decision-making efficacy and company success (Sarpong-Danquah et al., 2023). A board with too many members will cause internal problems owing to disputes and communication breakdowns, resulting in inefficient board meetings and decision making, while a small board of directors will have better coherence among its members, and decision-making will be speedier and more effective (Tampakoudis et al., 2021).

There are numerous perspectives on the impact of board size on firm success in general, and financial performance specifically. Thus, the present study is done to re-evaluate the function and influence of board size on business performance.

Hypotheses 1_H1. Board size has a positive impact on firm financial performance.

Hypotheses H1a. Board size has a positive impact on return on asset (ROA)

Hypotheses H1b. Board size has a positive impact on return on equity (ROE)

Hypotheses H1c. Board size has a positive impact on profit margin (PM)

Board Age and Financial Performance

In addition to board size, board members' ages influence the company's performance. The board's age symbolizes the company's growth options (McGuinness 2020). The perspectives, knowledge, and experience gained by directors of various ages can lead to more effective monitoring, group strategic decision making, and increased creativity in the boardroom, whereas conflicts, communication issues, and cooperation among board members are insignificant in comparison to the benefits of age diversity (Arioglu, 2021). According to agency theory and resource dependence theory, age diversity on a company's board appears to be a merit to performance results (Arioglu, 2020). Moreover, Bashir et al. (2021) have proved that combining the innovation and adaptability of younger directors on the board with the expertise and abilities of senior members allows firms to sustain market share and continuously improve performance. Another example is that CEOs of enterprises are less likely to engage in financial fraud as the age of the board of directors increases because older directors are more experienced in their business and have more to lose, so they are willing to perform their monitoring duties to the best of their abilities (Xu et al., 2017). However, some theories suggest that younger boards might react faster to innovation, particularly in technology.

In contrast, one study revealed no significant association between age diversity and ROA in banks (Grishunin et al., 2024). In this context, it is vital to validate and measure the influence of age diversity among bank board members.

Hypotheses 2_H2. Age diversity has a positive impact on firm financial performance.

Hypotheses H2a. Age diversity has a positive impact on return on asset (ROA)

Hypotheses H2b. Age diversity has a positive impact on return on equity (ROE)

Hypotheses H2c. Age diversity has a positive impact on profit margin (PM)

Board Gender and Financial Performance

Gender is seen as an essential factor in evaluating the financial performance of organizations. Carter et al. (2003) discovered a strong positive correlation between the proportion of women on boards of directors and corporate value. The presence of women on the board of directors can hinder the company's overinvestment behavior, and the higher the proportion of female senior executives, the lower the likelihood of overinvestment behavior in public businesses (Smith et al., 2006). According to agency theory, since diversity enhances the number of independence decisions and a level of efficiency monitoring, a board which has female directors can better oversee managers' operations (Carter et al., 2003). Additionally, based on the resource dependence hypothesis, board gender diversity may supply organizations with diverse styles of thinking (Wei, 2024). On top of that, Cho et al. (2021) focused on the importance of gender on the bankruptcy risk of firms and provided evidence that greater diversity in gender leads to lower bankruptcy. A board with more females can increase the performance of firms, especially corporate environmental responsibility (Wang et al., 2020), also can understand the needs of specific client groups (Sharma et al., 2024). Fernando et al. (2020) provided evidence that companies' profitability improved by 15% as the number of female CEOs rose from 0% to 30% of the total number of directors on the board. This occurred because female directors had distinct talents in long-term planning and risk management.

However, Grishunin et al. (2024) discovered that gender diversity on the board of directors had a considerable negative impact on Tobin's Q of banks, as well as no meaningful association between gender diversity and bank ROA. Adams and Ferreira (2009) claimed that gender diversity had a negative impact on company performance, leading to bankruptcy. Finally, many writers argue that gender diversity within boards has no major impact on outcomes of businesses (Alhosani & Nobanee, 2023), including Oh et al. (2019), Harjoto and Rossi (2018).

Hypotheses 3_H3. Gender diversity has a positive impact on firm financial performance.

Hypotheses H3a. Gender diversity has a positive impact on return on asset (ROA)

Hypotheses H3b. Gender diversity has a positive impact on return on equity (ROE)

Hypotheses H3c. Gender diversity has a positive impact on profit margin (PM)

Board Education and Financial Performance

The effectiveness of firm performance is also attributed to the education factor of the board of directors (Al-Dubai, 2023). Different degrees of education may represent board members' experience, tenure, and talents. The integration of resource dependence theory and agency theory has aided much research on the relationship between board expertise diversity and firm performance, as highly qualified individuals will have long-term experiences and good performance can enrich the process of opinion formation (Danso et al., 2024). Bertrand and Schoar (2003) demonstrate that managers with MBA degrees develop and implement more proactive plans, which have a favorable influence on the organization. Furthermore, having highly educated members on the board, such as PhDs, will improve bank stability (Elnahass et al., 2023). Level of

board education plays a crucial role in a company, impacting directly to financial risk disclosure (Al-Dubai, 2023). On top of that, higher education levels among key individuals are more likely to assist the organization obtain a better rating in credit (Papadimitri et al., 2020).

However, evidence showed that the field of education does not have any relationship with performance within business, still needs to be considered (Al-Dubai, 2023). Hernández-Atienza et al. (2024) emphasized there is only a minor impact of the diversity education among board members on firms. Therefore, the evidence on the impact of high or low levels of education on company success remains mixed, and because education is a major priority when selecting managers and leaders, we need to reconsider this relationship.

Hypotheses 4_H4. Educational diversity has a positive impact on firm financial performance.

Hypotheses H4a. Educational diversity has a positive impact on return on asset (ROA)

Hypotheses H4b. Educational diversity has a positive impact on return on equity (ROE)

Hypotheses H4c. Educational diversity has a positive impact on profit margin (PM)

Methodology

Research Design

In this study, multiple linear regression methods by Chatterjee and Hadi (2006) will be employed to examine hypotheses concerning the association between board of directors' characteristics and enterprise financial performance, including ROA, ROE, and profit margin. The model takes the following form:

$$\text{Firm Performance} = \beta_0i + \beta_1\text{BOD_SZ}_{it} + \beta_2\text{BOD_GEN}_{it} + \beta_3\text{BOD_AGE}_{it} + \beta_4\text{BOD_EDU}_{it} + \beta_5\text{FIRM_AGE}_{it} + \beta_6\text{FIRM_SIZE}_{it} + \varepsilon_{it}$$

Where:

$\beta_0, \beta_2, \dots, \beta_6$: Constants of the regression model

ε : Random error of the model

i: Enterprise i

t: Time t

Firm Performance: measured by ROA, ROE, and profit margin

Model 1: Board Diversity and Return on Asset

$$ROA = \beta_0i + \beta_1BOD_SZ + \beta_2BOD_GEN + \beta_3BOD_AGE + \beta_4BOD_EDU + \beta_5FIRM_AGE + \beta_6FIRM_SIZE + \epsilon_{it}$$

Model 2: Board Diversity and Return on Equity

$$ROE = \beta_0i + \beta_1BOD_SZ + \beta_2BOD_GEN + \beta_3BOD_AGE + \beta_4BOD_EDU + \beta_5FIRM_AGE + \beta_6FIRM_SIZE + \epsilon_{it}$$

Model 2: Board Diversity and Profit Margin

$$\text{Profit margin} = \beta_0i + \beta_1BOD_SZ + \beta_2BOD_GEN + \beta_3BOD_AGE + \beta_4BOD_EDU + \beta_5FIRM_AGE + \beta_6FIRM_SIZE + \epsilon_{it}$$

Variable Measurement

Dependent Variable

In the study, financial performance is the dependent variable. To analyze the enterprise's financial level, accounting-based firm performance indicators are required. To Topak (2011), return on asset (ROA) and return on equity (ROE) are the two most employed indicators to quantify the company's success. The profit margin assesses a company's profitability (Sarpong-Danquah et al., 2023) and measures the ability to generate income from operating activities (Hayes, 2024). Researchers recommend assessing a company's return on assets by analyzing profit margins (calculated by income from operating activities divided by revenue from operating activities) (Jansen et al., 2011).

Independent Variable

Board Size: This is the total number of directors (including executive and independent non-executive directors) (Sarpong-Danquah et al., 2023), which is included in the company's annual report.

Board Gender: The data for this board of directors' characteristics will be divided into two categories: "male" and "female". This represents the percentage of female board members in the enterprise, calculated by total number of female members/ total number of members within board (Elnahass et al., 2023), (Harjoto et al., 2018).

Board Age: Board age will be divided into "old member" and "young member" and the data will be gathered from annual report of corporations (Harjoto et al., 2018).

Board Education: Board education will be measured by the education level or degree that the members of the board of directors have obtained (Elnahass et al., 2023).

Control Variable

Firm size (Li & Chen, 2018) and age are two of the most important control variables for determining firm performance (Vafeas & Theodorou, 1998). Therefore, it is worthwhile to gather and study data.

Firm Age: The number of years that the bank has been in operation in the market (Hernández-Atienza et al., 2024), (Elnahass et al., 2023).

Firm Size: refers to the corporation's total assets (Hernández-Atienza et al., 2024), (Elnahass et al., 2023). This indicates that the larger the firm, the better its resource allocation and the less likely it is to face challenges that have an adverse impact on its performance.

Data Collection and Analysis

Secondary data from banks on Vietnamese stock exchanges will be gathered. The research sample consists of Vietnamese commercial banks with the highest capitalization. The study will concentrate on banks with a long history of business and high capitalization.

STATA 18 software will be used to process the collected data. Descriptive statistics will be analyzed to understand the characteristics of the variables. Panel regression approaches such as the Pooled OLS (Ordinary Least Square) Model, Fixed Effects Model (FEM), And Random Effects Model (REM).

Conclusions

The current study aims to design a research framework to examine the correlation between board diversity and financial performance of Vietnamese banks from 2014 to 2023. It is predicted that the study results will show the level of influence of each board characteristic on ROA and ROE factors, thereby prove that the more diverse board of directors, the higher performance.

After reviewing and inheriting the combination of two theories including agency theory and resources dependence theory and a variety of previous studies, the study concentrates on analyzing four different common characteristics of a board. Using secondary data from the firms' audited consolidated financial statements and appropriate statistical tools, it is expected that four characteristics of the board of directors have influences on the bank financial performance.

References

1. Harjoto, M. A., Laksmana, I., & Yang, Y. (2018). Board diversity and corporate investment oversight. *Journal of Business Research*, 90, 40–47. <https://doi.org/10.1016/j.jbusres.2018.04.033>
2. Elnahass, M., Alharbi, R., Mohamed, T. S., & McLaren, J. (2023). The Nexus among board diversity and bank stability: Implications from gender, nationality and education. *Emerging Markets Review*, 57, 101071. <https://doi.org/10.1016/j.ememar.2023.101071>

3. Hernández-Atienza, F., Rodríguez-Sanz, J. A., & Tejerina-Gaite, F. (2024). The pathways of board diversity in European contexts: Exploring the influence of director types on firm performance. *Research in International Business and Finance*, 72, 102501. <https://doi.org/10.1016/j.ribaf.2024.102501>
4. Elnahass, M., Salama, A., & Trinh, V. Q. (2020). Firm valuations and board compensation: Evidence from alternative banking models. *Global Finance Journal*, 51, 100553. <https://doi.org/10.1016/j.gfj.2020.100553>
5. Trinh, V. Q., Elnahass, M., Salama, A., & Izzeldin, M. (2019). Board busyness, performance and financial stability: does bank type matter? *European Journal of Finance*, 26(7–8), 774–801. <https://doi.org/10.1080/1351847x.2019.1636842>
6. Hambrick, D. C. (2007). Upper Echelons Theory: an update. *Academy of Management Review*, 32(2), 334–343. <https://doi.org/10.5465/amr.2007.24345254>
7. Kolev, K. D., & McNamara, G. (2019). Board demography and divestitures: The impact of gender and racial diversity on divestiture rate and divestiture returns. *Long Range Planning*, 53(2), 101881. <https://doi.org/10.1016/j.lrp.2019.05.001>
8. Sarpong-Danquah, B., Adusei, M., & Al-Faryan, M. a. S. (2023). The role of judicial efficiency in the board size-financial performance nexus: Evidence from microfinance institutions. *Social Sciences & Humanities Open*, 8(1), 100584. <https://doi.org/10.1016/j.ssaho.2023.100584>
9. Goodstein, J., Gautam, K., & Boeker, W. (1994). The effects of board size and diversity on strategic change. *Strategic Management Journal*, 15(3), 241–250. <https://doi.org/10.1002/smj.4250150305>
10. Tampakoudis, I., Nerantzidis, M., Artikis, P., & Kiosses, N. (2022). The effect of board size on shareholder value: Evidence from bank mergers and acquisitions. *European Management Journal*, 40(6), 883–894. <https://doi.org/10.1016/j.emj.2022.09.002>
11. Saheruddin, H., & Soedarmono, W. (2022). Do board size, institutional ownership and external auditors matter to market discipline in Indonesian banking? *The Quarterly Review of Economics and Finance*, 86, 389–395. <https://doi.org/10.1016/j.qref.2022.08.010>
12. McGuinness, P. B. (2020). Board member age, stock seasoning and the evolution of capital structure in Chinese firms. *International Business Review*, 30(3), 101769. <https://doi.org/10.1016/j.ibusrev.2020.101769>
13. Arioglu, E. (2021). Board age and value diversity: Evidence from a collectivistic and paternalistic culture. *Borsa Istanbul Review*, 21(3), 209–226. <https://doi.org/10.1016/j.bir.2020.10.004>
14. Xu, Y., Zhang, L., & Chen, H. (2017). Board age and corporate financial fraud: An interactionist view. *Long Range Planning*, 51(6), 815–830. <https://doi.org/10.1016/j.lrp.2017.08.001>

15. Grishunin, S., Yarantseva, A., & Karminsky, A. (2024). Influence of gender and age diversity of boards on financial and market performance of banks. *Procedia Computer Science*, 242, 372–379. <https://doi.org/10.1016/j.procs.2024.08.172>
16. Bashir, M., Hameed, A., Bari, M. W., & Ullah, R. (2021). The Impact of Age-Diverse Workforce on Organization Performance: Mediating role of job crafting. *SAGE Open*, 11(1), 215824402199905. <https://doi.org/10.1177/2158244021999058>
17. Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial Review*, 38(1), 33–53. <https://doi.org/10.1111/1540-6288.00034>
18. Smith, N., Smith, V., & Verner, M. (2006). Do Women in Top Management Affect Firm performance A panel study of 2,500 Danish firms. *International Journal of Productivity and Performance Management*, 55, 569-593. - References - Scientific Research Publishing. (n.d.). <https://www.scirp.org/reference/referencespapers?referenceid=3017867>
19. Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance ☆. *Journal of Financial Economics*, 94(2), 291–309. <https://doi.org/10.1016/j.jfineco.2008.10.007>
20. Bertrand, M., & Schoar, A. (2003). Managing with Style: The Effect of Managers on Firm Policies. *The Quarterly Journal of Economics*, 118(4), 1169–1208. <https://doi.org/10.1162/003355303322552775>
21. Vafeas, N., & Theodorou, E. (1998). THE RELATIONSHIP BETWEEN BOARD STRUCTURE AND FIRM PERFORMANCE IN THE UK. *The British Accounting Review*, 30(4), 383–407. <https://doi.org/10.1006/bare.1998.0075>
22. Cox, T., & Blake, S. (1991). Managing cultural diversity: implications for organizational competitiveness. <https://www.semanticscholar.org/paper/Managing-cultural-diversity%3A-implications-for-Cox-Blake/4f9e8a0c34abe85ecea549fa924fc2719aabef3>
23. Gattai, V., Natale, P., & Rossi, F. (2022). Board diversity and outward FDI: Evidence from europe. *Economic Modelling*, 120, 106156. <https://doi.org/10.1016/j.econmod.2022.106156>
24. Decision making in the age of urgency. (2019, April 30). McKinsey & Company. <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/decision-making-in-the-age-of-urgency>
25. Selznick, P. (1948). Foundations of the Theory of organization. <https://www.semanticscholar.org/paper/Foundations-of-the-Theory-of-Organization-Selznick/163410b26142713635c38f0fb0514e0a93c82cf8>

26. Carter, D. A., D'Souza, F., Simkins, B. J., & Simpson, W. G. (2010). The gender and ethnic diversity of US boards and board committees and firm financial performance. *Corporate Governance an International Review*, 18(5), 396–414. <https://doi.org/10.1111/j.1467-8683.2010.00809.x>
27. Spence, M. (1973) Job Market Signaling. *Quarterly Journal of Economics*, 87, 355- 374. - References - Scientific Research Publishing. (n.d.). <https://www.scirp.org/reference/referencespapers?referenceid=2008906>
28. Pfeffer, J. and Salancik, G. (1978) *The External Control of Organizations A Resource Dependence Perspective*. Harper & Row, New York. - References - Scientific Research Publishing. (n.d.). <https://www.scirp.org/reference/referencespapers?referenceid=1837781>
29. Hillman, C., Pontifex, M., Raine, L., Castelli, D., Hall, E., & Kramer, A. (2009). The effect of acute treadmill walking on cognitive control and academic achievement in preadolescent children. *Neuroscience*, 159(3), 1044–1054. <https://doi.org/10.1016/j.neuroscience.2009.01.057>
30. Martin, J. R., & Rose, D. (2007). *Working with Discourse Meaning Beyond the Clause* (2nd ed.). Open Linguistics Series, London Bloomsbury. - References - Scientific Research Publishing. (n.d.). <https://www.scirp.org/reference/referencespapers?referenceid=2122400>
31. Daily, C., Certo, T., & Dalton, D. (1999). A decade of Corporate women Some progress in the boardroom, none in the executive suite. *Strategic Management Journal*, 20, 93-99. - References - Scientific Research Publishing. (n.d.). <https://www.scirp.org/reference/referencespapers?referenceid=3366988>
32. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360. [https://doi.org/10.1016/0304-405x\(76\)90026-x](https://doi.org/10.1016/0304-405x(76)90026-x)
33. Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics*, 51(3), 371–406. [https://doi.org/10.1016/s0304-405x\(98\)00058-0](https://doi.org/10.1016/s0304-405x(98)00058-0)
34. Chan, C., Chou, D., Lin, J., & Liu, F. (2015). The role of corporate governance in forecasting bankruptcy: Pre- and post-SOX enactment. *The North American Journal of Economics and Finance*, 35, 166–188. <https://doi.org/10.1016/j.najef.2015.10.008>
35. Al-Ahdal, W. M., Alsamhi, M. H., Tabash, M. I., & Farhan, N. H. (2019). The impact of corporate governance on financial performance of Indian and GCC listed firms: An empirical investigation. *Research in International Business and Finance*, 51, 101083. <https://doi.org/10.1016/j.ribaf.2019.101083>
36. Meng, Q., Wang, S., & Zheng, X. (2024). Corporate governance and financial distress in China a multi-dimensional nonlinear study based on machine learning. *Pacific-Basin Finance Journal*, 102549. <https://doi.org/10.1016/j.pacfin.2024.102549>

37. Caluwe, L., Wilkin, C. L., De Haes, S., & Huygh, T. (2024). Board roles required for IT governance to become an integral component of corporate governance. *International Journal of Accounting Information Systems*, 54, 100694. <https://doi.org/10.1016/j.accinf.2024.100694>
38. Ding, S., Du, M., Cui, T., Zhang, Y., & Duygun, M. (2024). Impact of board diversity on Chinese firms' cross-border M&A performance: An artificial intelligence approach. *International Review of Economics & Finance*, 92, 1321–1335. <https://doi.org/10.1016/j.iref.2024.02.077>
39. De Andres, P., & Vallelado, E. (2008). Corporate governance in banking: The role of the board of directors. *Journal of Banking & Finance*, 32(12), 2570–2580. <https://doi.org/10.1016/j.jbankfin.2008.05.008>
40. Sakawa, H., Watanabel, N., & Kuroki, Y. (2024). Does gender diversity on boards improve bank financial performance in a bank-based financial system? A pre-registered report. *Pacific-Basin Finance Journal*, 102524. <https://doi.org/10.1016/j.pacfin.2024.102524>
41. Cho, E., & Joo, M. H. (2024). Does board ethnic diversity mitigate bankruptcy risk? *International Review of Financial Analysis*, 103588. <https://doi.org/10.1016/j.irfa.2024.103588>
42. Farndale, E., Beamon, M., Corbett-Etchevers, I., & Xu, S. (2021). Accessing host country national talent in emerging economies: A resource perspective review and future research agenda. *Journal of World Business*, 57(1), 101256. <https://doi.org/10.1016/j.jwb.2021.101256>
43. Hillman, A. J., & Dalziel, T. (2003). Boards of Directors and Firm performance: Integrating agency and resource dependence perspectives. *Academy of Management Review*, 28(3), 383. <https://doi.org/10.2307/30040728>
44. Cho, E., Okafor, C., Ujah, N., & Zhang, L. (2021). Executives' gender-diversity, education, and firm's bankruptcy risk: Evidence from China. *Journal of Behavioral and Experimental Finance*, 30, 100500. <https://doi.org/10.1016/j.jbef.2021.100500>
45. Wang, Y., Wilson, C., & Li, Y. (2020). Gender attitudes and the effect of board gender diversity on corporate environmental responsibility. *Emerging Markets Review*, 47, 100744. <https://doi.org/10.1016/j.ememar.2020.100744>
46. Sharma, A., Chauhan, S., Mia, M. A., Sangwan, S., Siddiqui, S. A., & Kumar, S. (2024). Board gender diversity and debt utilization: Evidence from the global microfinance industry. *Borsa Istanbul Review*. <https://doi.org/10.1016/j.bir.2024.02.012>
47. Al-Dubai, S. a. A. (2023). Do level, field, and place of board members' Education impact financial risk disclosure? A Saudi Empirical evidence. *Heliyon*, 9(12), e22288. <https://doi.org/10.1016/j.heliyon.2023.e22288>
48. Papadimitri, P., Pasiouras, F., Tasiou, M., & Ventouri, A. (2020). The effects of board of directors' education on firms' credit ratings. *Journal of Business Research*, 116, 294–313. <https://doi.org/10.1016/j.jbusres.2020.04.059>

49. Nguyen, T., Bai, M., Hou, Y., & Vu, M. (2020). Corporate governance and dynamics capital structure: evidence from Vietnam. *Global Finance Journal*, 48, 100554. <https://doi.org/10.1016/j.gfj.2020.100554>
50. Arioglu, E. (2020). Board age and value diversity: Evidence from a collectivistic and paternalistic culture. *Borsa Istanbul Review*, 21(3), 209–226. <https://doi.org/10.1016/j.bir.2020.10.004>
51. Wei, Y. (2024). Gender matters: board gender diversity and firms' export resilience. *Humanities and Social Sciences Communications*, 11(1). <https://doi.org/10.1057/s41599-024-03291-z>
52. Danso, F. K., Adusei, M., Sarpong-Danquah, B., & Prempeh, K. B. (2024). Board expertise diversity and firm performance in sub-Saharan Africa: do firm age and size matter? *Future Business Journal*, 10(1). <https://doi.org/10.1186/s43093-024-00386-6>
53. Jiang, F., & Kim, K. A. (2024). Understanding corporate governance in China. *The British Accounting Review*, 56(5), 101459. <https://doi.org/10.1016/j.bar.2024.101459>
54. Squires, B., & Elnahla, N. (2020). The roles played by boards of directors: an integration of the agency and stakeholder theories. *Transnational Corporation Review*, 12(2), 126–139. <https://doi.org/10.1080/19186444.2020.1757340>
55. Alhosani, N. H. I., & Nobanee, H. (2023). Board gender diversity and corporate social responsibility: A bibliometric analysis. *Heliyon*, 9(1), e12734. <https://doi.org/10.1016/j.heliyon.2022.e12734>
56. Thams, Y., Bendell, B. L., & Terjesen, S. (2018). Explaining women's presence on corporate boards: The institutionalization of progressive gender-related policies. *Journal of Business Research*, 86, 130–140. <https://doi.org/10.1016/j.jbusres.2018.01.043>
57. Fernando, G. D., Jain, S. S., & Tripathy, A. (2020). This cloud has a silver lining: Gender diversity, managerial ability, and firm performance. *Journal of Business Research*, 117, 484–496. <https://doi.org/10.1016/j.jbusres.2020.05.042>
58. Oh, W., Chang, Y. K., & Jung, R. (2019). Board characteristics and corporate social responsibility: Does family involvement in management matter? *Journal of Business Research*, 103, 23–33. <https://doi.org/10.1016/j.jbusres.2019.05.028>
59. Ahern, K. R., & Dittmar, A. K. (2012). The changing of the boards: The impact on firm valuation of mandated female board representation *. *The Quarterly Journal of Economics*, 127(1), 137–197. <https://doi.org/10.1093/qje/qjr049>
60. Harjoto, M. A., & Rossi, F. (2018). Religiosity, female directors, and corporate social responsibility for Italian listed companies. *Journal of Business Research*, 95, 338–346. <https://doi.org/10.1016/j.jbusres.2018.08.013>

61. Ofori-Sasu, D., Sarpong, M. O., Tetteh, V., & Kusi, B. A. (2022). Banking disclosure and banking crises in Africa: does board gender diversity play a role? *Humanities and Social Sciences Communications*, 9(1). <https://doi.org/10.1057/s41599-021-01019-x>
62. Pearce, J. A., & Patel, P. C. (2017). Board of director efficacy and firm performance variability. *Long Range Planning*, 51(6), 911–926. <https://doi.org/10.1016/j.lrp.2017.12.001>
- Soare, T., Detilleux, C., & Deschacht, N. (2021). The impact of the gender composition of company boards on firm performance. *International Journal of Productivity and Performance Management*, 71(5), 1611–1624. <https://doi.org/10.1108/ijppm-02-2020-0073>
63. Li, H., & Chen, P. (2018). Board gender diversity and firm performance: The moderating role of firm size. *Business Ethics a European Review*, 27(4), 294–308. <https://doi.org/10.1111/beer.12188>
64. Tampakoudis, I., Noulas, A., & Kiosses, N. (2021). The market reaction to syndicated loan announcements before and during the COVID-19 pandemic and the role of corporate governance. *Research in International Business and Finance*, 60, 101602. <https://doi.org/10.1016/j.ribaf.2021.101602>
65. Tampakoudis, I., Noulas, A., Kiosses, N., & Drogalas, G. (2021). The effect of ESG on value creation from mergers and acquisitions. What changed during the COVID-19 pandemic? *Corporate Governance*, 21(6), 1117–1141. <https://doi.org/10.1108/cg-10-2020-0448>
66. Goodstein, J., Gautam, K., & Boeker, W. (1994). The effects of board size and diversity on strategic change. *Strategic Management Journal*, 15(3), 241–250. <https://doi.org/10.1002/smj.4250150305>
67. Chatterjee, S., & Hadi, A. S. (2006). Regression analysis by example. In *Wiley series in probability and statistics*. <https://doi.org/10.1002/0470055464>
68. Hayes, A. (2024, June 25). *Profitability Ratios: What they are, common types, and how businesses use them*. Investopedia. <https://www.investopedia.com/terms/p/profitabilityratios.asp>
69. Jansen, I. P., Ramnath, S., & Yohn, T. L. (2011). A diagnostic for earnings management using changes in asset turnover and profit margin*. *Contemporary Accounting Research*, 29(1), 221–251. <https://doi.org/10.1111/j.1911-3846.2011.01093.x>

ESG DISCLOSURE, STOCK LIQUIDITY AND FINANCIAL PERFORMANCE

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Abstract

The increasing regulatory emphasis on Environmental, Social, and Governance (ESG) disclosures has reshaped the global corporate reporting landscape, driven by the demand for greater transparency and accountability in sustainability practices. The study's purpose is to develop a research model to examine the effects of mandatory ESG disclosures on stock liquidity and financial performance across different sectors, with particular focus on high-impact industries such as energy and manufacturing. A comprehensive dataset from Eikon will be gathered and a difference-in-differences (DiD) model is utilized to evaluate the causal effects of mandatory ESG disclosures on key financial metrics, including stock liquidity and financial performance. In addition, the study explores the moderating effects of voluntary ESG disclosures and the role of enforcement mechanisms, both formal and informal, in enhancing disclosure outcomes. This study is expected to contribute to the growing literature on sustainability accounting and ESG reporting by offering empirical evidence on the long-term financial implications of ESG regulations, with important implications for policymakers, regulators, and corporate managers seeking to optimize disclosure practices for enhanced market efficiency and investor trust.

Keywords: *ESG Disclosures, Stock Liquidity, Financial Performance, Mandatory Reporting, Enforcement Mechanisms, Sustainability Accounting, High-Impact Sectors.*

Introduction

Existing research has shown the potential benefits of ESG disclosure, particularly in terms of improving stock liquidity and reducing a firm's cost of capital. Barth et al. (2017) argue that increased corporate disclosure, including ESG-related information, reduces information asymmetry, thereby improving liquidity by leveling the playing field for investors. Similarly, Diamond and Verrecchia (1991) argue that public disclosure reduces adverse selection among investors, leading to increased liquidity. Studies have also shown that ESG disclosure can have a positive impact on firm valuation, as it demonstrates management's commitment to sustainable practices, which can attract long-term investors (Dhaliwal et al., 2011; Ioannou & Serafeim, 2019). However, while the short-term effects of ESG disclosure on stock liquidity and financial performance have been widely examined, their long-term effects have received less attention, especially in relation to industry-specific differences.

Sector-specific differences in ESG disclosure outcomes create a significant research gap. Different industries face different levels of exposure to environmental and social risks, and these factors may influence the extent to which ESG disclosures affect liquidity and financial performance. For example, sectors such as energy, manufacturing, and chemicals are subject to increased scrutiny regarding their environmental performance, while sectors such as technology and financial services may be more affected by governance-related disclosures (Grewal, Riedl, & Serafeim, 2019). Companies in high-impact sectors may experience more pronounced effects from mandatory ESG disclosures due to increased regulatory scrutiny and investor scrutiny (Ioannou & Serafeim, 2019). Thus, the effectiveness of mandatory ESG disclosures in improving stock liquidity and financial performance may vary significantly across sectors, depending on their specific regulatory and market contexts.

Furthermore, while mandatory ESG disclosures are designed to enhance transparency, many firms have voluntarily provided ESG information prior to the implementation of disclosure mandates. Voluntary disclosures often signal proactive corporate governance and a commitment to sustainability, which can influence investor perceptions and market outcomes (Dhaliwal et al., 2011). Firms that engage in voluntary ESG reporting may experience reduced marginal benefits from mandatory disclosures, as they have already established a reputation for transparency. Conversely, firms that do not voluntarily disclose ESG information may see greater improvements in liquidity and financial performance once mandates are introduced, as these disclosures reduce information asymmetry and increase investor confidence (Bozkurt, 2022). Understanding the interaction between voluntary and mandatory disclosures is essential for assessing the overall impact of ESG reporting on firm outcomes.

In addition to the direct effects of ESG disclosures, the enforcement of these mandates plays a critical role in determining their effectiveness. Strong enforcement mechanisms, whether formal (e.g., regulatory penalties) or informal (e.g., societal pressure), ensure that firms comply with disclosure requirements and provide accurate and comprehensive information (Leuz & Wysocki, 2016). The role of enforcement is particularly important in countries with weaker legal frameworks, where informal societal norms may substitute for formal enforcement mechanisms (Guan et al., 2020). In such contexts, the strength of informal institutions—such as investor preferences for sustainable practices or societal trust—can significantly influence the quality and impact of ESG disclosures (Christensen, Hail, & Leuz, 2021). However, there is limited empirical research on how formal and informal enforcement mechanisms interact to shape the outcomes of mandatory ESG disclosures, particularly in different regulatory environments.

This study aims to address these gaps by examining the long-term effects of mandatory ESG disclosures on stock liquidity and financial performance, with a focus on sectoral differences and the role of enforcement mechanisms. Using a comprehensive dataset of firms across multiple countries, the study investigates how different sectors respond to ESG mandates and how voluntary disclosures interact with mandatory reporting requirements. It also explores how formal and informal enforcement mechanisms influence the effectiveness of ESG disclosures in improving corporate transparency and financial outcomes. By adopting a comparative approach, this research seeks to provide nuanced insights into the complex dynamics of ESG reporting and its

long-term implications for firms, investors, and regulators.

Specific objectives of the study are as follows.

- To examine the long-term impact of mandatory ESG disclosures on stock liquidity across various sectors, focusing on how these effects evolve over time.
- To investigate sector-specific dynamics by analyzing how firms in industries with different levels of environmental and social risks respond to mandatory ESG disclosures.
- To explore the interaction between voluntary and mandatory ESG disclosures, assessing how pre-existing voluntary disclosure practices influence the effectiveness of mandatory reporting.
- To assess the role of formal and informal enforcement mechanisms in shaping the outcomes of mandatory ESG disclosures, with particular attention to differences in regulatory and societal contexts.

Literature Review

Review of Theories

Agency Theory: Agency theory posits that there is a conflict of interest between managers (agents) and shareholders (principals) due to information asymmetry. ESG disclosures, especially mandatory ones, reduce this asymmetry by providing stakeholders with more information about the firm's sustainability practices, thereby aligning the interests of managers and shareholders (Jensen & Meckling, 1976). This alignment reduces the risk of managerial opportunism and enhances corporate governance, leading to improved financial performance and stock liquidity (Ioannou & Serafeim, 2019).

Signaling Theory: Signaling theory suggests that firms use disclosures to signal their quality to the market. Voluntary ESG disclosures are often viewed as a signal of a firm's commitment to sustainability and ethical practices (Spence, 1973). When firms voluntarily disclose ESG information, they signal to investors that they are managing non-financial risks effectively. Conversely, firms that only comply with mandatory ESG disclosures may signal less proactive management, leading to varied impacts on liquidity and performance (Dhaliwal et al., 2011).

Stakeholder Theory: Stakeholder theory argues that firms must consider the interests of all stakeholders, including employees, customers, and the community, not just shareholders (Freeman, 1984). ESG disclosures align with this theory by providing transparency about a firm's impact on various stakeholder groups. Firms that actively engage in ESG reporting may foster stronger relationships with stakeholders, leading to improved reputations, customer loyalty, and long-term financial performance (Ioannou & Serafeim, 2019).

Legitimacy Theory: Legitimacy theory suggests that organizations seek to legitimize their actions by conforming to societal norms and expectations. Mandatory ESG disclosures help firms gain legitimacy by demonstrating their compliance with environmental and social regulations. Firms in industries with high societal scrutiny, such as oil and gas, are more likely to benefit from ESG disclosures as they work to maintain or enhance their legitimacy (Grewal, Riedl, & Serafeim, 2019).

Hypothesis Development

Research on the financial implications of ESG disclosures has grown significantly in recent years. Barth et al. (2017) demonstrate that firms engaging in integrated reporting, which includes ESG information, experience significant improvements in stock liquidity and capital market performance. Their findings suggest that enhanced transparency reduces information asymmetry and fosters investor confidence, thereby improving liquidity. Ioannou and Serafeim (2019) conducted a study on the effects of mandatory sustainability reporting and found that firms subjected to ESG disclosure requirements experience higher valuations and better financial performance. This study emphasizes the importance of regulatory frameworks in shaping the financial outcomes of ESG reporting, particularly in industries that are exposed to high levels of environmental and social risks.

Grewal, Riedl, and Serafeim (2019) explore the sectoral effects of mandatory ESG disclosures and highlight that firms in high-impact industries, such as energy and manufacturing, experience greater benefits from these disclosures compared to firms in lower-impact sectors like technology. They argue that heightened regulatory scrutiny and investor pressure in high-risk sectors drive firms to adopt more comprehensive ESG reporting practices, which in turn improves their market liquidity and financial performance.

Dhaliwal et al. (2011) examine the role of voluntary ESG disclosures and find that firms that voluntarily disclose sustainability information before mandatory requirements experience lower cost of equity capital and improved stock liquidity. These findings suggest that voluntary ESG reporting acts as a signal of strong corporate governance and sustainability practices, which enhances investor trust and reduces uncertainty.

ESG Disclosure and Stock Liquidity

Agency Theory mentions that ESG disclosures reduce information asymmetry while Signaling Theory states that ESG disclosures provide signals to investors about firms' sustainable management practices. In high-impact sectors, the transparency resulting from mandatory disclosures is expected to improve liquidity due to reduced uncertainty and better investor trust (Christensen, Hail, & Leuz, 2021; Diamond & Verrecchia, 1991).

Mandatory ESG disclosures represent a subset of corporate reporting that focuses on non-financial information related to a firm's environmental impact, social responsibility, and governance structures. These disclosures provide investors with insights into how firms manage risks that are not captured in traditional financial reports, such as climate change, labor practices, and corporate governance (Ioannou & Serafeim, 2019). By mandating that firms disclose this information, regulators aim to reduce the opacity around sustainability-related risks, thereby lowering information asymmetry and improving market liquidity.

Stock liquidity refers to the ease with which a firm's shares can be bought or sold in the market without causing significant changes in price. High liquidity is generally desirable as it reduces transaction costs and minimizes the price impact of trades, making a stock more attractive to investors (Amihud, 2002). A wealth of empirical evidence has demonstrated that corporate disclosures enhance stock liquidity by reducing

information asymmetry between firms and investors (Diamond & Verrecchia, 1991). Firms that provide comprehensive, high-quality disclosures enable investors to make more informed decisions, which reduces uncertainty and fosters greater trading activity, ultimately improving liquidity (Leuz & Wysocki, 2016).

The pronounced effects of mandatory ESG disclosures on stock liquidity are particularly evident in high-impact sectors such as energy, mining, and manufacturing. Firms operating in these industries are often subject to higher levels of scrutiny due to their significant environmental footprints and the social risks associated with their operations. For example, energy companies face substantial risks related to climate change, regulatory shifts in carbon emissions policies, and public pressure to transition toward renewable energy sources. Similarly, mining and manufacturing firms are heavily scrutinized for their impact on natural resources, pollution, and labor practices (Ioannou & Serafeim, 2019; Grewal et al., 2019).

Studies show that firms in these sectors that provide high-quality ESG disclosures experience greater liquidity benefits than firms in lower-impact sectors. For example, Ioannou and Serafeim (2019) find that firms in environmentally sensitive industries experience a stronger market reaction to mandatory sustainability reporting, as investors place a higher value on the information provided. The transparency around how these firms are addressing regulatory and environmental risks reduces the uncertainty that investors face, leading to greater trading volumes and narrower bid-ask spreads.

H1: Mandatory ESG disclosures lead to long-term improvements in stock liquidity, with more pronounced effects in high-impact sectors such as energy, mining, and manufacturing.

ESG Disclosure and Financial Performance

Legitimacy Theory and Stakeholder Theory state that firms use ESG disclosures to legitimize their actions in the eyes of stakeholders and align with societal expectations. As firms improve their reputation and mitigate risks, they attract long-term investors and enhance financial performance (Freeman, 1984; Suchman, 1995).

Stakeholder theory posits that firms must manage relationships with a broad array of stakeholders, including investors, employees, customers, and the broader community. By disclosing ESG information, firms demonstrate their commitment to sustainable practices, social responsibility, and strong governance, which can foster better relationships with stakeholders. Legitimacy theory further suggests that firms use ESG disclosures to legitimize their activities and signal their alignment with societal values and regulatory norms. In doing so, they reduce the risks of regulatory penalties, reputational damage, and social disapproval, all of which can have direct impacts on financial performance (Ioannou & Serafeim, 2019; Suchman, 1995).

Moreover, legitimacy theory suggests that firms in these high-risk sectors use ESG disclosures to align with societal expectations and gain approval from regulators, investors, and the public (Suchman, 1995). By disclosing how they manage environmental and social risks, firms can legitimize their operations and reduce the risk of regulatory intervention or reputational harm, both of which can have negative financial consequences. As a result, firms in these sectors that are subject to mandatory ESG disclosure requirements are expected to experience greater improvements in financial performance compared to firms in lower-risk

sectors.

A growing body of empirical research supports the notion that mandatory ESG disclosures lead to improvements in long-term financial performance. Ioannou and Serafeim (2019) find that firms subject to mandatory sustainability reporting tend to experience significant improvements in firm value and profitability. These improvements arise because mandatory disclosures reduce information asymmetry between firms and their stakeholders, particularly investors, enabling better risk assessment and valuation (Diamond & Verrecchia, 1991).

The impact of mandatory ESG disclosures on financial performance is expected to be more pronounced in sectors that are exposed to high environmental and social risks. Industries such as energy, mining, chemicals, and manufacturing face unique challenges due to their significant environmental footprints, reliance on natural resources, and exposure to regulatory scrutiny. In these sectors, environmental and social risks are material to both operational continuity and financial performance (Ioannou & Serafeim, 2019).

H2: Firms that are subject to mandatory ESG disclosure experience long-term improvements in financial performance, particularly in sectors with high environmental and social risks.

ESG Disclosure, Stock Liquidity, and Financial Performance

Signaling Theory suggests that firms voluntarily disclose ESG information to differentiate themselves from competitors by signaling good governance and proactive sustainability practices (Spence, 1973). These firms, having already reduced information asymmetry, are likely to see fewer additional benefits from mandatory ESG disclosures.

Firms that voluntarily disclosed ESG information prior to mandatory regulations did so to signal their commitment to sustainability, corporate governance, and social responsibility. According to signaling theory (Spence, 1973), firms use voluntary disclosures as a tool to differentiate themselves from competitors and attract investors who are particularly focused on sustainability metrics. By voluntarily disclosing ESG information, these firms have already taken steps to reduce information asymmetry, and as a result, they are likely to have already captured much of the liquidity and financial performance benefits that result from improved transparency.

Information asymmetry theory mentions that one of the primary reasons for corporate disclosure is to reduce the imbalance of information between firms and investors. Investors rely on comprehensive disclosures to assess risks and make informed decisions (Diamond & Verrecchia, 1991). ESG disclosures, in particular, provide critical insights into a firm's long-term sustainability risks, governance practices, and social responsibilities—factors that are increasingly important in the evaluation of firm performance.

Legitimacy theory (Suchman, 1995) suggests that firms that voluntarily disclose ESG information do so to align themselves with societal expectations and stakeholder norms. These firms have already gained legitimacy by demonstrating their commitment to sustainability and corporate governance. As a result, they

are less likely to experience significant improvements in financial performance when mandatory disclosure regulations are introduced, as they have already accrued the benefits of stakeholder trust and market legitimacy.

Firms that voluntarily disclosed ESG information before the imposition of mandatory requirements are expected to experience smaller marginal improvements in stock liquidity because these firms have already provided the market with significant information about their sustainability practices. Investors in these firms have likely already factored this information into their trading decisions, leading to higher pre-existing liquidity levels. In contrast, firms that did not previously engage in voluntary ESG reporting are likely to see more substantial improvements in liquidity following the introduction of mandatory disclosures, as these firms' new transparency reduces information asymmetry for the first time.

Empirical research supports this view. Barth et al. (2017) find that firms that provide high-quality integrated reporting—including both financial and non-financial information—experience improvements in stock liquidity. However, for firms that have already provided voluntary ESG disclosures, the incremental liquidity benefits of additional mandatory reporting are likely to be smaller because the market has already absorbed the sustainability information. Furthermore, Bozkurt (2022) argues that the marginal benefits of ESG disclosures tend to diminish for firms that have already established a strong reputation for transparency through voluntary disclosures, as the introduction of mandatory reporting provides little new information to the market.

Besides stock liquidity, financial performance is another critical area where mandatory ESG disclosures are expected to have a positive impact. Improved financial performance is often linked to better operational efficiency, reduced risk, and enhanced reputation, all of which can result from greater transparency around ESG practices (Ioannou & Serafeim, 2019).

However, firms that voluntarily disclosed ESG information before mandatory regulations are expected to experience smaller marginal improvements in financial performance because they have already benefited from the reputational and operational advantages associated with transparency. These firms have likely already captured the benefits of enhanced investor trust, reduced risk premiums, and improved stakeholder relationships. For instance, Dhaliwal et al. (2011) show that firms that voluntarily disclose ESG information experience reductions in the cost of equity capital, leading to better financial performance. Since these firms have already realized the benefits of lower capital costs and enhanced reputation, the introduction of mandatory ESG disclosures is unlikely to result in significant additional improvements.

H3: Firms that voluntarily disclosed ESG information prior to the introduction of mandatory disclosure regulations experience smaller marginal improvements in stock liquidity and financial performance.

Research Methodology

Research Design

This study uses a quantitative research design using panel data to investigate the effects of mandatory ESG disclosures on stock liquidity and financial performance. The research employs a causal comparative design with a difference-in-differences (DiD) approach, which allows for the measurement of the impact of mandatory ESG disclosure by comparing firms before and after the implementation of such regulations. The study utilizes a longitudinal dataset from Eikon, which contains financial, stock market, and ESG data for a broad range of firms across multiple countries and sectors.

Variables Measurement

Dependent Variable

Stock Liquidity

“Bid-Ask Spread”: A widely used measure of stock liquidity, representing the difference between the bid and ask prices. A smaller spread indicates higher liquidity (Amihud, 2002). This stratified approach ensures that variations in ESG disclosure practices and their effects across different industries and geographies are captured, providing a more nuanced understanding of the phenomena under study (Dhaliwal et al., 2011; Ioannou & Serafeim, 2019).

Financial Performance:

Return on Assets (ROA): A measure of profitability that indicates how efficiently a firm is using its assets to generate profits.

Return on Equity (ROE): Indicates the profitability of a firm in relation to shareholders' equity.

Net Income: Total profit of the firm, representing overall financial performance.

Independent Variables

Mandatory ESG Disclosure: A binary variable indicating whether a firm is subject to mandatory ESG disclosure requirements. For firms in countries or sectors where ESG disclosures are legally required, the value is 1; otherwise, 0 (Ioannou & Serafeim, 2019).

Voluntary ESG Disclosure: A binary variable that captures whether a firm voluntarily disclosed ESG information prior to the introduction of mandatory reporting requirements (Dhaliwal et al., 2011).

Data Collection and Analysis

The data over a 10-year period (2010-2020) will be collected from Eikon, a comprehensive financial database that provides ESG metrics, financial performance data, and stock market information. These databases are widely used in academic research for gathering financial data due to their extensive coverage and accuracy

(Leuz & Wysocki, 2016). This longitudinal approach helps analyze trends and identify long-term effects. The sample also includes companies from both high-risk sectors (e.g., energy, chemicals) and low-risk sectors (e.g., technology, financial services).

Econometric modeling such as fixed-effects model, random-effects models, and a difference-in-differences (DiD) approach are employed to discover the causal impact of ESG disclosures on stock liquidity and performance. Fixed-effects or random-effects models will be applied to account for time-invariant characteristics and firm-specific heterogeneity (Baltagi, 2008). The choice between fixed and random effects will be determined based on the Hausman test. The DiD model is used to estimate the effect of mandatory ESG disclosures by comparing firms subject to the regulation (treatment group) to firms not subject to the regulation (control group), both before and after the regulation was implemented (Angrist & Pischke, 2008; Bertrand, Duflo, & Mullainathan, 2004).

Conclusion

Environmental, Social and Governance (ESG) factors have become a focal point of corporate reporting frameworks in recent years, reflecting growing demands from investors, regulators and society for greater transparency on sustainability issues. ESG disclosures, which provide non-financial information on a firm's environmental practices, social responsibility, and governance structures, have been increasingly mandated by governments worldwide as part of efforts to address the informational asymmetry between firms and investors. Such disclosures are intended to enhance integrity, improve market efficiency and support stakeholders in making better decisions (Christensen, Hail & Leuz, 2021). The rise of mandatory ESG reporting has marked a significant shift in corporate governance, incorporating non-financial considerations into the broader accounting and reporting landscape.

The current study attempts to build a research framework for examining the long-term effects of mandatory ESG disclosures on stock liquidity, with a focus on sectoral differences and the role of enforcement mechanisms. Using a comprehensive dataset of firms across multiple countries, the study investigates how different sectors respond to ESG mandates and how voluntary disclosures interact with mandatory reporting requirements. By adopting a comparative approach, this research seeks to provide nuanced insights into the complex dynamics of ESG reporting and its long-term implications for firms, investors, and regulators.

References

- Amihud, Y. (2002). Illiquidity and Stock Returns: Cross-Section and Time-Series Effects. *Journal of Financial Markets*, 5(1), 31-56.
- Angrist, J. D., & Pischke, J. S. (2008). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press.
- Baltagi, B. H. (2008). *Econometric Analysis of Panel Data* (4th ed.). Wiley.
- Barth, M. E., Cahan, S. F., Chen, L., & Venter, E. R. (2017). The Economic Consequences Associated with

Integrated Reporting Quality: Capital Market and Real Effects. *Accounting, Organizations and Society*, 62, 43-64.

Bates, T. W., Kahle, K. M., & Stulz, R. M. (2009). Why Do U.S. Firms Hold So Much More Cash Than They Used To? *The Journal of Finance*, 64(5), 1985-2021.

Baumol, W. J. (1952). The Transactions Demand for Cash: An Inventory Theoretic Approach. *The Quarterly Journal of Economics*, 66(4), 545-556.

Berg, F., Kölbel, J., & Rigobon, R. (2022). Aggregate Confusion: The Divergence of ESG Ratings. *The Review of Financial Studies*, 35(3), 1350-1385.

Bertrand, M., Duflo, E., & Mullainathan, S. (2004). How Much Should We Trust Differences-in-Differences Estimates? *The Quarterly Journal of Economics*, 119(1), 249-275.

Bozkurt, I. (2022). The Effects of ESG Disclosures on Firm Value and Stock Liquidity: Evidence from Emerging Markets. *Journal of Corporate Finance*, 72, 101-118.

Cheng, B., Ioannou, I., & Serafeim, G. (2014). Corporate Social Responsibility and Access to Finance. *Strategic Management Journal*, 35(1), 1-23.

Christensen, H. B., Hail, L., & Leuz, C. (2021). Mandatory CSR and Sustainability Reporting: Economic Analysis and Literature Review. *Review of Accounting Studies*, 26(3), 1176-1248.

Dai, R., Lau, C. K. M., & Zhang, Z. (2021). The Trade War, Market Sentiment, and Stock Market Volatility. *International Review of Financial Analysis*, 77, 101841.

Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, Liquidity, and the Cost of Capital. *The Journal of Finance*, 46(4), 1325-1359.

Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting. *The Accounting Review*, 86(1), 59-100.

Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The Impact of Corporate Sustainability on Organizational Processes and Performance. *Management Science*, 60(11), 2835-2857.

Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*. Cambridge University Press.

Grewal, J., Riedl, E. J., & Serafeim, G. (2019). Market Reaction to Mandatory Nonfinancial Disclosure. *Management Science*, 65(7), 3061-3084.

Guan, L., Jiang, X., & Yang, J. (2020). The Role of Informal Institutions in Corporate Governance: Evidence from Cross-Country Studies. *Journal of International Business Studies*, 51(5), 633-655.

Ioannou, I., & Serafeim, G. (2019). The Consequences of Mandatory Corporate Sustainability Reporting. *Management Science*, 65(10), 4451-4471.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3(4), 305-360.

Khan, M., Serafeim, G., & Yoon, A. (2016). Corporate Sustainability: First Evidence on Materiality. *The Accounting Review*, 91(6), 1697-1724.

Leuz, C., & Wysocki, P. D. (2016). The Economics of Disclosure and Financial Reporting Regulation: Evidence and Suggestions for Future Research. *Journal of Accounting Research*, 54(2), 525-622.

Nguyen, M., Tran, K., & Ho, B. (2020). Trade Wars, Corporate Risk, and Cash Holdings: Evidence from Global Supply Chains. *Journal of Corporate Finance*, 64, 101647.

Opler, T., Pinkowitz, L., Stulz, R., & Williamson, R. (1999). The Determinants and Implications of Corporate Cash Holdings. *Journal of Financial Economics*, 52(1), 3-46.

Refinitiv Eikon. (n.d.). *User Guide for ESG Data and Financial Metrics*. Retrieved from <https://www.refinitiv.com>

Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics*, 87(3), 355-374.

Suchman, M. C. (1995). Managing Legitimacy: Strategic and Institutional Approaches. *Academy of Management Review*, 20(3), 571-610.

Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data* (2nd ed.). MIT Press.

IDENTIFICATION OF LIMITATIONS IS FUNDAMENTAL TO BRING ABOUT IMPROVEMENTS IN JOB PERFORMANCES

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Abstract

Within the course of putting into operation, various types of job duties within organizations, there are occurrence of limitations. The various areas in terms of which limitations takes place are, job duties, methods, procedures, strategies, approaches, infrastructure, amenities, facilities, materials, technologies and the overall working environment. The members need to identify the limitations. They need to generate information in terms of the causes. There are various types of causes that are utilized to identify the limitations in an appropriate manner. After the causes are identified, individuals need to put into operation the techniques to alleviate them. Furthermore, they need to be prevented from assuming a major form. This task can be put into practice on one's own as well as through obtaining support and help from the other members. All the members are required to work in co-ordination in putting into operation this task in a well-ordered and disciplined manner. The job duty of identification of limitations can be carried out in less or more amount of time. But one of the important aspects that needs to be taken into account is, positivity needs to be reinforced in the implementation of all factors that are utilized to identify the limitations. Therefore, it is well-understood, identification of limitations is fundamental to bring about improvements in job performances. The main concepts that are taken into account in this research paper are, understanding the causes behind the occurrence of limitations within employment settings, identification of limitations within employment settings and identification of limitations have proven to be advantageous to the individuals in enhancing their career prospects.

Keywords: *Career Prospects, Employment Settings, Identification, Information, Job Duties, Limitations, Organization*

It is comprehensively understood that within the course of implementation of job duties, all individuals, irrespective of their occupations, communities, and socio-economic backgrounds aspire to be successful. But there are occurrence of limitations. When the limitations are experienced, they should be identified in an appropriate manner. After they are identified, measures need to be put into operation to alleviate them. Furthermore, they should be prevented from assuming a major form. The limitations need to be prevented from having unfavourable effects on the implementation of job duties (Hug, 2021). The individuals within the organizations, irrespective of their job positions need to be informative in terms of measures and approaches. In other words, they should possess adequate knowledge in terms of their tasks and functions.

When recruitment of individuals takes place, then also it needs to be ensured, they possess the essential educational qualifications, competencies and abilities. The possession of inadequate information is regarded as one of the critical limitations. Therefore, the individuals need to put emphasis upon up-gradation of knowledge, skills and abilities throughout their jobs.

In all types of organizations, i.e. production, manufacturing, services, educational institutions, financial institutions and so forth, the individuals need to be healthy physically and psychologically. When they are to carry out manual job duties, they need to be healthy. When they experience various types of health problems and illnesses, they do give rise to impediments within the course of putting into practice various tasks and activities. When the individuals are wholeheartedly determined towards the implementation of job duties, they will put emphasis on promoting good health from the physical as well as psychological perspectives (Jacowski, 2021). Furthermore, they will not let health problems and illnesses to give rise to any impediments. The individuals need to create a balance between personal and professional lives. Apart from implementation of professional job duties, the individuals also have job duties and responsibilities to carry out in their personal lives. Hence, they need to take out sufficient time for all of them. Therefore, health problems and illnesses and inability to create a balance between personal and professional lives are regarded as vital limitations, which have been experienced by the members within the course of implementation of job duties.

The individuals need to put emphasis on honing of time management skills. These skills will enable the individuals to set priorities to the job duties. The job duties, which are more important are carried out first, whereas, the tasks, which are regarded as less important are given second preference. Some of the job duties are less time consuming, whereas, others are more time consuming. In some cases, when the employees are engaged in job duties, which are more time consuming, they will not be able to take out sufficient amount of time for other tasks. Hence, it is indispensable to hone time management skills to take out time for all job duties. The individuals in some cases cannot carry out job duties on their own. They need to work in co-ordination with others, i.e. supervisors or colleagues. When others are not available on time and there is lack of communication with them, it is regarded as a limitation within the course of implementation of job duties. Therefore, inability to implement time management skills and lack of effective communication processes are crucial limitations, which have been experienced by the members of the organizations.

Understanding the Causes behind the Occurrence of Limitations within Employment Settings

It is apparently understood that within the course of implementation of job duties and responsibilities within various types of employment settings, the individuals are required to experience limitations. These are regarded as an integral part of the professional lives of the individuals. When these are experienced, one of the important points that need to be taken into account is, the individuals should not feel overwhelmed. In other words, they should have faith in themselves and be wholeheartedly committed towards the implementation of job duties and achievement of organizational goals. The members need to form positive viewpoints in terms of various aspects of the organization and individuals with whom they are working with. Furthermore, they need to develop motivation towards their job duties and responsibilities. It is necessary for all the members to understand the causes behind the occurrence of limitations within employment settings (What are the Drawbacks of Delta Modulation, 2013). These are, lack of knowledge, competencies

and abilities; occurrence of stressful terms and relationships with others; availability of inadequate technologies and materials; increase in the rate of absenteeism and dissatisfaction within the working environment. These are stated as follows:

Lack of Knowledge, Competencies and Abilities

The individuals within all types of organizations, irrespective of their job positions need to put emphasis on honing of knowledge, competencies and abilities. Whether the workforce is engaged in the production and manufacturing processes, or are working on assignment and projects or are engaged in marketing and sales of their products and services, they need to augment their knowledge, competencies and abilities. They need to make use of various sources, i.e. books, articles, reports, projects, other reading materials, technologies and internet to augment their knowledge and understanding in terms of various subjects, concepts and factors. The honing of knowledge needs to take place throughout the job duties of the individuals. When individuals do not possess adequate information, it is a major limitation within the course of implementation of job duties and generation of desired outcomes. The individuals are required to possess adequate knowledge in terms of their tasks and functions. Therefore, lack of knowledge, competencies and abilities is regarded as one of the significant causes behind the occurrence of limitations within employment settings.

Occurrence of Stressful Terms and Relationships with Others

The individuals in some cases cannot carry out job duties on their own. They need to work in co-ordination with others, i.e. supervisors or colleagues. When they are uninformed, they need to acquire information in terms of methodologies, techniques and approaches. Furthermore, they need to obtain solutions to various types of problems. Hence, it is of utmost significance for the individuals to form cordial and amiable terms and relationships with others. When there is occurrence of stressful terms and relationships with others it is regarded as a limitation within the course of implementation of job duties. As a consequence, the individuals will experience difficulties within the course of implementation of job duties and achievement of desired goals. When the individuals are experiencing problems within the course of communicating with others, it is regarded as a limitation within the course of putting into practice various tasks and activities. Therefore, occurrence of stressful terms and relationships with others is one of the important causes behind the occurrence of limitations within employment settings.

Availability of Inadequate Technologies and Materials

In the present existence, various types of technologies are utilized in putting into operation different job duties and functions. On the other hand, material resources are tools, devices, machinery and equipment. The individuals in leadership positions and the other members are required to pay attention that these are available. These are made use of in the implementation of job duties, generation of desired outcomes and achievement of the organizational objectives. Apart from making sure that these are available, the individuals need to pay attention towards their management throughout their jobs. All the members of the organization, irrespective of their job positions in the hierarchy need to be well-versed in terms of methods and approaches that are needed to manage them. In the training and development programs, the workforce is imparted with information to make use of technologies and materials in a satisfactory manner. Hence, when the individuals are unable to make technologies and materials available, it is regarded as a limitation within the course of generation of desired outcomes. Therefore, availability of inadequate technologies and

materials is an indispensable cause behind the occurrence of limitations within employment settings.

Increase in the Rate of Absenteeism

The individuals normally give preference to their professional job duties over personal job duties. But they in some cases are overwhelmed by job duties and responsibilities in personal lives as well that they are required to take leave from work. Hence, this causes an increase in the rate of absenteeism. Another reason for this is, in some cases, the individuals experience accidents within employment settings. These may be experienced in a major or in a minor form. When these have unfavourable effects upon the capabilities of the workforce, as a consequence, there is an increase in the rate of absenteeism. When the accidents have major effects upon their health conditions, they may have to take leave from work for a long period of time. Hence, increase in the rate of absenteeism is regarded as a limitation within the course of putting into operation various job duties and generation of desired outcomes. Therefore, in all types of organizations, increase in the rate of absenteeism is a crucial cause behind the occurrence of limitations within employment settings.

Dissatisfaction within the Working Environment

Within the working environment in all types of organizations, there are number of factors that causes dissatisfaction among individuals. All the individuals, irrespective of their job positions in the hierarchy experience them. These are related to implementation of job duties and responsibilities; utilization of methods and approaches; lack of availability of infrastructure, amenities and facilities; dealing with demanding individuals; being overloaded with work; lack of modern, scientific and innovative methods; lack of adequate grievance redresser procedures; unawareness in terms of time management skills; inability to make wise and productive decisions; inability to cope with problems and difficulties in an adequate manner; lack of knowledge, competencies and abilities and lack of development of mutual understanding with others. When these factors cause dissatisfaction among individuals, it is regarded as one of the major limitations within the course of putting into operation various job duties, achievement of organizational goals and enhancement of career prospects of the individuals. Therefore, it can be stated, dissatisfaction within the working environment is a vital cause behind the occurrence of limitations within employment settings.

Identification of Limitations within Employment Settings

It is apparently understood that within the course of implementation of job duties and responsibilities within various types of employment settings, the individuals are usually committed. The reason being, they work diligently to acquire employment opportunities. When they get recruited and selected within the organizations, they have the primary goals of doing well in their job duties, achieving organizational goals and leading to up-gradation of the overall structure of the organizations. In order to achieve these goals, they need to identify the limitations. After the limitations are identified, the members of the organization need to be well-equipped in terms of strategies of alleviating them (Workplace Safety and Health Uses and Limitations, 2021). This task can be carried out on an individual basis as well as through working in co-ordination and integration with others. The employers and the employees and colleagues need to work in collaboration with each other. The task of curbing limitations can be manageable as well as there are occurrence of difficulties. The various types of limitations within employment settings are stated as follows:

Possession of Inadequate Information

The individuals within the organizations, irrespective of their job positions need to be informative in terms of methods and approaches. Whether the workforce is engaged in the production of products, or are working on assignment and projects or are marketing their products, they need to be well-equipped in terms of methods and approaches. They need to make use of various sources, i.e. books, articles, reports, projects, technologies and internet to augment their knowledge and understanding in terms of various concepts and factors. When they do not possess adequate information, it is a major limitation within the course of implementation of job duties and generation of desired outcomes. The individuals are required to possess adequate knowledge in terms of their tasks and functions. When recruitment of individuals takes place, then also it needs to be ensured, they possess the essential educational qualifications, competencies and abilities. Hence, the individuals need to put emphasis upon up-gradation of knowledge, skills and abilities throughout their jobs. Therefore, it is well-understood, possession of inadequate information is regarded as one of the vital limitations within employment settings.

Utilization of Traditional Methods and Approaches

In the present existence, in all types of organizations, with advancements taking place and with the advent of modernization and globalization, it is necessary to make use of modern, scientific and innovative methods within the course of putting into operation job duties. Utilization of traditional methods and approaches is regarded as a limitation within the course of implementation of job duties and achievement of desired goals. In some organizations, there are utilization of traditional methods and approaches. The individuals are making use of these methods in the implementation of various types of job duties. These may be production of goods, services, working on assignments, projects and so forth. One of the major limitations that is experienced is, the tasks are carried out in more amount of time. In other words, the utilization of traditional methods and approaches facilitate the implementation of tasks in a less efficient manner as compared to utilization of modern, scientific and innovative methods. The employees usually do not make use of machines, tools and equipment. They carry out their job duties manually. Therefore, utilization of traditional methods and approaches are one of the crucial limitations within employment settings.

Health Problems and Illnesses

All the individuals, irrespective of their job positions need to be healthy physically and psychologically. When they are to carry out manual job duties, they need to be healthy. When they experience various types of health problems and illnesses, they do give rise to impediments within the course of putting into practice various tasks and activities. In some cases, the workforce experiences accidents within employment settings. These may be experienced in a major or in minor form. Hence, there should be establishment of workers compensation programs. When the individuals are wholeheartedly determined towards the implementation of job duties, they will put emphasis on promoting good health from the physical as well as psychological perspectives. Furthermore, they will not let health problems and illnesses to give rise to any impediments. But when these are experienced in a major form, the workforce may have to take leave from work. In cases of permanent injuries, it is a possibility that they may not get back to work. But they are given compensation. Therefore, health problems and illnesses is a significant limitation within employment settings.

Inability to create a balance between Personal and Professional Lives

The individuals need to create a balance between personal and professional lives. Apart from

implementation of professional job duties, the individuals also have job duties and responsibilities to carry out in their personal lives. Hence, they need to take out sufficient time for all of them. The research studies have indicated that individuals usually give preference to their professional job duties. When they are to carry out their office jobs, they will not attend a family function. On the other hand, if they have to take an ailing family member to a medical centre, in such cases, they may have to take leave from office. This signifies that individuals may give preference to professional as well as personal job duties. When the individuals are unable to create a balance between personal and professional lives, it is a limitation. This causes stress among them. The reason being, the individuals will not be able to take out sufficient amount of time for all tasks and activities. Therefore, inability to create a balance between personal and professional lives is an important limitation within employment settings.

Inability to implement Time Management Skills

The individuals need to put emphasis on honing of time management skills. These skills will enable them to set priorities to the job duties. The job duties, which are more important are carried out first, whereas, the tasks, which are regarded as less important are given second preference. Some of the job duties are less time consuming, whereas, others are more time consuming. In some cases, when the employees are engaged in job duties, which are more time consuming, they will not be able to take out sufficient amount of time for other tasks. Hence, it is indispensable to hone time management skills to take out sufficient amount of time for all job duties. When the individuals are not able to take out sufficient amount of time for all tasks and activities, it is regarded as one of the limitations, which gives rise to psychological problems of anger and stress among individuals. The individuals usually feel frustrated, when they need to complete a task and it is left incomplete. Therefore, inability to implement time management skills is an essential limitation within employment settings.

Lack of Effective Communication Processes

The individuals in some cases cannot carry out job duties on their own. They need to work in co-ordination with others, i.e. supervisors or colleagues. When they are unaware, they need to acquire information in terms of methods and strategies. Furthermore, they need to provide solutions to various problems. Hence, it is of utmost significance for the individuals to put into operation effective communication processes. When others are not available on time and there is lack of communication with them, it is regarded as a limitation within the course of implementation of job duties. As a consequence, the individuals will experience difficulties within the course of implementation of job duties and achievement of desired goals. When the individuals are working in collaboration and integration on the project, they need to ensure, they take out sufficient amount of time to meet and discuss with each other. Communication processes are facilitated through the usage of technologies as well. Furthermore, the individuals are required to provide factual information. Hence, when these do not take place in an adequate manner, it is a limitation. Therefore, lack of effective communication processes is a meaningful limitation within employment settings.

Inability to upgrade Problem-Solving Skills

Within the course of implementation of job duties, achievement of organizational goals and leading to up-gradation of the overall structure of the organizations, there are occurrence of various types of problems. These may be experienced in a major or in a minor form. The various factors in terms of which problems are

experienced are, job duties, responsibilities, methods, procedures, resources, infrastructure, amenities, facilities, machines, technologies and so forth. The various types of problems can be solved on one's own as well as through obtaining support and assistance from employers, supervisors or colleagues. The individuals need to put emphasis on honing of problem-solving skills throughout their jobs. The inability to upgrade problem-solving skills is a limitation. The reason being, when the problems will remain unsolved, the individuals will experience difficulties within the course of implementation of job duties, generation of desired outcomes and achievement of the organizational objectives. Hence, when the individuals are unable to upgrade problem-solving skills, it is regarded as a limitation within the course of generation of desired outcomes. Therefore, inability to upgrade problem-solving skills is a notable limitation within employment settings.

Inappropriate Decision Making Processes

The decisions are regarded as an integral part of the professional lives of the individuals. These need to be made in terms of various aspects, i.e. job duties, responsibilities, methods, procedures, resources, infrastructure, amenities, facilities, machines, technologies and the overall structure of the organizations. The individuals in leadership positions are vested with the authority of making decisions. But in some cases, they seek ideas and suggestions from the other individuals as well. The discussion meetings are called, where the individuals give their ideas and suggestions. When the decisions are made, it needs to be ensured, they prove to be favourable to the employees as well as the organizations as a whole. The analysis needs to be conducted in terms of the alternatives to make wise and productive decisions. In some cases, the decisions are made in less amount of time, whereas, in other cases, they are time consuming. Hence, when the individuals are unable to put into operation the decision making processes in an appropriate manner, it is regarded as a limitation within the course of achievement of desired objectives. Therefore, inappropriate decision making processes is a worthwhile limitation within employment settings.

Inadequate Management of Resources

The various types of resources need to be managed in an appropriate manner. These are, human, financial, technical and material. Human resources are the personnel. They utilise their knowledge within the course of implementation of job duties. Financial resources are the monetary resources. These are utilized to put into operation various tasks and activities. Technical resources are the various types of technologies that are utilized in putting into operation various tasks and activities. Material resources are tools, devices, machinery and equipment. The individuals in leadership positions and the other members are required to pay attention towards management of resources. These are made use of in the implementation of job duties, generation of desired outcomes and achievement of the organizational objectives. The individuals need to pay attention towards their management throughout their jobs. Hence, when the individuals are unable to manage these resources in an adequate manner, it is regarded as a limitation within the course of generation of desired outcomes. Therefore, inadequate management of resources is a limitation within employment settings, which has had unfavourable effects upon the overall structure of the organizations.

Experiencing of Difficulties in Manual Job Duties

Within the course of implementation of manual job duties, there are occurrence of difficulties. Difficulties give rise to impediments within the course of putting into practice various types of job duties and activities.

In some cases, the workforce experiences accidents within employment settings. Hence, there should be establishment of workers compensation programs (Term Disability, 2016). Whereas, in other cases, there are occurrence of problems in completing job duties within the required time frame. When the individuals are wholeheartedly determined towards the implementation of job duties, they will put emphasis on augmenting their knowledge and understanding in terms of pioneering methods. Furthermore, they will not let any types of problems and difficulties to give rise to any impediments. But when the difficulties are experienced and have unfavourable effects, the workforce may have to put in efforts to their best abilities to prevent them from assuming a major form. The individuals in leadership positions are required to put in efforts to ensure, there is availability of resources. Furthermore, they need to provide solutions to various problems. Therefore, experiencing of difficulties in manual job duties is a limitation within employment settings, which have proven to be disadvantageous to the employees engaged in production processes.

Identification of Limitations have proven to be Advantageous to the Individuals in enhancing their Career Prospects

Acquisition of employment opportunities is regarded as one of the major aims of all individuals, irrespective of their communities, categories and backgrounds. These are fundamental to lead to enhancement of one's career prospects. The individuals get enrolled in educational institutions, acquire education, augment their knowledge, skills and abilities, so they can get engaged in employment opportunities. The employment opportunities are of various types. They are classified under the categories of blue collar and white collar jobs. The educational qualifications, skills, abilities, aptitude, family background and location of the individuals are the main factors that enable the individuals to acquire employment opportunities. Within the course of implementation of job duties within various types of employment settings, there are occurrence of limitations. The causes behind the occurrence of limitations should be identified in a satisfactory manner. Furthermore, measures need to be put into operation to alleviate them. These need to be prevented from assuming a major form. Therefore, it is well-understood, identification of limitations have proven to be advantageous to the individuals in enhancing their career prospects.

The individuals within the organizations, irrespective of their job positions need to be informative in terms of measures and approaches. In other words, they should possess adequate knowledge in terms of their tasks and functions. When recruitment of individuals takes place, they are required to go through training and development programs. In these programs, they are provided with information in terms of various aspects of the organizations. Furthermore, they are trained in terms of methods to do well in their job duties. Within the course of implementation of job duties as well, the individuals are required to get enrolled in these programs. This is particularly when they are required to augment their knowledge and understanding in terms of modern, scientific and innovative methods. The individuals also identify the limitations and provide solutions to them. When they will do well in their jobs, they will be able to enhance their career prospects. Therefore, augmenting knowledge regarding modern, scientific and innovative methods will contribute in identification of limitations. This aspect have proven to be advantageous to the individuals in enhancing their career prospects.

In enhancing career prospects and in identification of limitations, the individuals need to be informative in terms of various aspects. These are, being well-versed in terms of job duties and responsibilities; being

informative in terms of modern and innovative methods and procedures; developing motivation towards the implementation of job duties; augmenting knowledge, competencies and abilities; implementing time management skills; honing analytical, critical thinking and problem-solving skills; making available infrastructure, amenities and facilities; managing resources in an adequate manner; being well-versed with usage of technologies and materials; making wise and productive decisions; coping with various problems in an adequate manner; inculcating the traits of morality, ethics, diligence and resourcefulness and forming cordial and amiable terms and relationships with others. Through reinforcement of all these aspects, the individuals will identify the limitations and provide effective solutions to them. When they will curb the limitations, they will be able to enhance their career prospects. Therefore, it can be stated that identification of limitations in a well-ordered manner will render an important contribution in leading to enhancement of career prospects.

Conclusion

Within the course of implementation of job duties, there are occurrence of limitations. These should be identified in an appropriate manner. Furthermore, measures need to be put into operation to alleviate them. The causes behind the occurrence of limitations within employment settings are, lack of knowledge, competencies and abilities; occurrence of stressful terms and relationships with others; availability of inadequate technologies and materials; increase in the rate of absenteeism and dissatisfaction within the working environment. The various types of limitations within employment settings are, possession of inadequate information, utilization of traditional methods and approaches, health problems and illnesses, inability to create a balance between personal and professional lives, inability to implement time management skills, lack of effective communication processes, inability to upgrade problem-solving skills, inappropriate decision making processes, inadequate management of resources and experiencing of difficulties in manual job duties. Identification of limitations have proven to be advantageous to the individuals in enhancing their career prospects. Finally, it can be stated, identification of limitations in a timely manner may contribute significantly in promoting well-being of the individuals and the overall structure of the organizations.

Bibliography

Hug, C. (2021). The Limitations for Women in the Workplace. Business Because. Retrieved December 23, 2021 from amp.businessbecause.com

Jacowski, T. (2021). Overcome your Job Limitations and Enjoy a Rewarding Career. Retrieved December 23, 2021 from streetdirectory.com

Term Disability News & Information. (2016). Riemer & Associates. Retrieved December 23, 2021 from riemerhess.com

What are the Drawbacks of Delta Modulation and how are they overcome by ADM. (2013). Retrieved December 23, 2021 from ques10.com

Workplace Safety and Health Uses and Limitations. (2021). Ministry of Manpower. A Singapore Government Agency Website. Retrieved December 23, 2021 from stats.mom.gov.sg

THE EFFECTS OF CREDIT RISK, LIQUIDITY, AND BANK STABILITY ON BANK PROFITABILITY: EMPIRICAL EVIDENCE FROM VIETNAMESE COMMERCIAL BANKS LISTED ON HOCHIMINH AND HANOI STOCK EXCHANGES

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Abstract

This research aims to examine the effects of credit risk, liquidity, and bank stability on bank profitability of Vietnamese listed commercial banks during the 2010-2023 period. With a focus on 20 listed banks, the study employs the Fixed-Effect Model (FEM) which is the best model for analyzing the sampled financial data collected from the Thomson Reuters EIKON database. The results reveal a notable negative impact of credit risk and bank stability on bank profitability, whereas a positive relationship between liquidity and bank profitability is found in which bank profitability is measured by three proxies: return on equity (ROE), return on asset (ROA), and net interest margin (NIM). Moreover, control variables such as bank size, capital to assets ratio, deposit growth, asset quality, efficiency, income diversity, funding cost, GDP per capita, and inflation rate are also examined to see whether these factors have an effect on bank profitability. Noteworthy, capital to assets ratio, efficiency, and inflation rate are found to significantly impact bank profitability, whereas there is no significant effect of bank size and GDP per capita on bank profitability. The results of other control variables are mixed. Despite contributing some valuable insights, the study acknowledges a limitation of small sample size, highlighting avenues for future research. Recommendations are offered for policy makers, bank managers, and researchers, aiming to inform strategic decision making and guide future investigations into this critical area of study.

Keywords: *Bank profitability, credit risk, liquidity, bank stability, Vietnamese commercial bank*

JEL Classifications: G21, E51, E60

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1. Introduction

The banking sector plays a crucial role in a country's economic development as financial intermediaries, facilitating the transfer of funds between savers and borrowers. An efficient and profitable banking system is essential for economic growth, as demonstrated by the positive relationship between GDP and bank performance highlighted by Demirgüç-Kunt and Huizinga (1999). Effective financial intermediation improves bank profitability (Berger et al., 1997), attracts capital inflows, and enables funding for startups and existing businesses. This not only boosts output, production, and employment but also fosters innovation and competitiveness. Additionally, accessible credit encourages consumer spending and drives economic activities. When banks set appropriate interest rates, businesses can reinvest profits into expansion or large-scale projects like infrastructure and technology, while consumers benefit from affordable financing for essentials like homes, education, and investments. Banks also play a vital role as risk managers, diversifying loan portfolios across sectors and using financial instruments to hedge risks, thereby promoting economic stability. Moreover, by supporting startups and expanding enterprises, banks indirectly reduce unemployment, further contributing to economic development and growth.

Over recent years, the banking industry in Vietnam has faced significant challenges, particularly in 2021, following the severe impacts of the COVID-19 pandemic on all sectors of the economy and society. Amid this context, the Vietnamese commercial banking system has played a dual role: maintaining its operational goals of growth, profitability, and safety while functioning as a financial tool in collaboration with the Government and the State Bank of Vietnam to support customers to overcome difficulties.

By 2023, the banking industry showed considerable improvements. The Capital Adequacy Ratio (CAR) has strengthened, with some banks, such as Techcombank, HDBank, VPBank, VIB, and ACB, achieving the level twice the minimum requirement (Truong, 2024). Many banks are also expected to raise capital to enhance medium- and long-term funding, expand commercial operations, and facilitate the swift recovery of businesses and the economy. However, despite these positive developments, rising bad debt poses a significant challenge. Factors such as a struggling corporate bond market and weak real estate sales have caused a severe cash flow shortage among investors, directly impacting their ability to repay debt. Liquidity issues are also affecting various enterprises, particularly small and medium-sized businesses. Additionally, the risk of bad debt in interest receivables is escalating. For instance, in the second quarter of 2024, Techcombank's interest receivables increased by 38%, Nam A Bank's by 50%, and LPBank's by 21% compared to the beginning of the year (Truong, 2024).

Currently, five banks in Vietnam are under special control: OceanBank, Construction Bank (CB), GPBank, DongABank, and SCB. Among these, SCB presents a more complex restructuring process due to its larger scale. The primary reasons for banks being placed under special control include high bad debt ratios and negative owner capital, which pose a risk to the stability of the entire banking system. To address these

challenges, the State Bank has proposed restructuring measures for weaker banks. Notably, CB Bank, OceanBank, and GPBank—referred to as “zero-dong banks”—will be compulsorily acquired, restructured, and transferred to eligible banking entities. However, as of now, no official announcement has been made regarding which banks will assume control of these struggling institutions (Nguyen, 2023).

Credit risk refers to the possibility that a borrower may default on loan payments, leading to financial losses for lenders, which is directly linked to potential cash flow issues and increased collection costs, which can adversely affect the profitability of banks. According to Accornero et al. (2018), a high prevalence of loan defaults can destabilize the banking sector and, in extreme cases, jeopardize the entire financial system. Non-performing loans (NPLs) diminish banks' interest incomes, exacerbating the negative impact on profitability. Furthermore, lenders charge higher interest rates to compensate for elevated credit risks, which, paradoxically, may increase default likelihood, thus establishing an inverse relationship between credit risk and bank profitability.

Liquidity relates to the ease with which assets can be converted into cash, with cash being the most liquid. In banking, liquidity indicates the ability to meet clients' withdrawal demands. Previous research highlights the positive influence of liquid asset ratios on bank profitability. Studies by Bordeleau & Graham (2010), Ibe (2013), Lartey et al. (2013), Nimer et al. (2013), and Rasul (2013) suggest that banks with adequate liquidity build strong reputations, enhance customer confidence, and attract more deposits and business.

Bank stability refers to a bank's capability to meet its obligations and maintain its financial health, which is crucial for the overall economic health and efficiency of the financial system. Stability fosters confidence among customers, investors, and regulators, which can enhance customer deposits, reduce funding costs, and minimize operational risks. A stable bank is also positioned to capitalize on growth opportunities while maintaining its financial integrity. Conversely, prioritizing profits over stability may lead to risky behaviors that threaten the bank's long-term viability. As noted by Nguyen & Le (2022), a positive relationship exists between bank stability and profitability.

In this study, we examine the effects of credit risk, liquidity, and bank stability on bank profitability of Vietnamese commercial banks listed on Hochiminh and Hanoi stock exchanges during the period from 2010 and 2023. The contribution of our study is that there is no existing study about the effects of credit risk, liquidity, and bank stability on bank profitability of Vietnamese commercial banks. Most prior studies have documented the influence of specific microeconomic, macroeconomic, or industry-specific variables on bank profitability. In addition, they only focus on developed countries where more data is available. Our study also has some practical implications. The findings of this study shed light on how commercial banks in Vietnam can achieve better profitability which plays a key role in economic growth and how to adjust their policies appropriately with the effects of credit risk, liquidity, or stability.

The remainder of this paper proceeds as follows. Section 2 presents a brief overview of the literature and develops hypotheses. Section 3 outlines the data and methodology. Section 4 analyzes and discusses the empirical results. Section 5 concludes this paper and offers some recommendations.

2. Literature review and Hypothesis development

2.1. The microeconomic theories of banking

2.1.1 The credit creation theory until about 1930

The credit creation theory, developed by Clifford Hugh Douglas in the early 20th century, posits that banks generate credit and money out of nothing when lending or purchasing assets. This initial lending triggers a multiplier effect, as recipients spend and generate deposits, leading to an increase in overall balances without corresponding declines elsewhere. Thus, the theory indicates that during periods of increased bank credit, balance sheets and money supply indicators typically trend upward. Douglas (1924) argues for government control over credit creation to align public purchasing power with economic production capacity. Various economists have supported this theory, and its applications have been explored in academic works, including political analyses and studies of credit reform. There are many economists support this theory include Macleod (1856), Withers (1909, 1916), Wicksell (1898), Cassel (1918), Hahn (1920), Hawtrey (1919) and others. Despite its contributions, the theory has notable limitations, such as its inadequacy in explaining the dynamics between commercial and central banks, as well as the effects of government spending, international trade, and financial crises on the money supply, which later prompt the emergence of the fractional reserve theory.

2.1.2 The fractional reserve theory until about 1970

The fractional reserve theory, significantly advanced by economists such as Fisher (1936), Friedman (1963), and Brunner and Melter (1969), illustrates the mechanism through which central banks control money creation and supply. Under this system, banks can expand the money supply beyond their held reserves, leading to economic cycles of credit expansion and contraction, which may result in instability (Fisher, 1936). The theory posits that while individual banks act as financial intermediaries, the banking system collectively holds the power to generate money. Applied studies, such as those by Bohme et al. (2015) comparing Bitcoin with traditional banking and Wynne et al. (2007) examining the macroeconomic impact of bank lending, reinforce the theory's relevance in understanding modern finance. In addition, Bernanke (1983) uses this theory to examine how banking collapses during the Great Depression led to a significant contraction in the money supply. However, the theory also presents limitations, particularly in addressing the roles of non-bank financial institutions and the effects of financial innovations on the money supply. Further research is warranted to explore these aspects thoroughly.

2.1.3 The financial intermediation theory since 1970

The Financial Intermediation theory emphasizes the role of financial intermediaries like commercial banks, investment banks, insurance companies, and pension funds in creating money-like instruments and efficiently channeling funds from savers to borrowers (Gurley & Shaw, 1960). These intermediaries provide liquidity to depositors, allowing them to withdraw funds on demand, while also managing and reducing risk through diversification. Numerous researchers have applied the theory in their studies, such as Philippon (2016) examining the impact of financial technology (fintech) on financial intermediation, Beck et al. (2004) studying the relationship between financial development and economic inequality, and Brunnermeier (2009) studying the liquidity and credit crunch during the 2007-2008 financial crisis. These studies provide a

comprehensive understanding of how the theory can be applied in the banking sector, but also highlight the need for further research.

2.2. Credit risk and bank profitability

Credit risk refers to the potential loss resulting from a borrower's failure to repay a loan or meet contractual obligations according to Basel Committee on Banking Supervision (2000). It affects not only banks and financial institutions but also investors, corporations, and economies at large. Effective credit risk management plays a crucial role in the operation of banks, directly affecting their overall performance, sustainability, and bank profitability. Athanasoglou et al. (2006) show that credit risk, measured by non-performing loans (NPLs), has a significant negative effect on bank profitability. Effective credit risk management practices significantly reduce NPLs, leading to better financial performance. Studies have also investigated the effect of credit risk management on financial performance, particularly the attraction of creditworthy borrowers.

Effective credit risk management practices help banks attract more creditworthy borrowers while maintaining profitability by adjusting loan terms for riskier borrowers. DeYoung and Torna (2013) find that banks with strong risk management practices tend to have better-performing loans, lower delinquency rates, and fewer defaults. Managing credit risk well helps protect a bank's capital base, ensure its solvency, and maintain adequate capital reserves. Insufficient credit risk management can lead to higher rates of loan defaults and capital erosion in institutions with fast loan growth (Foss et al., 2010). Therefore, credit risk management should be strictly considered to maintain the capital reserve and guarantee bank solvency.

Altunbas et al. (2007) study the interplay between a bank's capital structure, risk-taking behavior, and operational efficiency within the European banking sector from 1992 to 2000. This study finds that banks with efficient capital structure, risk-taking behavior, and operational efficiency are better at identifying good lending opportunities and managing loan portfolios, leading to lower credit risk.

There are many studies showing a negative correlation between credit risk and bank profitability. In Kenyan commercial banks, a significant proportion of loans are non-performing, leading to a negative correlation between the quantity of non-performing loans and bank profitability (Kithinji, 2010). This suggests that managing credit risk is essential for improving financial performance. In the Middle East and North Africa region (MENA), higher non-performing loans (NPLs) are associated with a decline in bank profitability (Boudriga et al., 2009).

Furthermore, Athanasoglou et al. (2008) investigate the determinants of bank profitability, including both internal factors such as capital adequacy and loan quality, and external factors influencing the performance of Greek banks during the period 1985-2001. Bank-specific factors like capital strength, asset quality, and operational efficiency play a key role in determining a bank's profitability. They find that higher capital ratios have a positive impact on bank profitability, as well-capitalized banks are seen as safer and can secure cheaper funding. Greek banks have shown a risk-averse stance, implementing regulations to enhance credit risk screening and monitoring.

In Vietnam, a study by Do et al. (2020) documents a negative relationship between NPL ratios and

profitability indicators (ROA and ROE), suggesting that credit risk reduces profitability as non-performing loans do not generate interest income and increase the need for provisions against potential loan losses. High levels of NPLs can also adversely affect banks' financial health by increasing costs and reducing income. Overall, managing credit risk is crucial for improving bank profitability.

Based on the findings and arguments in previous studies, we propose the following hypothesis.

Hypothesis 1: Credit risk negatively affects bank profitability.

2.3. Liquidity and bank profitability

Liquidity is the ability of an asset or security to be bought or sold quickly without affecting its price, which is crucial in financial markets, institutions, and economic systems. Liquidity risk is a fundamental aspect of banking, affecting a bank's performance and stability. Effective liquidity risk management is linked to a bank's ability to manage short-term liabilities and maintain solvency. Poor liquidity management can lead to significant financial distress, reputational damage, and even bank failures. Studies have shown that excess liquidity, particularly during the 2007-2008 global financial crisis, incentivizes banks to take on more risks in lending and investment activities (Acharya & Naqvi, 2012).

Leverage increases liquidity risk, making highly financial leveraged institutions more vulnerable to shocks during financial stress. Banks with better liquidity are more resilient to systemic shocks (Brunnermeier & Pedersen, 2007; Cornett et al., 2011). Banks with better liquidity positions can continue lending during financial stress and supporting the economy. Liquidity risk management is crucial for maintaining credit supply and supporting core operations. Central banks should avoid coordination failures by managing solvency and liquidity risk.

The literature has focused on profitability analysis of either cross-country or individual country's banking systems. The first group of studies includes Bourke (1989), Molyneux & Thornton (1992), and more recent studies such as Pasiouras & Kosmidou (2007) and Said & Tumin (2011). Studies in the second group concern the banking system in variety specific countries such as the U.K. (Kosmidou et al., 2008), Switzerland (Dietrich & Wanzenried, 2011), or the developing market economies (e.g., Ibe, 2013). All the above studies conclude that the relationship between liquidity and bank profitability is positive.

Bourke (1989) analyzes the effects of both market concentration and other internal and external determinants on bank profitability based on the data of about ninety banks of twelve countries in Europe, North America, and Australia over a period from 1972 to 1981. It shows a positive correlation between liquidity and bank profitability, highlighting that liquidity helps banks meet short-term obligations, avoid costly distress, and exploit profitable opportunities. Pasiouras and Kosmidou (2007) find a positive relationship between liquidity and profitability for domestic banks in the European Union.

During the crisis of 2007-2008, the banking system worldwide was impacted significantly in various ways such as liquidity, solvency, confidence, and the overall stability of financial institutions. Dietrich and Wanzenried (2011) examine how bank-specific characteristics as well as macroeconomic and industry-specific factors affect the profitability of commercial banks in Switzerland during both pre-crisis period and the financial crisis. The study finds a positive relationship between liquidity and bank

profitability in Switzerland during both pre-crisis and financial crisis periods. During periods of financial instability, maintaining higher liquidity levels is crucial for survival and avoiding significant losses.

There are some recent studies about the banking system in Asia such as Kumar & Singh (2018) and Abdullah & Hossain (2014). A positive correlation between liquidity and bank profitability is documented in these studies. Trinh et al. (2021) find a positive relationship between liquidity and profitability in Vietnamese listed banks, especially in well-capitalized banks. Nguyen and Noh (2021) use the CAMELS model to investigate the determinants of bank performance in Vietnamese commercial banks and have the same conclusion. Overall, liquidity plays a crucial role in supporting bank operations and contributing to long-term profitability. We develop the hypothesis as follows.

Hypothesis 2: Liquidity positively affects bank profitability.

2.4. Bank stability and bank profitability

Bank stability is the ability of a bank to remain solvent and manage risks, especially in volatile financial markets, which is crucial for maintaining a healthy financial system and supporting economic growth. Bank runs can occur due to the coordination failure among depositors. Therefore, ensuring operational stability is essential to avoid bank runs and maintain trust in the banking system (Demirgüç-Kunt & Levine, 2001).

Prior studies have shown a positive relationship between bank stability and profitability, both in individual countries and across countries. Demirgüç-Kunt and Huizinga (1999) use data from eighty countries from the 1980s through the 1990s, focusing on capital adequacy ratios and non-performing loans as key indicators of bank stability. The study finds that well-capitalized banks tend to have higher profitability, as a strong capital base mitigates risk and lowers the cost of financial distress, leading to higher interest margins and improved profitability. Moreover, bank profitability is influenced by different factors due to varying operational environments and strategic approaches (Pasiouras & Kosmidou, 2007). Higher capital ratios enhance a bank's ability to absorb shocks, ensuring stable operations and consistent profit generation across different market conditions. Banks with greater stability, reflected in higher capital buffers and lower exposures to bad loans, enjoy more resilient profitability during downturns.

García-Herrero et al. (2009) investigate the reasons for the low profitability of Chinese banks for the period 1997-2004 in terms of structural efficiency, interest rate control, non-performing loans, or regulatory constraints. The study finds that more stable banks, with lower NPL ratios and stronger capital bases, perform better in term of profitability, which highlights that stability fosters profitability, even in rapidly growing economies like China.

During financial downturns, excessive risk taking can lead to substantial losses and instability, and the positive relationship between stability and profitability diminishes during financial crises, particularly in large banks that are exposed to systemic risks. Berger and Bouwman (2013) examine the relationship between bank capital, profitability, and financial stability, especially in the 2007-2008 financial crisis. They argue that pre-crisis profitability can help banks survive crises but should not be the sole determinant of bank stability.

The findings from previous studies and arguments above lead us to propose the following hypothesis.

Hypothesis 3: Bank stability positively affects bank profitability.

3. Data and Methodology

3.1. Data collection

This paper uses data of Vietnamese listed commercial banks from 2010 to 2023, including all commercial banks listed on the Ho Chi Minh Stock Exchange (HOSE) and the Hanoi Exchange (HNX), except Agribank as it is not listed on HOSE or HNX. Banks with missing data or errors are excluded from the sample. Bank accounting data are downloaded from the Thomson Reuters EIKON database. In addition, the GDP per capita and the Inflation rate are downloaded from the website of World Bank <https://data.worldbank.org>. After deleting missing and error data, the final example has 158 bank-year observations.

3.2. Research methodology

3.2.1. The measurement of bank profitability

The dependent variable, bank profitability, is measured by three proxies: Return on asset (ROA), Return on equity (ROE), and Net interest margin (NIM). We use three proxies to assess a bank's profitability as relying on one metric could lead to biased conclusions. As bank performance is reflected through various indicators, no single measure can provide a complete picture. Using a combination of measures leads to more robust and reliable conclusions.

As Golin (2001) notes, ROA becomes the most commonly employed indicator of bank profitability in the literature and has emerged as a key ratio to evaluate bank profitability. ROA is calculated as net income divided by total assets. ROE is the ratio of net profits to total shareholders' equity and used to show the return that shareholders can expect from their investments in the bank (Tan, 2014, 2016a; Tan & Anchor, 2016; Tan et al., 2017). In addition, NIM can be used to evaluate how effectively a bank is managing its assets and liabilities to generate profits from its core lending operations (Tan & Floros, 2012a, b, c). NIM is computed as net interest income divided by interest-earning assets.

3.2.2. Research models

We use the following models to examine how credit risk, liquidity, and bank stability affects bank profitability of Vietnamese listed commercial banks based on the reviewed literature.

The first hypothesis investigates the correlation between credit risk and bank profitability of Vietnamese listed commercial banks. Thus, this hypothesis is tested using the following model.

$$BPROF_{it} = \beta_0 + \beta_1 Crisk_{it} + \beta_2 Size_{it} + \beta_3 Cade_{it} + \beta_4 Depo_{it} + \beta_5 Aqua_{it} + \beta_6 Eff_{it} + \beta_7 InDi_{it} + \beta_8 FC_{it} + \beta_9 GDPa_t + \beta_{10} Inf_t + \varepsilon_{it} \quad (1)$$

The dependent variable is the bank profitability, as measured by ROA, ROE, and NIM. The independent variable is Credit risk (Crisk). The control variables are Bank size (Size), Capital to assets ratio (Cade), Deposit growth (Depo), Asset quality (Aqua), Efficiency (Eff), Income diversity (InDi), Funding cost (FC), GDP per capita (GDPa), and Inflation rate (Inf). The subscripts i , t and ε denote, respectively, the bank,

year, and error term.

The second hypothesis involves the effect of liquidity on bank profitability of Vietnamese listed commercial banks. Thus, this suggested hypothesis is tested using the following model.

$$BPROF_{it} = \beta_0 + \beta_1 Liquid_{it} + \beta_2 Size_{it} + \beta_3 Cade_{it} + \beta_4 Depo_{it} + \beta_5 Aqua_{it} + \beta_6 Eff_{it} + \beta_7 Indi_{it} + \beta_8 FC_{it} + \beta_9 GDPa_t + \beta_{10} Inf_t + \epsilon_{it} \quad (2)$$

Model (2) has the same dependent and control variables as in Model (1). The only difference is the use of Liquidity instead of Credit risk as the main explanatory variable.

The third hypothesis involves the effect of bank stability on bank profitability of Vietnamese listed commercial banks. We use the following model to examine this impact.

$$BPROF_{it} = \beta_0 + \beta_1 Z_{it} + \beta_2 Size_{it} + \beta_3 Cade_{it} + \beta_4 Depo_{it} + \beta_5 Aqua_{it} + \beta_6 Eff_{it} + \beta_7 Indi_{it} + \beta_8 FC_{it} + \beta_9 GDPa_t + \beta_{10} Inf_t + \epsilon_{it} \quad (3)$$

Similar to Models (1) and (2), Model (3) uses bank profitability (ROA, ROE, and NIM) as the dependent variable together with the list of nine control variables, but the main independent variable is Bank stability (Z). Table 1 below presents the calculations of all variables in the research models.

Table 1: Summary of variables

<i>Variable code</i>	<i>Variable name</i>	<i>Variable calculation</i>
<i>Dependent Variable</i>		
<i>BPROF</i>	Bank Profitability	
<i>ROE</i>	Return on Equity	$ROE = \frac{Net\ income}{Shareholders' equity}$
<i>ROA</i>	Return on Asset	$ROA = \frac{Net\ income}{Total\ assets}$
<i>NIM</i>	Net Interest Margin	$NIM = \frac{Interest\ income - Interest\ expenses}{Average\ interest\ earning\ assets}$
<i>Independent Variable</i>		
<i>Crisk</i>	Credit Risk	$Crisk = \frac{Non - performing\ loans}{Gross\ loans}$

Liquid	Liquidity	$Liquid = \frac{Liquid\ assets}{Total\ assets}$
Z	Bank Stability	$Z = \ln\left[\frac{ROA_{it} + \left(\frac{E}{A}\right)_{it}}{\sigma ROA_{it}}\right]$
Control Variables		
Size	Bank size	$Size = \ln(Total\ assets)$
Cade	Capital to assets ratio	$Cade = \frac{Total\ shareholders'\ equity}{Total\ assets}$
Depo	Deposit growth	$Depo = \frac{Total\ deposits_t - Total\ deposits_{t-1}}{Total\ deposits_{t-1}}$
Aqua	Asset quality	$Aqua = \frac{Total\ loans}{Total\ assets}$
Eff	Efficiency	$Eff = \frac{Total\ operating\ expenses}{Total\ operating\ income}$
InDi	Income diversity	$InDi = \frac{Non - interest\ income}{Total\ income}$
FC	Funding cost	$FC = \frac{Total\ interest\ expenses}{Total\ deposits}$
GDPa	GDP per capita	$GDPa = \ln(GDP\ per\ capita)$
Inf	Inflation	The annual inflation rate of Vietnam

This paper employs three panel-data regression methods, which are Pooled-OLS (Ordinary Least Squares) regression, Fixed-Effect Model (FEM), and Random-Effect Model (REM), to analyze panel data to explore the strength and direction of the relationship among variables. Table 2 shows the tests conducted to choose the best model. The superiority of FEM over Pooled OLS is determined using the F-test. The Breusch-Pagan Lagrange Multiplier (LM) test is used to choose the better model between Pooled OLS and REM. Finally, FEM and REM are compared using the Hausman test to determine which model is more appropriate (Hausman, 1978).

Table 2: Summary of Tests and Models

<i>F-test</i>	<i>Breusch-Pagan LM test</i>	<i>Hausman test</i>	<i>The selected model</i>
<i>H₀ is not rejected</i>	H ₀ is not rejected		Pooled OLS
<i>H₀ is not rejected</i>	H ₀ is rejected		Random Effect Model
<i>H₀ is rejected</i>	H ₀ is not rejected		Fixed Effect Model
<i>H₀ is rejected</i>	H ₀ is rejected	H ₀ is rejected	Fixed Effect Model
<i>H₀ is rejected</i>	H ₀ is rejected	H ₀ is not rejected	Random Effect Model

Source: Le & Phan (2017)

4. Empirical results

4.1. Descriptive statistics

Table 3 illustrates descriptive statistics of all variables.

Table 3: Descriptive Statistics

	N	Mean	Median	Min	Max	SD
ROE	158	0.133	0.137	0.006	0.226	0.062
ROA	158	0.011	0.009	0.000	0.025	0.007
NIM	158	0.035	0.034	0.019	0.058	0.011
Crisk	158	0.034	0.025	0.006	0.112	0.027
Liquid	158	0.146	0.138	0.068	0.244	0.049
Z	158	3.860	3.699	2.717	5.666	0.780
Size	158	33.436	33.406	32.126	34.965	0.829
Cade	158	0.082	0.075	0.049	0.158	0.028
Depo	158	0.166	0.144	0.012	0.400	0.095
Aqua	158	0.623	0.639	0.442	0.732	0.082
Eff	158	0.473	0.447	0.278	0.753	0.132
InDi	158	0.443	0.415	0.171	0.867	0.190
FC	158	0.051	0.050	0.031	0.075	0.012
GDPa	158	9.278	9.323	8.822	9.629	0.239
Inf	158	0.031	0.032	0.006	0.066	0.012

The variable ROE has a mean of 0.133, exhibits an average value of return on equity, with the minimum value of 0.006 and maximum value of 0.226. The relatively narrow range shows that return on equity is

consistent and low across the sample, indicating a stable but modest return on equity. The mean value of the variable ROA is 0.011 with the value ranging from 0 to 0.025. The difference between the minimum and maximum values indicates a narrow range, suggesting the return on asset is relatively stable without significant changes in the sample period, however, it also shows the limited growth of commercial banks. The variable NIM has a mean of 0.035, with the minimum value of 0.019 and the maximum value of 0.058. This range also describes the same trend of ROE and ROA. Therefore, the bank profitability of Vietnamese listed commercial banks in this period is quite stable.

Coming to the independent variables, the mean value of Crisk is 0.034, with the value ranging from 0.006 to 0.112. The significant range of credit risks (over 10 percent) suggests the variability in credit portfolio and risk management of banks within the sample. The highest value is nearly 19 times the lowest, reflecting the high risk-high return strategy to maximize profitability. The variable Liquid has the mean of 0.146 with a minimum value of 0.068 and maximum value of 0.244. This range indicates the moderate to strong liquidity position, but with some fluctuations. The variable Z exhibits an average value of 3.860. The minimum and maximum values are 2.717 and 5.666, respectively, revealing a range of approximately 3. This suggests that while Z values are centered around the mean, there is some variability across observations.

Turning to control variables, the Size variable has a mean of 33.436, with a minimum value of 32.126 and a maximum value of 34.965. This range of approximately 3 units indicates moderate variability in the size being measured. The consistency around the mean suggests that Size values are relatively stable across the sample. The mean capital to assets ratio (Cade) is 0.082, with values ranging from 0.049 to 0.158. The relatively narrow range indicates limited variability in the level of capital buffer that banks hold relative to their total assets across the sample.

The mean of deposit growth (Depo) is 0.166, with a minimum value of 0.012 and a maximum value of 0.400. The difference between minimum and maximum value suggests considerable variability in the deposit growth, with the highest value being about thirty-three times the lowest. Asset quality (Aqua) has a mean of 0.623, with values spanning from 0.442 to 0.732. This range of nearly 0.3 indicates significant variability, which suggests diversity in risk exposures, varying levels of stability, and profitability priorities.

The mean of variable Eff is 0.473, with observations ranging from 0.278 to 0.753. This large range of 0.475 indicates the substantial variability in the efficiency of commercial banks within the sample, reflecting the significant difference in the strategy of banks with lowest value and highest value of efficiency. The variable income diversity (InDi) has a mean of 0.443, with a minimum of 0.171 and a maximum of 0.867. This significant range indicates considerable variability in the non-interest income ratio, with the highest value being about five times the lowest. The variability indicates differing levels of income diversification within the sample.

FC has a mean of 0.051, with values spanning from 0.031 to 0.075. This narrow range of 0.044 indicates relatively low variability across the sample which suggests a consistency in operational cost structures and resource allocation. The mean of GDPa is 9.278, with a minimum value of 8.822 and a maximum value of 9.629. This relatively narrow range suggests relatively modest variation in economic output per person across the sample. Finally, the mean inflation (Inf) is 0.031, with a minimum value of 0.006 and a maximum

value of 0.066. This range of nearly 0.06 indicates significant variability in inflation rates across the sample.

4.2. Correlation coefficients

Table 4 shows the correlations among all variables, Firstly, the correlation coefficient between ROE and Crisk has a negative value of -0.216, with a significance level of 1%. This moderate negative correlation indicates that as Crisk increases, the value of ROE tends to decrease, which is consistent with the expectation. In addition, the correlation coefficient between ROE and Liquid has a positive value of 0.160, with a significance level of 5%. This result is also consistent with the expectation that liquidity has a positive effect on bank profitability (ROE). However, the negative correlation between ROE and Z with the value of -0.142 and a significance level of 10% is not aligned with expectation that bank stability benefits bank profitability. The reason for this result may be Vietnamese commercial banks are affected by the policies of government. In order to comply with regulations and requirements from the State Bank of Vietnam, commercial banks do not lend too much, especially unsafe loans, to ensure the stability for banks. Consequently, bank profitability may decrease.

Secondly, the correlation coefficient between ROA and Crisk has a negative value of -0.128, with a significance level of 10%. This moderate negative correlation indicates that the higher level of credit risk is associated with the lower level of ROA, which is consistent with the expectation. Moreover, the correlation coefficient between ROA and Liquid has a positive value of 0.131, with a significance level of 10%. This result is also consistent with the expectation that liquidity has a positive effect on bank profitability (ROA). However, the correlation between ROE and Z is negative (-0.084) and is not statistically significant.

Table 4: Correlation Coefficients

Variables	ROE	ROA	NIM	Crisk	Liquid	Z	Size	Cade	Depo	Aqua	Eff	InDi	FC	GDPa	Inf
ROE	1.000														
ROA	0.841***	1.000													
NIM	0.669***	0.822***	1.000												
Crisk	-0.216***	-0.128*	0.064	1.000											
Liquid	0.160**	0.131*	-0.030	-0.135*	1.000										
Z	-0.142*	-0.084	-0.052	0.062	-0.074	1.000									
Size	0.443***	0.259***	0.259***	0.001	0.019	0.009	1.000								
Cade	0.186**	0.645***	0.611***	0.007	0.063	0.007	-0.072	1.000							
Depo	0.031	0.034	0.190**	0.202**	0.252***	-0.020	-0.044	0.021	1.000						
Aqua	0.248***	0.031	0.030	0.031	-0.498***	-0.061	0.494***	-0.259***	-0.235***	1.000					
Eff	-0.745***	-0.711***	-0.611***	0.050	-0.212***	-0.065	-0.545***	-0.320***	-0.001	-0.243***	1.000				
InDi	-0.256***	-0.021	-0.112	-0.049	0.149*	-0.026	-0.029	0.352***	-0.105	-0.376***	0.135*	1.000			
FC	-0.305***	-0.224***	-0.152*	0.331***	-0.294***	0.123	-0.420***	0.008	-0.054	0.096	0.225***	-0.221***	1.000		
GDPa	0.476***	0.497***	0.342***	-0.248***	0.064	0.093	0.270***	0.245***	-0.050	0.205***	-0.537***	-0.034	-0.028	1.000	
Inf	-0.046	-0.058	-0.050	0.295***	0.079	-0.059	-0.052	-0.022	-0.070	0.026	0.092	-0.056	0.365***	-0.312***	1.000

***p<0.01, **p<0.05, *p<0.1

Thirdly, the correlation coefficients between NIM and three independent variables (Crisk, Liquid, and Z) are not statistically significant.

Moving to the control variables, the correlation between bank profitability which is measured by three proxies (ROE, ROA, and NIM) and Size is positive, with a significance level of 1%. This result is aligned with our expectation that the bigger the size of banks, the higher the bank profitability. The correlation between bank profitability and Cade is positive, with a significance level of 1% for all three profitability proxies, which is consistent with our expectation. The positive relation indicates that an increase in capital to assets ratio leads to an increase in bank profitability.

The correlation between bank profitability measured by NIM and Depo is positive (0.190) and statistically significant at the 5% level, consistent with our expectation. However, the values for two remaining

profitability proxies are not statistically significant. The correlation between bank profitability and Aqua is positive (0.248) with a significance level of 1% for ROE proxy only, the values for ROA and NIM are not statistically significant. The correlation between bank profitability and Eff is negative, with a significance level of 1% for all three proxies, which is aligned with our expectation. As Eff indicates the inefficiency in the operations of banks, the negative correlation suggests that an increase in the inefficiency of banks leads to a decrease in bank profitability.

The correlation between ROE and InDi is negative with a significance level of 1%, the values for two remaining proxies are not statistically significant. In general, this result is not consistent with our expectation. The negative correlation indicates that when income diversity increases, ROE decreases. The possible explanation for this result is that Vietnamese commercial banks need to make large investments in their infrastructure to develop non-credit banking services and achieve more diversified incomes. However, these large investments make bank profitability (ROE) lower.

The correlation between bank profitability and FC is negative, with a significance level of 1% for two proxies (ROE and ROA) and 10% for NIM. This outcome is aligned with our expectation. The inverse relationship suggests that as funding costs increase, bank profitability decreases. The correlation between bank profitability and GDPa is positive with a significance level of 1% for all three proxies, which is consistent with our expectation. This positive correlation implies that the higher GDP per capita is associated with the higher value of bank profitability. The values for the correlation between bank profitability and inflation rate (Inf) are not statistically significant.

Finally, the absolute value of the correlation coefficient for each pair of explanatory variables is less than 0.7, suggesting that there is no multicollinearity issue in our regression models.

4.3. Regression results

4.3.1. The effect of credit risk on bank profitability

Table 5 shows that FEM is the best regression for Model 1 (ROE, ROA, and NIM) since the null hypothesis H_0 is rejected under all three tests: the F-test, LM test, and Hausman test (please see Table 2 in Section 3.2.2 for the guidelines). Therefore, the results are analyzed using the FEM.

As can be seen from Table 5, in the Fixed-Effect Model (FEM) of ROE, the coefficient on Crisk is -0.317 and statistically significant at the 10% level. The negative correlation between credit risk and bank profitability supports Hypothesis 1 and is consistent with the findings of previous studies (Bourke, 1989; Boudriga et al., 2009; Athanasoglou et al., 2008).

The coefficient on Cade is -0.434 and statistically significant at the 5% level. This negative correlation between capital to assets ratio and bank profitability is contrary to our expectation and the findings of previous studies (Berger & Bouwman, 2009). The reason for this result might be because Vietnamese commercial banks are required to hold high capital reserves due to regulatory requirements and as a buffer against potential financial instability, leading to a decrease in ROE.

The coefficient on Aqua is 0.171 with a significance level of 10%. This result is aligned with our expectation

that an increase in asset quality leads to an increase in bank profitability. Moreover, it is also consistent with previous studies (Athanasoglou et al., 2008; Laeven & Levine, 2009). The coefficient on Eff is -0.230 and statistically significant at the 1% level. The negative relationship between bank profitability and inefficiency is consistent with the expectation and previous studies (Athanasoglou et al., 2008; Berger & Mester, 1997).

Table 5: Regression result for Model 1

Variables	ROE			ROA			NIM		
	Pooled OLS	FEM	REM	Pooled OLS	FEM	REM	Pooled OLS	FEM	REM
Constant	0.039 (0.238)	-0.406 (0.380)	0.002 (0.235)	0.002 (0.022)	-0.034 (0.036)	0.003 (0.022)	-0.005 (0.041)	-0.031 (0.045)	0.019 (0.034)
Crisk	-0.304** (0.126)	-0.317* (0.168)	-0.299** (0.137)	-0.009 (0.011)	-0.017 (0.016)	-0.010 (0.012)	0.034 (0.022)	-0.026 (0.020)	-0.018 (0.020)
Size	-0.004 (0.006)	0.016 (0.018)	-0.002 (0.007)	-0.001* (0.001)	0.001 (0.002)	-0.001 (0.001)	0.001 (0.001)	0.003 (0.002)	0.001 (0.001)
Cade	0.122 (0.131)	-0.434** (0.195)	-0.061 (0.145)	0.129*** (0.012)	0.062*** (0.019)	0.117*** (0.013)	0.228*** (0.023)	0.114*** (0.023)	0.143*** (0.022)
Depo	0.036 (0.034)	0.030 (0.031)	0.037 (0.031)	0.002 (0.003)	0.001 (0.003)	0.002 (0.003)	0.015** (0.006)	0.013*** (0.004)	0.014*** (0.004)
Aqua	0.056 (0.051)	0.171* (0.090)	0.058 (0.058)	0.004 (0.005)	0.013 (0.009)	0.004 (0.005)	0.003 (0.009)	0.047*** (0.011)	0.029*** (0.009)
Eff	-0.267*** (0.035)	-0.230*** (0.041)	-0.268*** (0.037)	-0.023*** (0.003)	-0.021*** (0.004)	-0.024*** (0.003)	-0.023*** (0.006)	-0.029*** (0.005)	-0.030*** (0.005)
InDi	-0.070*** (0.019)	-0.019 (0.031)	-0.049** (0.021)	-0.006*** (0.002)	0.000 (0.003)	-0.005** (0.002)	-0.015*** (0.003)	-0.009** (0.004)	-0.008*** (0.003)
FC	-1.364*** (0.349)	-0.635 (0.397)	-0.969*** (0.355)	-0.143*** (0.033)	-0.099*** (0.038)	-0.125*** (0.033)	-0.157*** (0.060)	-0.049 (0.047)	-0.053 (0.047)
GDPa	0.043*** (0.017)	0.009 (0.035)	0.038** (0.017)	0.005*** (0.002)	0.002 (0.003)	0.005*** (0.002)	0.003 (0.003)	-0.007 (0.004)	-0.002 (0.003)
Inf	0.687*** (0.209)	0.632*** (0.203)	0.611*** (0.197)	0.058*** (0.020)	0.069*** (0.020)	0.057*** (0.019)	0.039 (0.036)	0.066*** (0.024)	0.055** (0.024)
Bank FE	No	Yes	No	No	Yes	No	No	Yes	No
Year FE	No	Yes	No	No	Yes	No	No	Yes	No
Bank RE	No	No	Yes	No	No	Yes	No	No	Yes
Year RE	No	No	Yes	No	No	Yes	No	No	Yes
Adj R-squared	0.646			0.754			0.644		
F-statistic	29.70			49.11			29.34		
p-value	0.000			0.000			0.000		
LM Test									
Chi-squared				18.10			8.23		
p-value				0.000			0.002		
Hausman Test									
Chi-squared	26.77			33.93			21.09		
p-value	0.003			0.000			0.021		
Number of obs.	158	158	158	158	158	158	158	158	158

***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 (2-tailed) levels, respectively. Winsorizing at the 5th and 95th percentiles is used for continuous variables. The parentheses surround the standard errors.

The coefficient on Inf is 0.632 with a significance level of 1%. The positive relationship between bank profitability and inflation rate is aligned with the expectation and previous studies (Perry, 1992; Le & Hoang, 2017) but contrary to Flamini et al. (2009). The reason for this result might be because Vietnam has moderate inflation rates that lead to increased interest rate margins, benefiting banks by allowing them to charge higher rates on loans compared to deposits. The remaining control variables consisting of Size, Depo, InDi, FC, and GDPa do not have a statistically significant impact on bank profitability when it is measured by ROE.

For the Fixed-Effect Model (FEM) of ROA, the coefficient on Crisk is negative but not statistically significant. Although this negative coefficient is in line with the conclusions of Bourke (1989), Kithinji (2010), and Boudriga et al. (2009), which suggest that banks with higher credit risks face more volatile earnings, which reduce the overall profitability, the result does not support hypothesis 1 due to the lack of

statistical significance.

The results of the coefficients on Cade, Eff, and Inf for ROA are similar to those with ROE. Briefly, Cade, Eff, and Inf have statistically significant effects on bank profitability and the directions of the effects of Eff and Inf on ROA are the same as with ROE. The positive impact of Cade on ROA is different from ROE but consistent with our expectation that higher capital to assets ratio leads to higher ROA for banks. Meanwhile, the FC variable in this case has a coefficient of -0.099, which is significant at the 1% level, suggesting that when the FC increases, bank profitability decreases. This result is aligned with the expectation and previous studies (Saunders & Schumacher, 2000; Demirgüç-Kunt et al., 2010). Other control variables, including Size, Depo, Aqua, InDi, and GDPa, do not have statistically significant impacts on bank profitability when it is measured by ROA.

In the Fixed-Effect Model (FEM) for NIM, the coefficient on Crisk is negative but not statistically significant. Thus, the result does not support hypothesis 1 due to the lack of statistical significance, which is the same as the relationship between ROA and Crisk.

The coefficients on Cade, Eff, and Inf are similar to those with ROA. Briefly, Cade, Eff, and Inf have statistically significant effects on bank profitability and the directions of these effects are the same as with ROA. Meanwhile, the Depo variable in this case has a coefficient of 0.013 which is significant at the 1% level. This result is consistent with our expectation and previous studies (Athanasoglou et al., 2008). In addition, the coefficient on Aqua is 0.047 with a significance level of 1%. This result is similar to when using ROE to measure bank profitability.

The coefficient on InDi is -0.009, with a significance level of 5%. The negative relationship between income diversity and bank profitability indicates that higher income diversity, lower bank profitability, which goes against our expectation and previous studies (Lepetit et al., 2008; Li et al., 2021). There are some reasons for this result. The first is due to the regulatory requirements of the Vietnamese government, commercial banks have to witness the increasing of compliance costs, thus bank profitability decreases. In addition, non-interest income sources, such as fees and commissions, can be more volatile than the traditional interest income. This volatility can make it difficult for banks to predict and manage their overall profitability. The remaining variables (Size, FC, and GDPa) do not have any significant effect on bank profitability when using NIM to measure.

4.3.2. *The effect of liquidity on bank profitability*

Similar to Model 1, the F test, LM test, and Hausman test are employed to identify which regression approach is the most appropriate for Model 2. As presented in Table 6, the null hypothesis is rejected in all three tests. Therefore, FEM is best regression model for analyzing the effect of liquidity on three proxies of bank profitability (ROE, ROA, and NIM).

For the Fixed-Effect Model (FEM) of ROE, the coefficient on Liquid is positive but not statistically significant. Although the sign is consistent with Hypothesis 2, it does not support Hypothesis 2 due to the lack of statistical significance.

The results for the correlation coefficients between ROE and Aqua as well as Inf are the same as ROE in

Model 1. Aqua and Inf have statistically significant effects on bank profitability and the directions of these effects are aligned with the expectation. Meanwhile, the coefficient on Cade is -0.514 with a significance level of 1%. The negative relationship is contrary with the expectation and previous studies. The reason for this finding can be the stricter capital regulations of Vietnamese commercial banks. Moreover, a higher capital to assets ratio often implies lower leverage, which can limit a bank's ability to generate returns (Kopecky & Van Hoose, 2004). The remaining control variables (Size, Depo, Eff, InDi, FC, and GDPa) do not have statistically significant effects on bank profitability when it is measured by ROE.

Table 6: Regression result for Model 2

Variables	ROE			ROA			NIM		
	Pooled OLS	FEM	REM	Pooled OLS	FEM	REM	Pooled OLS	FEM	REM
Constant	0.033 (0.243)	-0.382 (0.383)	0.002 (0.239)	0.005 (0.022)	-0.030 (0.036)	0.004 (0.022)	0.010 (0.038)	-0.037 (0.046)	0.015 (0.034)
Liquid	-0.050 (0.086)	0.188 (0.115)	-0.000 (0.094)	-0.014* (0.008)	0.018** (0.011)	-0.011 (0.008)	-0.072*** (0.013)	-0.010 (0.014)	-0.021 (0.013)
Size	-0.007 (0.006)	0.013 (0.019)	-0.004 (0.007)	-0.001** (0.001)	0.000 (0.002)	-0.001* (0.001)	0.001 (0.001)	0.003 (0.002)	0.001*** (0.001)
Cade	0.058 (0.139)	-0.514*** (0.193)	-0.057 (0.148)	0.123*** (0.013)	0.057*** (0.018)	0.113*** (0.013)	0.199*** (0.022)	0.110*** (0.023)	0.142*** (0.021)
Depo	0.019 (0.034)	0.004 (0.033)	0.023 (0.032)	0.002 (0.003)	-0.001 (0.003)	0.002 (0.003)	0.022*** (0.005)	0.014*** (0.004)	0.016** (0.004)
Aqua	0.038 (0.061)	0.249** (0.099)	0.058 (0.068)	-0.001 (0.006)	0.020** (0.009)	-0.000 (0.006)	-0.023** (0.009)	0.044*** (0.012)	0.022*** (0.010)
Eff	-0.266*** (0.037)	-0.217 (0.043)	-0.265*** (0.038)	-0.025*** (0.003)	-0.019*** (0.004)	-0.025*** (0.003)	-0.033*** (0.006)	-0.030*** (0.005)	-0.032*** (0.005)
InDi	-0.073*** (0.020)	-0.022 (0.031)	-0.053** (0.021)	-0.006*** (0.002)	0.001 (0.003)	-0.005** (0.002)	-0.015*** (0.003)	-0.010*** (0.004)	-0.010 (0.003)
FC	-1.719*** (0.341)	-0.637 (0.399)	-1.191*** (0.355)	-0.166*** (0.031)	-0.095** (0.038)	-0.143*** (0.032)	-0.191*** (0.053)	-0.061** (0.048)	-0.072 (0.047)
GDPa	0.056*** (0.016)	0.009 (0.036)	0.047*** (0.017)	0.006*** (0.001)	0.002 (0.003)	0.006*** (0.002)	0.004 (0.003)	-0.007 (0.004)	-0.001 (0.003)
Inf	0.693*** (0.223)	0.438** (0.210)	0.561*** (0.210)	0.068*** (0.020)	0.054*** (0.020)	0.064*** (0.020)	0.099*** (0.035)	0.065*** (0.025)	0.064*** (0.025)
Bank FE	No	Yes	No	No	Yes	No	No	Yes	No
Year FE	No	Yes	No	No	Yes	No	No	Yes	No
Bank RE	No	No	Yes	No	No	Yes	No	No	Yes
Year RE	No	No	Yes	No	No	Yes	No	No	Yes
Adj R-squared	0.633			0.758			0.697		
F-statistic	28.11			50.17			37.14		
p-value	0.000			0.000			0.000		
LM Test									
Chi-squared				19.02			5.22		
p-value				0.000			0.011		
Hausman Test									
Chi-squared	29.71			34.42			18.48		
p-value	0.001			0.000			0.048		
Number of obs	158	158	158	158	158	158	158	158	158

***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 (2-tailed) levels, respectively. Winsorizing at the 5th and 95th percentiles is used for continuous variables. The parentheses surround the standard errors.

As can be seen in the FEM results of ROA, the coefficient on Liquid is 0.018 and statistically significant at the 5% level. This positive coefficient indicates that the more liquidity, the higher bank profitability, which is aligned with Hypothesis 2 and the conclusions of previous studies such as Pasiouras & Kosmidou (2007) and Thinh et al. (2021). They find that higher liquidity helps banks meet short-term obligations, avoid costly distress, and exploit profitable opportunities. Moreover, it supports bank operations and contribute to long-term profitability.

For the inefficiency, the FEM regression results suggest that the Eff variable has a significantly negative effect on ROA, with a coefficient of -0.019 and statistically significant at the 1% level. This suggests that higher inefficiency leads to a decrease in bank profitability. The result validates the expectation about the impact of inefficiency on bank profitability. This result also coincides with the findings of Athanasoglou et al. (2008) and Berger & Mester (1997).

For the funding cost (FC), the coefficient is -0.095 and statistically significant at the 5% level. This negative relationship is consistent with the expectation and previous studies (Saunders & Schumacher, 2000; Demirgüç-Kunt et al., 2010). It indicates that when funding costs increase, the bank profitability decreases. The effects of Aqua and Inf on ROA in the FEM regression are similar to those with ROE proxy. Briefly, Aqua and Inf have positive and statistically significant effects on bank profitability. In addition, for the Cade variable, the coefficient is 0.057 and statistically significant at the 1% level, which is aligned with the expectation and previous studies (Berger & Bouwman, 2009). The remaining variables (Size, Depo, InDi, and GDPa) do not have statistically significant impacts on bank profitability when it is measured by ROA.

In the Fixed-Effect Model (FEM) of NIM, the coefficient on Liquid is negative but not statistically significant. The result does not support Hypothesis 2 and suggests that Liquidity does not significantly affect bank profitability when it is measured by NIM.

For the deposit growth (Depo), the coefficient is 0.014 and statistically significant at the 1% level. This positive relationship is consistent with the expectation and previous studies (Athanasoglou et al., 2008). It indicates that an increase in deposit growth leads to an increase in bank profitability. The coefficient on InDi is -0.010, with a significance level of 1%. The negative relationship between income diversity and bank profitability indicates that higher income diversity, lower bank profitability, which goes against our expectation and findings in previous studies (Lepetit et al., 2008; Li et al., 2021). The reasons for this result are similar to those of Model 1 and discussed in Section 4.3.1.

The effects of Cade, Aqua, Eff, FC, and Inf on NIM in the FEM regression results are similar to those with ROA. Briefly, Cade, Aqua, Eff, FC, and Inf have statistically significant effects on bank profitability and the directions of these effects are the same as with ROA. The remaining variables – Size and GDPa – do not have statistically significant effects on bank profitability when it is measured by NIM.

4.3.3. *The effect of bank stability on bank profitability*

Similar to two previous models, the F test, LM test, and Hausman test are employed to identify which regression model is the most appropriate for Model 3. Table 7 shows that the Fixed-Effect Model (FEM) is the best to analyze the effect of bank stability (Z) on bank profitability which is measured by ROE, ROA, and NIM.

As can be seen from Table 7, for the Fixed-Effect Model (FEM) of ROE, the bank stability (Z) negatively affects bank profitability which is measured by ROE, with a coefficient of -0.010 and statistically significant at the 5% level. The negative correlation between bank stability and bank profitability is contrary to Hypothesis 3 and the findings of previous studies (Demirgüç-Kunt and Huizinga, 1999; Pasiouras & Kosmidou, 2007). There are some possible explanations for the result. The first reason is that in Vietnam, where credit growth and economic development are dynamic, some banks may prioritize short-term profits over long-term sustainability in which banks might take on riskier loans or investments to achieve higher returns. As a result, banks can get high profitability without maintaining the high bank stability. In addition, with the strict regulatory requirements of the State Bank of Vietnam, commercial banks need to maintain higher liquidity ratios and provisions for potential loan losses (high bank stability) that increase operational

costs and reduce profits.

For the control variables, the coefficient on Cade is -0.472 and statistically significant at the 5% level. This negative correlation between ROE and Cade goes against the expectation and previous findings as discussed in Section 4.3.2 for Model 2. Aqua, Eff, and Inf also have statistically significant effects on ROE and the directions of these effects are consistent with the expectations and the findings in previous studies. The results are the same as Model 1 in Section 4.3.1. The remaining variables (Size, Depo, InDi, FC, and GDPa) do not significantly affect bank profitability which is measured by ROE.

As the FEM results of ROA present, the coefficient on Z is negative (-0.001) and statistically significant at the 5% level, suggesting that bank stability negatively affects bank profitability (ROA). However, the magnitude of the impact is small. This result is similar to the case when using ROE to measure bank profitability, opposite to our expectation and previous findings, and does not support Hypothesis 3. The explanations have been discussed above for ROE.

The effects of Eff and Inf on ROA under the FEM regression are also similar to those with ROE. Briefly, Eff has a negative effect whereas Inf has a positive impact on bank profitability. Meanwhile, the Cade variable in this model has a positive coefficient of 0.060 which is significant at the 1% level, suggesting that when capital to assets ratio increases, the bank profitability increases. The result validates the expectation and is consistent with previous studies (Berger & Bouwman, 2009).

For the funding cost (FC), the coefficient is -0.097 and statistically significant at the 1% level. This negative relationship is consistent with the expectation and previous studies (Saunders & Schumacher, 2000; Demirgüç-Kunt et al., 2010). It indicates that when funding costs increase, the bank profitability decreases. The remaining variables (Size, Depo, Aqua, InDi, and GDPa) do not have any significant effect on bank profitability when ROA is used to measure.

As shown in the FEM results of NIM, the coefficient on Z is negative and very small (close to 0) but not statistically significant. This result does not support Hypothesis 3 due to the lack of statistical significance, suggesting that when using NIM to measure profitability, bank stability does not significantly impact bank profitability.

The coefficient on Depo is 0.012, with a significance level of 1%. The positive relationship between bank profitability and deposit growth indicates that the higher deposit growth, the higher bank profitability, which is consistent with our expectation and the findings of previous studies (Athanasoglou et al., 2008). For the InDi variable, the coefficient is -0.010 and statistically significant at the 1% level. The result is contrary with the expectation and previous studies and has been discussed in Section 4.3.1 for Model 1 with bank profitability also measured by NIM.

Table 7: Regression result for Model 3

Variables	ROE			ROA			NIM		
	Pooled OLS	FEM	REM	Pooled OLS	FEM	REM	Pooled OLS	FEM	REM
Constant	0.010 (0.235)	-0.318 (0.379)	0.018 (0.233)	0.001 (0.022)	-0.027 (0.036)	0.002 (0.022)	-0.005 (0.041)	-0.029 (0.046)	0.021 (0.034)
Z	-0.012*** (0.004)	-0.010** (0.004)	-0.012*** (0.004)	-0.001** (0.000)	-0.001** (0.000)	-0.001** (0.000)	-0.001 (0.001)	-0.000 (0.000)	-0.000 (0.000)
Size	-0.004 (0.006)	0.011 (0.018)	-0.004 (0.006)	-0.001* (0.001)	0.000 (0.002)	-0.001** (0.000)	0.001 (0.001)	0.003 (0.002)	0.000 (0.001)
Cade	0.087 (0.129)	-0.472** (0.190)	0.025 (0.134)	0.127*** (0.012)	0.060*** (0.018)	0.121*** (0.012)	0.228*** (0.023)	0.110*** (0.023)	0.141*** (0.021)
Depo	0.009 (0.032)	0.019 (0.031)	0.012 (0.032)	0.001 (0.003)	0.000 (0.003)	0.001 (0.003)	0.017*** (0.006)	0.012*** (0.004)	0.013*** (0.004)
Aqua	0.027 (0.051)	0.168* (0.089)	0.029 (0.035)	0.002 (0.005)	0.012 (0.009)	0.002 (0.005)	0.001 (0.009)	0.047*** (0.011)	0.029*** (0.009)
Eff	-0.267*** (0.034)	-0.234*** (0.041)	-0.270*** (0.035)	-0.023*** (0.003)	-0.021*** (0.004)	-0.024*** (0.003)	-0.024*** (0.006)	-0.029*** (0.005)	-0.030*** (0.005)
InDi	-0.075*** (0.019)	-0.031 (0.029)	-0.068*** (0.020)	-0.006*** (0.002)	-0.000 (0.003)	-0.005*** (0.001)	-0.015*** (0.003)	-0.010*** (0.004)	-0.009*** (0.003)
FC	-1.441*** (0.328)	-0.628 (0.392)	-1.285*** (0.332)	-0.136*** (0.031)	-0.097*** (0.038)	-0.128*** (0.031)	-0.106** (0.057)	-0.053 (0.047)	-0.055 (0.047)
GDPa	0.055*** (0.016)	0.021 (0.035)	0.052*** (0.016)	0.006*** (0.001)	0.003 (0.003)	0.005*** (0.001)	0.001 (0.003)	-0.006 (0.004)	-0.001 (0.003)
Inf	0.568*** (0.207)	0.471** (0.199)	0.527*** (0.202)	0.051*** (0.019)	0.059*** (0.019)	0.050*** (0.019)	0.037 (0.036)	0.056*** (0.024)	0.047** (0.024)
Bank FE	No	Yes	No	No	Yes	No	No	Yes	No
Year FE	No	Yes	No	No	Yes	No	No	Yes	No
Bank RE	No	No	Yes	No	No	Yes	No	No	Yes
Year RE	No	No	Yes	No	No	Yes	No	No	Yes
Adj R-squared	0.679			0.762			0.665		
F-statistic	31.03			51.36			29.13		
p-value	0.000			0.000			0.000		
LMTest									
Chi-squared				18.59			6.95		
p-value				0.000			0.004		
Hausman Test									
Chi-squared	39.06			37.07			19.74		
p-value	0.001			0.000			0.032		
Number of obs	158	158	158	158	158	158	158	158	158

***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 (2-tailed) levels, respectively. Winsorizing at the 5th and 95th percentiles is used for continuous variables. The parentheses surround the standard errors.

The results of Cade, Eff, and Inf variables under the FEM regression are similar to those when using ROA to measure bank profitability. Briefly, Cade, Eff, and Inf have statistically significant effects on NIM and the directions of these effects are the same as those with ROA. In addition, Aqua has a positive and statistically significant effect on NIM, which is the same as the result when using ROE to measure bank profitability. The remaining three variables (Size, FC, and GDPa) are found to have no significant effect on bank profitability which is measured by NIM.

5. Conclusions

This study explores the effects of credit risk, liquidity, and bank stability on bank profitability of Vietnamese listed commercial banks from 2010 to 2023. The results show that credit risk has a negative effect on the bank profitability when it is measured by ROE, but the results are not statistically significant when measuring profitability by ROA and NIM. In addition, liquidity is found to have a positive relationship with bank profitability which is measured by ROA. However, for ROE and NIM proxies, the effects are not statistically significant. The findings also suggest that there is a negative correlation between bank stability and bank profitability. Specifically, bank stability has a negative effect on bank profitability when it is measured by ROE and ROA, but the magnitude of the effect is small and there is no significant effect of bank stability on bank profitability measured by NIM. The reason for our findings could be due to the strict regulatory requirements of the State Bank of Vietnam, commercial banks need to maintain higher liquidity ratios and provisions for potential loan losses (high bank stability) that increase operational costs and reduce

profits. Moreover, in Vietnam, credit growth and economic development are dynamic, some banks may prioritize short-term profits over long-term sustainability in which banks might take on riskier loans or investments to achieve higher returns. As a result, banks can get high profitability without maintaining the high bank stability.

For the control factors that might have the correlation with bank profitability, the majority of variables have a significant effect on bank profitability in all three models. For example, Inefficiency has a significantly negative impact, whereas Inflation rate has a significantly positive effect on bank profitability in most cases of ROE, ROA, and NIM proxies. In all three models, Capital to assets ratio negatively affects ROE but positively affects ROA and NIM. As expected, Deposit growth and Income diversity only have a significant effect on bank profitability measured by NIM. In addition, while Asset quality has an expected positive correlation with bank profitability measured by ROE and NIM, Funding cost only has a significantly negative relationship with profitability when it is measured by ROA. Finally, there is no significant effect of Bank size and GDP per capita on bank profitability in all models.

This study aims to fill the gap in the literature concerning how banks with different characteristics perform and respond to bank risks and economic fluctuations. In previous studies, the researchers only focus on credit risks and liquidity. In our research, one more factor is analyzed for Vietnamese banks, that is bank stability. As a result, the findings of this research provide some insights on the operational stability and profitability of commercial banks in Vietnam. In addition, bank managers and policy makers can use the results of our study to make concise and appropriate decisions to improve bank profitability.

The most significant limitation of our study is the small sample size. This limitation exists because there are not many Vietnamese commercial banks listed on the stock market. Future studies can expand the sample size if there are more Vietnamese banks listed on the stock market in the future. Moreover, future research can employ the methods and findings of this study to conduct research for other emerging markets. Consequently, they can compare the results with our research to have the general conclusion for developing countries. Furthermore, future research can expand explanatory variables such as market risk, exchange rate risk, and interest rate risk to find the insightful pictures of how other risk factors affect bank profitability.

References

- Accornero, M., Cascarino, G., Felici, R., Parlapiano, F., & Sorrentino, A. M. (2018). Credit risk in banks' exposures to non-financial firms. *European Financial Management*, 24(5), 775-791. <https://doi.org/10.1111/eufm.12138>
- Acharya, V. V., & Naqvi, H. (2012). The seeds of a crisis: A theory of bank liquidity and risk-taking overhang. *Journal of Financial Economics*, 106(2), 349-366. <https://doi.org/10.1016/j.jfineco.2012.05.014>
- Al Nimer, M., Warrad, L., & Al Omari, R. (2015). The impact of liquidity on Jordanian banks profitability through return on assets. *European Journal of Business and Management*, 7(7), 229-232. <https://core.ac.uk/download/pdf/234626337.pdf>
- Altunbas, Y., Carbo, S., Gardener, E. P., & Molyneux, P. (2007). Examining the relationships between capital, risk and efficiency in European banking. *European financial management*, 13(1), 49-70. <https://doi.org/10.1111/j.1468-036X.2006.00285.x>

Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). "Bank-Specific, Industry-Specific, and Macroeconomic Determinants of Bank Profitability." *Journal of International Financial Markets, Institutions and Money*, 18(2), 121-136. <https://doi.org/10.1016/j.intfin.2006.07.001>

Athanasoglou, P. P., Delis, M. D., & Staikouras, C. (2006). Determinants of bank profitability in the Southeastern European region. *Journal of Financial Decision Making*, 2, 1-17. <http://dx.doi.org/10.2139/ssrn.4163741>

Beck, T., Demirguc-Kunt, A., & Levine, R. (2004). Finance, inequality, and poverty: Cross-country evidence. <http://doi.org/10.3386/w10979>

Berger, A. N., & Bouwman, C. H. S. (2009). Bank Liquidity Creation. *The Review of Financial Studies*, 22, (9), 3779-3837. <https://EconPapers.repec.org/RePEc:oup:rfinst:v:22:y:2009:i:9:p:3779-3837>

Berger, A. N., & Bouwman, C. H. S. (2013). *How does capital affect bank performance during financial crises?* *Journal of Financial Economics*, 109(1), 73-91. <https://doi.org/10.1016/j.jfineco.2013.02.008>

Berger, A. N., & DeYoung, R. (1997). "Problem loans and cost efficiency in commercial banks." *Journal of Banking & Finance*, 21(6), 849-870. [https://doi.org/10.1016/S0378-4266\(97\)00003-4](https://doi.org/10.1016/S0378-4266(97)00003-4)

Berger, A. N., & Mester, L. J. (1997). Inside the black box: What explains differences in the efficiencies of financial institutions? *Journal of Banking & Finance*, 21(7), 895-947. [http://doi.org/10.1016/S0378-4266\(97\)00010-1](http://doi.org/10.1016/S0378-4266(97)00010-1)

Bernanke, Ben S (1983). "Non-Monetary Effects of the Financial Crisis in the Propagation of the Great Depression." *The American Economic Review*, Vol. 73, No. 3, (June 1983) pp. 257-276. <https://doi.org/10.3386/w1054>

Boudriga, A., Taktak, N. B., & Jellouli, S. (2009). Bank specific, business and institutional environment determinants of nonperforming loans: Evidence from MENA countries. *Economic research forum, working paper* (Vol. 547, pp. 1-28).

Bordeleau, É., & Graham, C. (2010). *The impact of liquidity on bank profitability* (No. 2010-38). Bank of Canada. <https://doi.org/10.34989/swp-2010-38>

Bourke, P. (1989). *Concentration and other determinants of bank profitability in Europe, North America and Australia*. *Journal of Banking & Finance*, 13(1), 65-79. [https://doi.org/10.1016/0378-4266\(89\)90020-4](https://doi.org/10.1016/0378-4266(89)90020-4)

Brunner, Karl; Meltzer, Allan (1969). *An Aggregative Theory for a Closed Economy*. Carnegie Mellon University. *Journal contribution*. <https://doi.org/10.1184/R1/6703592.v1>

Brunnermeier, M. K. (2009). Deciphering the liquidity and credit crunch 2007–2008. *Journal of Economic perspectives*, 23(1), 77-100. <https://doi.org/10.1257/jep.23.1.77>

Brunnermeier, M. K., & Pedersen, L. H. (2007). Market liquidity and funding liquidity. *The Review of Financial Studies*, 22(6), 2201-2238. <https://doi.org/10.3386/w12939>

Cassel, G. (1923). *The Theory of Social Economy*. T. Fisher Unwin.

Cornett, M. M., McNutt, J. J., Strahan, P. E., & Tehranian, H. (2011). Liquidity risk management and credit supply in the financial crisis. *Journal of Financial Economics*, 101(2), 297-312. <https://doi.org/10.1016/j.jfineco.2011.03.001>

- Demirgüç-Kunt, A., & Huizinga, H. (1999). *Determinants of commercial bank interest margins and profitability: Some international evidence*. *The World Bank Economic Review*, 13(2), 379–408. <https://doi.org/10.1093/wber/13.2.379>
- Demirgüç-Kunt, A., & Levine, R. (2001). *Financial structure and economic growth: A cross-country comparison of banks, markets, and development*. MIT Press.
- Demirgüç-Kunt, A., & Huizinga, H. (2010). Bank activity and funding strategies: The impact on bank profitability. *Journal of Financial Stability*, 6(3), 211-231. <https://doi.org/10.1016/j.jfineco.2010.06.004>
- DeYoung, R., & Torna, G. (2013). Nontraditional banking activities and bank failures during the financial crisis. *Journal of Financial Intermediation*, 38, 42-61. <http://doi.org/10.2139/ssrn.2032246>
- Dietrich, A., & Wanzenried, G. (2011). Determinants of bank profitability before and during the crisis: Evidence from Switzerland. *Journal of International Financial Markets, Institutions and Money*, 21(3), 307–327. <https://doi.org/10.1016/j.intfin.2010.11.002>
- Do, H., Ngo, T & Phung, Q. (2020). The effect of non-performing loans on profitability of commercial banks: Case of Vietnam. *Accounting*, 6(3), 373-386. <https://doi.org/10.5267/j.ac.2020.1.001>
- Douglas, C. H. (1924). *Social credit*. Twayne Publishers
- Fisher, I., & Lehmann, F. (1936). 100% Money again [with Rejoinder]. *Social Research*, 3(2), 236–244. <http://www.jstor.org/stable/40981592>
- Flamini, V., McDonald, C. A., & Schumacher, L. (2009). The determinants of commercial bank profitability in Sub-Saharan Africa. IMF Working Papers, 09/15. <http://doi.org/10.5089/9781451871623.001>
- Friedman, M., & Schwartz, A. (1963). *A Monetary History of the United States, 1867-1966*. The Princeton University Press.
- García-Herrero, A., Gavilá, S., & Santabárbara, D. (2009). What explains the low profitability of Chinese banks? *Journal of Banking & Finance*, 33(11), 2080-2092. <https://doi.org/10.1016/j.jbankfin.2009.05.005>
- Golin, J., & Delhaise, P. (2001). *The bank credit analysis handbook: a guide for analysts, bankers and investors*. John Wiley & Sons.
- Gurley, J. G. (1960). *Money in a Theory of Finance*.
- Hahn, A. C. (1920). *Volkswirtschaftliche Theorie des Bankkredits*. Tübingen: J.C.B. Mohr.
- Hawtrey, R. G. (1919). *Currency and Credit*. Longmans, Green and Co.
- Kithinji, A. M. (2010). Credit risk management and profitability of commercial banks in Kenya. *School of Business, University of Nairobi*. <http://erepository.uonbi.ac.ke/bitstream/handle/11295/40437/aibuma2011-submission232.pdf>
- Kopecky, K. J., & Van Hoose, D. (2004). Capital Regulation, Bank Risk-Taking, and the Relationship Between Capital and Profitability. *Journal of Financial Services Research*, 25(2), 233-257.
- Kosmidou, K. (2008). The determinants of banks' profits in Greece during the period of EU financial integration. *Managerial*

finance, 34(3), 146-159. [10.1108/03074350810848036](https://doi.org/10.1108/03074350810848036)

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>

Lartey, V. C., Antwi, S., & Boadi, E. K. (2013). The relationship between liquidity and profitability of listed banks in Ghana. *International journal of business and social science*, 4(3), 48-56. https://ijbssnet.com/journals/Vol_4_No_3_March_2013/5.pdf

Le, H. D., & Hoang, T. T. (2017). The impact of macroeconomic variables on bank profitability in Vietnam. *Journal of Economics and Development*, 19(3), 95-108.

Lepetit, L., Nys, E., Rous, P., & Tarazi, A. (2008). Bank income structure and risk: An empirical analysis of European banks. *Journal of Banking & Finance*, 32(8), 1452-1467. <https://doi.org/10.1016/j.jbankfin.2007.12.002>

Li, Y., Yang, X., & Zhang, C. (2021). The effect of revenue diversification on bank profitability and risk during the COVID-19 pandemic. *Journal of Banking and Finance*, 120, 105-128. <https://doi.org/10.1016/j.frl.2021.101957>

MacLeod, H. D. (1856). The Theory and Practice of Banking, 2 vols., London: Longman,

Molyneux, P., & Thornton, J. (1992). Bank efficiency and profitability: A survey of the empirical literature. *Journal of Banking & Finance*, 16(6), 873-882. [https://doi.org/10.1016/0378-4266\(92\)90065-8](https://doi.org/10.1016/0378-4266(92)90065-8)

Nguyen, L. H (2023). Ngân hàng Nhà nước chuyển giao bắt buộc CBBank, OceanBank, GPBank, DongABank. *Lao Động*. <https://laodong.vn/tien-te-dau-tu/ngan-hang-nha-nuoc-chuyen-giao-bat-buoc-cbbank-oceanbank-gpbank-dongabank-1187676.ldo>

Onwumere, J. U. J., Onudugo, V., & Ibe, I. (2013). Financial structure and economic growth: Evidence from Nigeria. *Global Journal of Management and Business Research Finance*, 13(5), 1-9. <https://10.1504/IJBEM.2009.023446>

Pasiouras, F., & Kosmidou, K. (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance*, 21(2), 222–237. <https://doi.org/10.1016/j.ribaf.2006.03.007>

Perry, P. (1992). Do banks gain or lose from inflation? *Journal of Retail Banking*, 14(2), 25-30. https://go.gale.com/ps/i.do?id=GALE%7CA12634781&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=01952064&p=AONE&sw=w&userGroupName=tacoma_comm&aty=ip

Philippon, T. (2016). *The fintech opportunity* (No. w22476). National Bureau of Economic Research. <https://doi.org/10.3386/w22476>

Said, R. M., & Tumin, M. H. (2011). Performance and financial ratios of commercial banks in Malaysia and China. *International Review of Business Research Papers*, 7(2), 157-169. <https://doi.org/10.2139/ssrn.1663612>

Saunders, A., & Schumacher, L. (2000). The determinants of bank interest rate margins: An international study. *Journal of International Money and Finance*, 19(6), 813-832. [https://doi.org/10.1016/S0261-5606\(00\)00033-4](https://doi.org/10.1016/S0261-5606(00)00033-4)

Tan, Y. (2014). *Performance, risk and competition in the Chinese banking industry*. Oxford: Chandos Publishing.

Tan, Y., & Anchor, J. (2016). Stability and profitability in the Chinese Banking Industry: Evidence from an auto-regressive-distributed linear specification. *Investment Management and Financial Innovations*, 13(4), 120-128.

Tan, Y., & Floros, C. (2012a). Bank profitability and inflation: The case of China. *Journal of Economic Studies*, 39(6), 675–696.

Tan, Y., & Floros, C. (2012b). Bank profitability and GDP growth in China: A note. *Journal of Chinese Economics and Business Studies*, 10(3), 267–273.

Tan, Y., & Floros, C. (2012c). Stock market volatility and bank performance in China. *Studies in Economics and Finance*, 29(3), 211–228.

Tan, Y., & Floros, C. (2014). Risk, profitability and competition: Evidence from the Chinese banking. *Journal of Developing Areas*, 48(3), 303–319.

Tan, Y., Floros, C., & Anchor, J. (2017). The profitability of Chinese banks: Impacts of risk, competition and efficiency. *Review of Accounting and Finance*, 16(1), 86–105.

Thinh, T. M. H., Trang, T. T. Q., & Thao, N. T. T. (2021). The impact of liquidity on profitability – Evidence of Vietnamese listed commercial banks. *Banks and Bank Systems*, 17(1), 11-22. [https://doi.org/10.21511/bbs.17\(1\).2022.02](https://doi.org/10.21511/bbs.17(1).2022.02)

Truong, T. H. L. (2024). Đánh giá mức độ an toàn trong hoạt động của các ngân hàng thương mại Việt Nam giai đoạn 2021 - 2023. *Tạp chí Ngân hàng*. <https://tapchinganhang.gov.vn/danh-gia-muc-do-an-toan-trong-hoat-dong-cua-cac-ngan-hang-thuong-mai-viet-nam-giai-doan-2021-2023.htm>

Wicksell, K. (1898). *Geldzins und Güterpreise*. Jena: Fischer.

Withers, H. (1909). The Meaning of Money. <https://doi.org/10.2307/2221441>

Withers, H. (1916). *The Business of Finance*.

UP-GRADING ORGANIZATION ETHICS: INDISPENSABLE IN PROMOTING WELL-BEING OF HUMAN RESOURCES AND ORGANIZATIONS

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Abstract

In all types of organizations, all the members, irrespective of their job positions in the hierarchy are required to be well-versed in terms of ways of reinforcing organization ethics. They need to put into operation the methods and strategies to up-grade organization ethics. The members cannot carry out job duties in seclusion. It is of utmost significance to be well-equipped in terms of the factor that promoting teamwork and working in collaboration and integration will contribute in up-grading organization ethics. The human resources need to put emphasis on honing of their educational qualifications, competencies and abilities to do well in their jobs, achieve organizational goals and carry out the overall functioning of the organization in an efficacious manner. Furthermore, up-gradation of organization ethics will take place. The important factors that need to be taken into account are, making provision of equal rights and opportunities to all; not discriminating against others; treating others with respect and courtesy; forming positive viewpoints in terms of various aspects of the organizations; making wise and productive decisions and augmenting knowledge, skills and abilities. These factors need to be reinforced throughout the job duties of the individuals. Therefore, it is well-understood, up-grading organization ethics is indispensable in promoting well-being of human resources and organizations. The main concepts that are taken into account in this research paper are, understanding the meaning and significance of organization ethics, strategies for leading to up-gradation of organization ethics and benefits of organization ethics.

Keywords: *Functioning, Job Duties, Job Satisfaction, Methods, Organization Ethics, Strategies, Well-being*

In all types of organizations, production, manufacturing, services, educational institutions, training centres, financial institutions and so forth, it is necessary for all the members, irrespective of their job positions in the hierarchy to be well-equipped in terms of organization ethics. Organization ethics comprises of the ways in accordance to which the individuals conduct themselves and respond to the external stimuli (Todd, 2019). The overall functioning of the organization takes place in accordance to the factors within the internal and external environment. The individuals in leadership positions are vested with the authority and responsibility of formulating laws and rules. They need to provide equal rights and opportunities to all individuals and ensure, there is not any discrimination on the basis of any factors. The individuals are different from each other on the basis of number of factors, i.e. caste, creed, race, religion, ethnicity, gender,

age, cultures and socio-economic backgrounds. The job duties are given to the individuals on the basis of their educational qualifications, competencies and abilities. But they need to be treated equally. Therefore, providing equal rights and opportunities to all individuals is one of the crucial strategies for leading to up-gradation of organization ethics.

The members of the organization need to treat each other with respect and courtesy. Whether they are superiors or subordinates or colleagues, they need to communicate with each other in a respectful manner. When they are communicating with each other, they need to make use of polite language and decent words. The information imparted should be factual and meaningful. When they are overwhelmed by any problems or difficulties, they should make provision of help and assistance (Epley & Kumar, 2019). The members should focus upon the implementation of job duties with honesty and truthfulness. When they are doubtful or are unaware in terms of the methods or procedures, they need to ensure, they clear their doubts. Honing of interactive abilities will enable the members to augment their knowledge, competencies and abilities. The members need to form positive viewpoints and develop motivation towards the implementation of job duties. Therefore, treating each other with respect and courtesy and depicting honesty and truthfulness are regarded as indispensable strategies for leading to up-gradation of organization ethics.

The individuals need to inculcate the traits of diligence, resourcefulness and conscientiousness. Some job duties are manageable, whereas, in case of others, there are occurrence of complications. Some job duties are less time consuming, whereas, others are more time consuming. But the inculcation of these traits will enable the members to do well in their jobs, cope with problems and generate the desired outcomes. When the individuals are required to make use of modern, scientific and innovative methods, they may experience difficulties. Hence, these traits will enable them to overcome the difficulties in a well-organized manner. Furthermore, the individuals will incur the feeling of job satisfaction. The individuals need to be well-equipped in terms of traits of helpfulness and co-operation. The members need to work in co-operation with each other to do well in their job duties, achieve organizational goals and lead to up-gradation of the overall structure of the organizations. Therefore, it is well-understood, inculcation of the traits of diligence, resourcefulness and conscientiousness and depicting the traits of helpfulness and co-operation are notable strategies for leading to up-gradation of organization ethics.

Understanding the Meaning and Significance of Organization Ethics

Human resources are regarded as the assets of the organization. They need to make use of their educational qualifications, competencies and capabilities in a satisfactory manner to do well in their jobs, achieve organizational goals and lead to up-gradation of the overall structure of the organizations. The heads and supervisors need to implement the measures to ensure the employees feel comfortable within the workplace. When they will feel comfortable, only then they will be able to concentrate on their job duties in a well-organized manner. Furthermore, the workforce will overcome the feelings of apprehensiveness and vulnerability. The working environmental conditions need to be created in such a manner that the employees are able to concentrate on their job duties appropriately. The employees need to form positive viewpoints in terms of various factors and develop motivation towards the implementation of job duties. Therefore, the members are able to understand the meaning and significance of organization ethics, when they prove to be favourable in doing well in one's job duties and in generating the desired outcomes.

In all types of organizations, there are organizational goals, i.e. being well-equipped in terms of job duties and responsibilities; being informative in terms of methods and approaches; leading to an increase in productivity and profitability; making use of modern, scientific and innovative methods in the implementation of job duties; organizing seminars and workshops; leading to enrichment of training and development programs; satisfying customer requirements; promoting employee well-being; coping with problems and challenges in a well-organized manner; inculcating the traits of morality, diligence, resourcefulness and conscientiousness; forming cordial and amiable terms and relationships with each other and leading to up-gradation of the overall structure of the organizations. The up-gradation of organization ethics will render an important contribution in forming the conduct of the workforce in such a manner that they will put in efforts to their best abilities to achieve all the organizational goals. Therefore, the members are able to understand the meaning and significance of organization ethics, when they contribute in an efficient manner in achieving organizational goals.

It is apparently understood that within the course of implementation of job duties, there are occurrence of issues. These are related to various factors, i.e. job duties, responsibilities, goals, objectives, time period, resources, materials, technologies and so forth. The job duties, responsibilities, goals, and objectives need to be well-understood by the members. When they are lengthy, there should be availability of sufficient amount of time. Furthermore, there should be availability of resources, materials, and technologies in an appropriate manner. The employees need to be well-equipped in terms of job duties and responsibilities and methods and approaches to put them into operation. Furthermore, employees need to put emphasis on honing of analytical, critical thinking, and problem-solving skills. The up-gradation of organization ethics will render an important contribution in enabling the workforce in such a manner that they will put in efforts to their best abilities to cope with various types of issues. When the issues are experienced in a major form, they may give rise to impediments within the course of putting into operation various job duties. Therefore, throughout their jobs, the workforce understand the meaning and significance of organization ethics.

Strategies for Leading to Up-gradation of Organization Ethics

When recruitment and selection of the individuals takes place, there are various factors that need to be taken into account, i.e. educational qualifications, skills, abilities, personality traits, job experience and demographic factors. This is comprehensively understood that all the members of the organization need to be informative in terms of methods and approaches that are required to do well in their job duties and to generate the desired outcomes. Apart from these, they need to be informative regarding the strategies for leading to up-gradation of organization ethics. The possession of adequate information in terms of the strategies will enable the individuals to retain their jobs (Ethics in Business, n.d.). The individuals in leadership positions are vested with the authority and responsibility of imparting information among the workforce in terms of these strategies. After they have acquired efficient information in terms of these strategies, they need to form constructive viewpoints. Furthermore, they need to put in efforts to their best abilities to do well in their jobs and generate the desired outcomes. Strategies for leading to up-gradation of organization ethics are stated as follows:

Providing Equal Rights and Opportunities to all Individuals

The individuals in leadership positions are vested with the authority and responsibility of formulating

laws and rules. Laws and rules need to be formulated to lead to overall functioning of the organization in a well-organized and disciplined manner. One of the important law is, heads, directors and supervisors need to provide equal rights and opportunities to all individuals. Furthermore, they need to ensure, there is not any discrimination on the basis of any factors. The individuals are different from each other on the basis of number of factors. The members need to accept these differences and form positive viewpoints in terms of all other individuals. They need to understand that in order to enhance their career prospects, they need to form cordial relationships with others and treat others equally. The job duties and responsibilities are given to the individuals on the basis of their educational qualifications, competencies and abilities. But they need to be treated equally. Therefore, providing equal rights and opportunities to all individuals is one of the significant strategies for leading to up-gradation of organization ethics.

Formulation of Anti-Discriminatory Laws

The individuals in leadership positions need to focus on formulation of anti-discriminatory laws. The individuals are different from each other on the basis of number of factors. Their personality traits, cultures, educational qualifications, competencies, abilities and natures are different from each other. The members need to accept these differences and form positive viewpoints in terms of all other individuals. Both men and women should be given equal pay for the same job duties performed. The job duties and responsibilities are given to the individuals on the basis of their educational qualifications, competencies and abilities. But they need to be provided with equal treatment. When changes are to be brought about in any aspects and there are organization of discussion meetings, in such cases, it needs to be ensured all the members are provided with the opportunities to have a say. These laws will enable the individuals to develop motivation towards the implementation of their job duties and responsibilities. Therefore, formulation of anti-discriminatory laws is an indispensable strategy for leading to up-gradation of organization ethics.

Treating each other with Respect and Courtesy

The members of the organization need to treat each other with respect and courtesy. Whether they are superiors or subordinates or colleagues, they need to communicate with each other in a respectful manner. All the members are overwhelmed with number of job duties and responsibilities. When they are occupied with busy schedules and their colleagues or subordinates ask for any assistance, they should be communicated with in a respectful manner. On the other hand, when superiors assign additional job duties to their subordinates, they should not feel frustrated. When they are communicating with each other, they need to make use of polite language and decent words. The information imparted should be factual and meaningful. When individuals are overwhelmed by any problems or difficulties, they should make provision of help and assistance to each other. Furthermore, the individuals need to exercise control on the psychological problems of anger, stress, anxiety and frustration. Therefore, treating each other with respect and courtesy is an important strategy for leading to up-gradation of organization ethics.

Depicting Honesty and Truthfulness

The members should focus upon the implementation of job duties with honesty and truthfulness. The job duties and responsibilities are of different types, i.e. working on projects and assignments, preparing reports, getting engaged in production and manufacturing processes, dealing with clients and so forth. Hence, in putting into operation all types of job duties, the members need to ensure, they strengthen honesty and

truthfulness. These traits need to be reinforced throughout the job duties of members. When individuals are doubtful or are unaware in terms of the methods or procedures, they need to ensure, they clear their doubts. Furthermore, they need to ensure, there are not occurrence of any impediments within the course of implementation of job duties and responsibilities. Honing of interactive abilities and conducting research on regular basis will enable the members to augment their knowledge, competencies and abilities. In addition, all the members need to form positive viewpoints and develop motivation towards the implementation of job duties. Therefore, depicting honesty and truthfulness is a vital strategy for leading to up-gradation of organization ethics.

Inculcation of the Traits of Diligence, Resourcefulness and Conscientiousness

The individuals need to inculcate the traits of diligence, resourcefulness and conscientiousness throughout their jobs. The major benefits of these traits is, they will enable the members to acquire an efficient understanding in terms of methods and strategies. Furthermore, they will cope with various types of problems in a well-organized manner. Some job duties are manageable, whereas, in case of others, there are occurrence of complications. Some job duties are less time consuming, whereas, other tasks and activities require more amount of time. But the inculcation of these traits will enable the members to do well in their jobs, cope with problems and generate the desired outcomes. When the individuals are required to make use of modern, scientific and innovative methods, they may experience difficulties. Hence, these traits will enable them to overcome the difficulties in a well-organized manner. Furthermore, the individuals will do well in their jobs and incur the feeling of job satisfaction. Therefore, inculcation of the traits of diligence, resourcefulness and conscientiousness is a crucial strategy for leading to up-gradation of organization ethics.

Depicting the Traits of Helpfulness and Co-operation

The individuals need to be well-equipped in terms of traits of helpfulness and co-operation. These need to be depicted throughout their job duties. It is apparent that within the course of implementation of job duties, there are occurrence of problems. These can be solved on one's own as well as through obtaining support from others. Hence, all the members, irrespective of their job positions need to reinforce the traits of helpfulness and co-operation. They should be aware that when they will be overwhelmed by problems, they will have to approach others. On the other hand, others may also approach them for help. Furthermore, they need to understand that these traits will enable them to acquire appreciation and reverence. As a consequence, the individuals will incur the feeling of job satisfaction and retain their jobs. The members need to work in co-operation with each other to do well in their job duties, achieve organizational goals and lead to up-gradation of the overall structure of the organizations. Therefore, depicting the traits of helpfulness and co-operation is a noteworthy strategy for leading to up-gradation of organization ethics.

Promoting Teamwork

The job duties and responsibilities can be put into operation on an individual basis as well as in teams. The research studies have indicated that supervisors and employers form the viewpoint that promoting teamwork is enriching and favourable to the overall functioning of the organizations. When the members work in collaboration and integration with each other, they are able to render an important contribution in reinforcing organization ethics. Promoting teamwork will lead to up-gradation of organization ethics and overall functioning of the organization in an effective manner. When the workforce is working in a team,

they will generate information in terms of various aspects, provide solutions to various problems and obtain assistance from each other in doing well in their job duties and achieving organizational goals. The job duties gets divided among individuals in accordance to their educational qualifications, competencies and abilities. As a consequence, the members develop motivation towards putting into operation job duties and responsibilities. Therefore, it can be stated, promoting teamwork is a favourable strategy for leading to up-gradation of organization ethics.

Leading to Enrichment of Training and Development Programs

When the employees get recruited within organizations, they are required to get enrolled in training and development programs. The duration of these programs may be from one week to six months. There is recruitment of well-qualified and proficient trainers in order to lead to enrichment of these programs. In these programs, information is imparted to them in terms of various aspects of the organizations, i.e. history, personnel, departments, goals, mission, job duties, responsibilities, methods, approaches, strategies, laws, rules, amenities, facilities, technologies, materials and the overall structure of the organization. Furthermore, the individuals also acquire an efficient understanding in terms of strategies for leading to up-gradation of organization ethics (Curated Resources, 2021). Hence, implementing ways to lead to enrichment of training and development programs is regarded as an eminent strategy for leading to up-gradation of organization ethics. Within the course of implementation of job duties, the members need to be informative in terms of pioneering methods. Hence, they get enrolled in these programs. Therefore, leading to enrichment of training and development programs is a prominent strategy for leading to up-gradation of organization ethics.

Putting Emphasis on Employee Well-Being

Employees are regarded as the assets of the organization. They need to make use of their educational qualifications, skills and abilities in an efficient manner to do well in their jobs and lead to up-gradation of the overall structure of the organizations. The heads and supervisors need to implement the measures to promote employee well-being. The various factors that need to be taken into account to carry out this task in a suitable manner are, formulating laws and rules; making wise and productive decisions; providing amenities, facilities, technologies, and materials; leading to enrichment of training and development programs; implementing grievance redresser procedures; ensuring employees are not overloaded with work; providing meaningful solutions to their problems; providing equal rights and opportunities to all the employees; giving rewards and incentives and creating an amiable environment within the workplace. Furthermore, these factors will facilitate the up-gradation of organization ethics in a satisfactory manner. Therefore, putting emphasis on employee well-being is a strategy for leading to up-gradation of organization ethics, which has been acknowledged in all types of organizations.

Focusing on Enhancement of Safety Measures

The health of the workforce is important. They need to ensure they put into operation the measures that would promote good health, physically as well as psychologically. The job duties in various industries and factories are hazardous. These are diamond polishing, gem cutting, silk weaving, beedi rolling, plantations, coal mines, lock industries and so forth. When the workforce are putting into operation their job duties, they need to take safety measures. The workforce need to utilize safety gear and apparatus and the working

environmental conditions need to be safe. It is the job duty of the supervisors to promote safety measures. When the workforce is required to make use of tools, machines, chemicals and other materials, which may have unfavourable effects upon their health conditions, they are required to take safety measures. Furthermore, there should be formulation of laws against crime and violence. The communication processes need to take place in an effective manner and individuals should treat each other with respect and courtesy. Therefore, focusing on enhancement of safety measures is a strategy for leading to up-gradation of organization ethics, which has contributed in promoting good health and well-being physically and psychologically.

Benefits of Organization Ethics

All the members of the organization, throughout their job duties need to be well-versed in terms of meaning and significance of organization ethics (Organizational Ethics and Management, 2014). The human resources are required to make use of their educational qualifications, skills and abilities in an efficient manner to do well in their jobs, achieve organizational goals and carry out the overall functioning of the organizations in an appropriate manner. These tasks can be facilitated, when they are well-versed in terms of organization ethics. The individuals need to acknowledge organization ethics in the implementation of all types of job duties and activities. The important aspect that needs to be taken into account is, within the course of implementation of job duties individually or in groups, organization ethics need to be acknowledged. Benefits of organization ethics are, doing well in one's job duties; forming cordial and sociable terms and relationships with each other; up-grading usefulness and effectiveness; developing motivation towards the implementation of job duties; promoting well-being and goodwill and carrying out the overall functioning of the organization in a satisfactory manner. These are stated as follows:

Doing well in one's Job Duties

In order to do well in one's job duties, the individuals not only need to be informative in terms of methods and approaches, but they need to reinforce organization ethics. The reinforcement of organization ethics is regarded as one of the key factors to do well in one's jobs. The individuals need to make use of their educational qualifications, competencies and abilities in an efficient manner to do well in their jobs. Furthermore, they need to be professional in their conduct. When the individuals are overwhelmed by any problems and difficulties, they are required to provide solutions to them in an effective manner. They need to be prevented from giving rise to impediments within the course of implementation of tasks and activities. Therefore, doing well in one's job duties is regarded as one of the indispensable benefits of organization ethics.

Forming Cordial and Sociable Terms and Relationships with each other

It is apparently understood that within the course of implementation of job duties, there are occurrence of situations, which require working in collaboration and integration with each other. The employees need form cordial and sociable terms and relationships with each other. These are regarded as essential to do well in one's job duties, achieve organizational goals, carry out job duties in accordance to the expectations of the supervisors and lead to enhancement of the overall structure of the organization. The up-gradation of organization ethics will render an important contribution in enabling the workforce in such a manner that they will put in efforts to their best abilities to develop mutual understanding with each other. As a

consequence, they will be able to generate the desired outcomes. Therefore, forming cordial and sociable terms and relationships with each other is one of the significant benefits of organization ethics.

Up-grading Usefulness and Effectiveness

In putting into operation all types of job duties, the members need to ensure, they up-grade usefulness and effectiveness. These traits need to be strengthened throughout the job duties of members. When individuals are unsure or are uninformed in terms of the techniques or measures, they need to ensure, they augment their knowledge and understanding. Furthermore, they need to ensure, there are not occurrence of any impediments within the course of implementation of any types of job duties and responsibilities. Honing of interactive abilities and conducting research on regular basis will enable the members to augment their knowledge, competencies and abilities. Furthermore, they will be able to carry out their job duties in a useful and effective manner. This is facilitated through acknowledging organization ethics. Therefore, it can be stated, up-grading usefulness and effectiveness is a meaningful benefit of organization ethics.

Developing Motivation towards the implementation of Job Duties

The individuals in leadership positions are vested with the authority and responsibility of putting into operation the strategies in such a manner that would enable the workforce to develop motivation towards the implementation of job duties. The various aspects that develop motivation among the workforce are, giving of rewards and incentives; providing promotional opportunities; appreciating and conveying information in terms of pioneering methods; providing solutions to their problems; possessing an approachable nature and an amiable attitude; making use of modern, scientific and innovative methods in the implementation of job duties; organizing seminars and workshops; leading to enrichment of training and development programs; creating an amiable environment and leading to up-gradation of the overall structure of the organization. Understanding organization ethics will enable the individuals to develop motivation. Therefore, developing motivation towards the implementation of job duties is a vital benefit of organization ethics.

Promoting Well-Being and Goodwill

The acquisition of knowledge in terms of organization ethics will contribute in promoting well-being and goodwill. The members of the organization aim to promote well-being and goodwill of the overall structure of the organization. These factors are considered meaningful in terms of the employees as well as the organization as a whole. Hence, all the members need to recognise the meaning and significance of these factors. The human resources will put into operation all the measures that will enable them to implement job duties in accordance to the expectations of their supervisors; achieve organizational goals and lead to up-gradation of the overall structure of the organization. When the human resources are successful within the course of implementation of these tasks, they will contribute significantly in promoting well-being and goodwill. The members need to focus upon promoting these traits throughout the implementation of their job duties. Therefore, promoting well-being and goodwill is a fundamental benefit of organization ethics.

Carrying out the overall Functioning of the Organization in a Satisfactory Manner

In carrying out the overall functioning of the organization in a satisfactory manner, there are number of aspects that need to be taken into account by the members. These are, formulating laws and rules; being well-equipped in terms of job duties and responsibilities; being informative in terms of methods and approaches; augmenting analytical, critical thinking and problem-solving skills; making use of modern,

scientific and innovative methods in the implementation of job duties; implementing time management skills; coping with problems and challenges in a well-organized manner; inculcating the traits of morality, diligence, resourcefulness and conscientiousness; forming cordial and amiable terms and relationships with each other; possessing the abilities to work under stress and conducting research on regular basis. The acquisition of knowledge in terms of organization ethics will contribute efficiently in the implementation of all these factors. Therefore, carrying out the overall functioning of the organization in a satisfactory manner is a central benefit of organization ethics.

Conclusion

Organization ethics comprises of the ways in accordance to which the individuals conduct themselves and responds to the external motivations. Strategies for leading to up-gradation of organization ethics are, providing equal rights and opportunities to all individuals, formulation of anti-discriminatory laws, treating each other with respect and courtesy, depicting honesty and truthfulness, inculcation of the traits of diligence, resourcefulness and conscientiousness, depicting the traits of helpfulness and co-operation, promoting teamwork, leading to enrichment of training and development programs, putting emphasis on employee well-being and focusing on enhancement of safety measures. Benefits of organization ethics are, doing well in one's job duties; forming cordial and sociable terms and relationships with each other; up-grading usefulness and effectiveness; developing motivation towards the implementation of job duties; promoting well-being and goodwill and carrying out the overall functioning of the organization in a satisfactory manner. Finally, it can be stated, up-gradation of organization ethics will prove to be favourable to the members and the organization as a whole.

Bibliography

- Curated Resources Organizational Ethics. (2021). Ethics Unwrapped. Retrieved December 22, 2021 from ethicsunwrapped.utexas.edu
- Epley, N., & Kumar, A. (2019). How to Design an Ethical Organization. Harvard Business Review. Retrieved December 22, 2021 from hbr.org
- Ethics in Business. (n.d.). Ethics, an Overview. Retrieved December 22, 2021 from courses.lumenlearning.com
- Organizational Ethics and Management. (2014). Retrieved December 22, 2021 from ispatguru.com
- Todd. (2019). Honing Your Leadership Traits. Major Projects Association. Retrieved December 22, 2021 from majorprojects.org

THE UNDERLYING DRIVERS OF CSR PRACTICES: A PATHWAY TO SUSTAINABLE BUSINESS PRACTICES

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Abstract

The aim of the study is to explore the key drivers of Corporate Social Responsibility (CSR) practices in Bangladeshi manufacturing SMEs and examines their impact on sustainable business performance (SBP). Using a qualitative approach grounded in critical realism, the research identifies six CSR dimensions: philanthropic, environmental, social, ethical, legal, and economic. Data were collected through 20 semi-structured interviews with SME leaders, regulatory officials, and NGO executives, and analyzed using NVivo 11 to uncover key themes and sub-themes. The findings reveal that CSR practices are primarily driven by stakeholder engagement, regulatory compliance, and sustainability goals. CSR adoption provides SMEs with competitive advantages such as enhanced reputation, customer loyalty, and financial growth. However, barriers like profit-driven mindsets and weak regulatory enforcement limit broader implementation. By integrating the Stakeholder-and-Resource-Based View (SRBV) framework, the study addresses gaps in existing CSR literature and offers actionable recommendations for policymakers and business leaders to promote sustainable practices and strengthen stakeholder relationships in emerging economies.

Keywords: *Corporate Social Responsibility (CSR), Qualitative Approach, Small and Medium-sized Enterprise (SMEs), Sustainable Business Performance (SBP).*

1. Introduction

Corporate Social Responsibility (CSR) has gained significant attention for its role in driving sustainable business practices and societal impact (Oduro et al., 2024; Al-Omouh, 2024). Businesses engage with various stakeholders, including employees, customers, governments, and communities, forming a social contract that obligates them to meet societal expectations (Constantinescu & Kaptein, 2020). Effective CSR practices improve organizational performance and long-term sustainability (Bhutto, 2024; Ahsan, 2024).

However, existing research often focuses on CSR outcomes rather than the underlying drivers, particularly at the decision-making level (Wirba, 2024). Exploring these drivers can provide a deeper understanding of how CSR aligns with business strategies. Despite growing recognition of CSR as a sustainability framework, there remains a gap between awareness and implementation. The United Nations Industrial Development Organization (UNIDO) highlighted CSR's role in addressing economic, social, and environmental challenges critical to achieving the Sustainable Development Goals (SDGs) (Canton, 2021). Research shows that CSR contributes to competitive advantage and financial performance (Xuetong et al., 2024; Giannopoulos et al., 2024). However, the mechanisms behind these benefits are not well understood (Coelho et al., 2023). Business leaders must therefore integrate CSR into their strategies to achieve long-term sustainability (Sattar et al., 2024; Agu et al., 2024).

Accordingly, effective decision-making requires balancing profitability with social and environmental responsibilities (Xuetong et al., 2024). Businesses depend on the communities they serve and must address societal expectations through CSR initiatives (Adewole, 2024; Aldalaty & Piranej, 2024). Although many leaders recognize CSR's importance, few implement sustainable leadership strategies for competitive advantage (Ganesh & Venugopal, 2024; Fosu & Asiedu, 2024). Reluctance to adopt CSR-driven skills, particularly in profit-focused industries, remains a barrier (Awad & Martín-Rojas, 2024). Bridging this gap is essential to achieving sustainable growth and integrating CSR into core business operations. Moreover, CSR drivers—philanthropic, environmental, social, ethical, legal, and economic—are critical for understanding how businesses engage with society and achieve sustainable performance. These drivers offer insights into the factors motivating companies to adopt CSR practices, balancing ethical responsibilities with financial success. However, many Bangladeshi organizations face challenges in implementing sustainability initiatives due to limited CSR knowledge and competencies (Ali et al., 2024; Khan et al., 2023). Addressing this gap requires a comprehensive understanding of CSR drivers and their integration into business strategies to promote sustainable growth.

This study contributes to the literature by exploring the relationship between CSR and sustainable business performance (SBP), particularly in Bangladeshi SMEs. First, it addresses the uncertainty surrounding CSR's impact on SBP, offering practical insights for businesses to enhance employee engagement and organizational performance. Second, it investigates key CSR drivers and motivations, identifying sector-specific challenges and opportunities. Grounded in Stakeholder-and-Resource-Based View (SRBV) theories, the study demonstrates how businesses can strategically leverage stakeholder resources to improve outcomes. The findings offer valuable recommendations to foster socially responsible, sustainable business environments in Bangladesh. The study is organized into distinct sections. The following section explains theoretical foundation associated with proposition, the research methodology and presents the findings. The final section highlights the study's limitations and suggests future research directions.

2. Theoretical Foundations Associated with Proposition

Corporate Social Responsibility (CSR) has been explored across disciplines like international political economy and management, each offering unique insights. While international political economy examines corporate influence on global governance, it often overlooks firm-level dynamics (Fatima & Elbanna, 2023; Frynas & Stephens, 2015). In contrast, management studies focus on CSR's link to financial performance

(Mehedi & Jalaludin, 2020). However, both perspectives fail to fully capture how firms engage stakeholders and adapt to evolving environments. Recent research highlights internal and external drivers of CSR, with external pressures including regulatory compliance, customer demands, and societal expectations (Dartey-Baah & Amoako, 2021), while internal drivers involve cost reduction, risk management, and reputation building (Vitolla et al., 2016). Institutional theories emphasize external influences (Wang et al., 2024); whereas the Resource-Based View (RBV) focuses on leveraging internal resources (Ferreira & Ferreira, 2024). To bridge these gaps, scholars propose an integrated framework combining Stakeholder and Grounded Theories, forming the Stakeholder-and-Resource-Based View (SRBV). The SRBV underscores balancing internal resource optimization with stakeholder management to achieve sustainable competitive advantage. This theoretical framework provides a holistic approach to understanding CSR, linking organizational strategies with broader social and environmental responsibilities for long-term sustainability. Furthermore, Freeman et al. (2021) stakeholder theory expanded traditional shareholder perspectives by asserting that companies have economic, environmental, and social responsibilities toward all individuals and groups affected by their actions (Ditlev-Simonsen & Wenstøp, 2013). Stakeholders, acting as agents of social change, influence businesses to address social issues within their operations (Uttam et al., 2024). Both internal and external stakeholders can pressure firms to minimize negative impacts and promote positive outcomes, driving improvements in sustainability and financial performance (Nguyen et al., 2023; Qiu et al., 2020). Meeting stakeholder expectations enhances a company's legitimacy, reputation, and long-term success (Pfajfar et al., 2022; Stahl et al., 2020). In parallel, the Resource-Based View (RBV) posits that firms achieve sustainable competitive advantage by managing valuable, rare, inimitable, and well-structured resources, such as knowledge and human capital (Reyna-Castillo et al., 2023). The Stakeholder-and-Resource-Based View (SRBV) integrates these theories, emphasizing those internal resources and stakeholder relationships collectively drive value creation (Harjoto et al., 2022; Mani et al., 2020). Managing stakeholders as strategic assets strengthens a firm's competitive position (Nayak et al., 2023).

Moreover, this study adopts SRBV to explore how CSR practices influence sustainable business performance (SBP), particularly within SMEs in emerging economies. The research began by reviewing the historical evolution of CSR, highlighting its growing significance. Theoretical models and CSR frameworks were introduced to support the study, emphasizing that businesses must strategically align their CSR policies with stakeholder expectations. This alignment strengthens stakeholder relationships and enhances long-term sustainability. Two key research propositions were developed within this framework to address the main research question effectively.

Proposition: The proposition claiming that all the underlying drivers and motivating factors behind the CSR practices are necessary or sufficient to affect sustainable business performance of RMG manufacturing SMEs in Bangladesh.

3. Methodology of the Study

This study employed a qualitative research approach grounded in the critical realism paradigm to explore CSR adoption in Bangladesh's manufacturing SMEs. The qualitative design was chosen to capture the experiences and perspectives of business leaders, providing deeper insights that quantitative methods may

overlook (Lim, 2024). The study adhered to COREQ guidelines to ensure methodological rigor (Tong et al., 2007). This approach allowed the research to uncover key themes influencing CSR adoption, providing valuable insights into the mindset of SME leaders and their strategic alignment with sustainability goals (Karunarathna et al., 2024). Data collection involved in-depth interviews, researchers' journaling, and a literature review. In-depth interviews were prioritized to understand participants' motivations and identify patterns in their CSR practices (Scanlan, 2020).

3.1 Sampling and Data Collection

This research used purposive sampling to select enterprises actively engaged in CSR practices. Companies were chosen based on their participation in at least one sustainability initiatives, including the Corporate Sustainability Index (CSI), and UN Global Compact Network. These firms demonstrated a strong commitment to responsible business practices and made significant contributions to Bangladesh's economy, receiving public recognition or CSR awards for their efforts. The sample focused on SMEs to enable theoretical generalization rather than statistical analysis (Maxwell, 2021). Selected companies represented diverse industries and ownership structures to enhance theoretical diversity. Out of 25 potential SMEs in the RMG sector, 11 Global Compact signatories from the southern economic region were identified. However, three companies declined participation due to confidentiality concerns. Furthermore, to validate CSR practices, follow-up interviews were conducted with external stakeholders such as community representatives, authorities, NGOs, CSR activists, and academics, providing objective insights. Primary data were collected through semi-structured interviews with three stakeholder groups: SME top management, regulatory officials, and NGO executives. This format allowed participants to share their views openly while maintaining a structured guideline (Belina, 2023). The interviews were conducted in three phases: SME owners and managers were interviewed first to understand corporate strategies; next, regulatory officials provided insights into legislative frameworks; finally, NGO executives discussed their role in promoting social and environmental practices. The 20 in-depth interviews conducted between July and September 2024 lasted approximately 45 minutes each. All sessions were transcribed and coded for analysis, ensuring comprehensive insights into CSR practices in Bangladesh's manufacturing SMEs.

3.2 Data Analysis Strategies

The study employed thematic analysis to identify explicit and implicit patterns within the data, following Attride-Stirling's (2001) framework and Castleberry and Nolen's (2018) five-step process. Using NVivo 11, qualitative data were screened, coded, and organized into themes and sub-themes aligned with the study's research questions. The analysis involved systematically importing and transcribing documents, coding and classifying texts, and exploring data through queries, charts, and word clouds. This structured approach ensured comprehensive insights by linking emerging themes to the reviewed literature, facilitating a deeper understanding of CSR drivers in Bangladesh's SME sector.

4. Results

This section presents the findings from 20 in-depth semi-structured interviews conducted to explore CSR drivers in Bangladeshi SMEs. Participants included six top management representatives, six NGO executives, and eight government regulatory officials and community representatives. Thematic analysis, guided by Bernard et al. (2016), identified key themes and sub-themes relevant to the research question.

Using NVivo-11, open and axial coding processes helped organize data into meaningful categories. A word frequency query further refined the themes. Saturation was achieved by the 12th interview and confirmed by the 20th, ensuring data reliability (Hagaman & Wutich, 2017; Boddy, 2016). The study identified seven main CSR themes—philanthropic, environmental, social, ethical, legal, economic, and sustainability-oriented responsibilities—along with 19 sub-themes. These themes reflect diverse CSR dimensions within SMEs, offering insights into drivers, barriers, and strategies for promoting sustainable business practices in Bangladesh's manufacturing sector.

4.1 Underlying Drivers and Motivation of CSR

4.1.1 Philanthropic Responsibility (Theme 1)

The analysis reveals that SMEs in Bangladesh view philanthropic responsibility as a core element of their CSR practices, evolving from short-term charitable donations to strategic, long-term community investments. Initially, companies focused on sponsorships and donations to support local socioeconomic stability. However, respondents emphasized the importance of sustainable development, highlighting that businesses have a duty to invest in health, education, and environmental initiatives to benefit both communities and their long-term success. This shift reflects a transition to strategic philanthropy, where companies integrate social values into their corporate identity, balancing ethical obligations with business objectives. Informants stressed the importance of partnerships with local communities and stakeholders, promoting mutual success through collaborative efforts that address critical community needs. As one respondent stated:

"True responsibility involves fostering sustainable development rather than merely addressing immediate needs." [Respondent#2]

Overall, the findings highlight a strategic shift toward fostering partnerships that balance corporate growth with societal progress. Companies recognized that aligning their philanthropic initiatives with business goals not only strengthens their social legitimacy but also contributes to community stability, ethical accountability, and sustainable development.

4.1.2 Environmental Responsibility (Theme 2)

The study highlights three key drivers under the environmental dimension of CSR in Bangladesh's manufacturing sector: corporate environmental policy, environmental promotion, and stakeholder knowledge gaps. Informants emphasized the need for government-enforced environmental policies to compel businesses to adopt responsible practices, especially in sectors like hospitality. Clear, sector-specific policies would ensure accountability and consistent CSR efforts. Environmental promotion emerged as crucial for raising awareness among stakeholders, with top management playing a key role in driving engagement. Informants stressed that without active promotion; businesses cannot influence consumer behavior or encourage sustainable practices. As one informant explained:

"Environmental promotion can play a key role in raising awareness and encouraging stakeholders, including those in the SMEs sector, to adopt sustainable practices. It's essential for protecting our environment and motivating businesses to act responsibly." [Respondent#18]

Regulatory officials stressed that greater environmental knowledge fosters sustainable resource use. As one another informant noted:

"With sufficient environmental knowledge, people can better understand how their actions impact the environment and the consequences of those impacts. This awareness increases sensitivity towards environmental issues. Unfortunately, many local entrepreneurs and communities lack this essential knowledge." [Respondent#8]

In short, the findings suggest that addressing policy gaps, promoting environmental activities, and improving stakeholder awareness are essential for fostering environmentally responsible business practices in Bangladesh.

4.1.3 Social Responsibility (Theme 3)

The analysis identifies three key social drivers of CSR in Bangladeshi SMEs: alliances with government and community, community involvement, and lack of cooperation from authorities. Informants emphasized that fostering strong partnerships between SMEs, local communities, and government agencies is crucial for promoting social and environmental development. Positive government relations help businesses gain support for CSR initiatives, while collaboration with communities builds trust and enhances operational efficiency. An NGO executive emphasized the need for positive government relations:

"I believe enterprises should maintain a good alliance with the government. Being in the government's good books is crucial for any organization. If the government is aware of the contributions and organization is making to the community, local MPs will take notice. Many enterprises are already doing significant activities within society. Therefore, it is important to maintain a positive relationship with the government, which serves as a key driver for CSR initiatives." [Respondent#19]

Hereafter, corruption compounds these problems, with NI-1 elaborating:

"SMEs frequently face bribery and extortion when seeking government support, hindering their ability to operate responsibly." [Respondent#12]

However, a major challenge is the lack of cooperation from government authorities, with issues like inefficiency, corruption, and weak regulatory enforcement hindering essential services such as electricity, water, and waste management. Informants stressed that these governance gaps disrupt SME operations and limit their capacity to adopt sustainable CSR practices. Addressing these challenges through improved governance and stronger stakeholder collaboration is essential for advancing CSR efforts and achieving long-term social and economic sustainability in Bangladesh's manufacturing sector.

4.1.4 Ethical Responsibility (Theme 4)

The analysis highlights that ethical responsibility in Bangladeshi SMEs extends beyond regulatory compliance, focusing on employee welfare, safe working conditions, and environmental sustainability. As an informant explained:

"The company strives to be a responsible corporate citizen not just locally but across Vietnamese society. Meeting legal requirements lays the foundation, but going beyond them strengthens our reputation." [Respondent#17]

Noteworthy, the informants emphasized that businesses must act in the best interests of their stakeholders by adopting self-regulating mechanisms and adhering to international standards such as ISO 26000, which surpass local legal requirements. These practices, driven by foreign client demands and internal policies

modeled on global best practices reflect a commitment to ethical business conduct. Similarly, NI-5, representing an NGO executive, noted:

“The company complies not only with host-country laws but also with the stricter standards set by foreign clients. For instance, we manage environmental issues according to both Bangladesh’s regulations and our customers’ requirements.” [Respondent#12]

In sum, it noted that such self-regulation fills gaps in local regulatory frameworks and fosters a culture of accountability and transparency, crucial in industries with weak governance. Companies not only meet legal obligations but also establish voluntary codes of conduct founded on principles of integrity, fairness, and transparency, ensuring responsible operations and building trust with stakeholders. This proactive approach strengthens their reputation as responsible corporate citizens and enhances long-term sustainability. Overall, these initiatives demonstrate how ethical responsibility integrates into business practices, reinforcing both practical and moral obligations to society and the environment while driving sustainable business growth.

4.1.5 Legal Responsibility (Theme 5)

The analysis highlights legal compliance as a core responsibility for SMEs, encompassing adherence to international, national, and local regulations, including enterprise, labor, and environmental laws. Companies recognized that operating within industrial zones requires stricter compliance and regular reporting. However, informants noted that poor enforcement of environmental laws in Bangladesh hampers sustainable practices. Weak regulatory oversight, insufficient resources, corruption, and political interference contribute to ineffective monitoring. Informants emphasized that strengthening governance, improving inter-agency coordination, and building regulatory capacity are critical for enforcing environmental laws and promoting sustainable business practices in the manufacturing sector. Similarly, NGO executives highlighted that lack regulatory oversight discourages environmental compliance in the manufacturing sector.

“There’s a tendency to bypass rules. Lack of planning, minimal regulatory oversight, and government inaction lead to disorderly development. This lack of intervention hampers sustainable business practices.” [Respondent#10]

4.1.6 Economic Responsibility (Theme 6)

The analysis identifies competitive advantage, financial incentives, and profit maximization as key economic factors influencing CSR adoption in Bangladeshi SMEs. Competitive advantage drives CSR by enhancing reputation, customer loyalty, and revenue through socially and environmentally responsible practices. Informants highlighted that community-focused CSR initiatives, such as education and health programs, strengthen brand image and provide an edge over competitors. Financial incentives, including tax rebates, low-interest loans, and subsidies, play a critical role in encouraging CSR adoption. Government policies like tax breaks for eco-friendly projects and simplified licensing processes motivate businesses to engage in sustainable practices. However, profit maximization remains a significant barrier. Supporting this view, informants HI-3 and HP-1 stated:

“Profit maximization is a critical issue. In a capitalist system, making money often becomes the sole focus. When this mindset dominates, it can be disastrous for CSR. Such companies care little for the well-being of employees, customers, or the community. This profit-centric approach is a major barrier to CSR in the SMEs industry.” [Respondent#8]

Moreover, informants noted that many SME owners prioritize short-term profitability over long-term social and environmental commitments, viewing CSR as a resource drain rather than an investment. This profit-driven mindset, deeply ingrained in business culture, discourages responsible practices and hinders sustainable development. Regulatory officials stressed that focusing solely on profits limits companies' ability to adopt meaningful CSR initiatives, undermining community welfare and long-term business growth. Addressing this mindset is essential to achieving a balance between economic success and responsible corporate behavior, fostering sustainable development in Bangladesh's SME sector.

4.1.7 Sustainability-oriented Responsibility (Theme 7)

The analysis reveals that SMEs prioritize sustainability as a core component of their business strategies, focusing on balancing economic growth, environmental protection, and social responsibility through a "triple bottom-line" approach. Informants emphasized that sustainability drives both corporate success and community well-being, with long-term initiatives aimed at social development rather than short-term charity. Regulatory official RI-4 emphasized this approach:

"The commitment to sustainability extends to protecting the environment, fostering social development, and generating economic benefits for our colleagues and surrounding communities." [Respondent#12]

Similarly, informants highlighted the importance of long-term, community-focused initiatives:

"The corporate sustainability initiatives are community-focused. We prioritize social development projects rather than charity, aiming for long-term impact." [Respondent#15]

Finally, the findings, based on insights from 20 informants and thematic analysis using NVivo 11, identified seven CSR themes and 19 sub-themes. These themes highlight both drivers and barriers to CSR adoption, showcasing how SMEs integrate CSR across economic, legal, ethical, philanthropic, social, and environmental dimensions to enhance business performance and stakeholder satisfaction.

5. Discussions and Implications

5.1 Discussions

The study highlights that SMEs in Bangladesh prioritize CSR across six key dimensions: philanthropic, environmental, social, ethical, legal, and economic, all contributing to sustainable business practices and community development. Philanthropic CSR focuses on long-term initiatives in health, education, and environmental improvement, signaling a shift from short-term charity to integrating social values into business strategies. The environmental dimension stresses the importance of clear policies, stakeholder awareness, and education to reduce industrial impacts, though weak enforcement and knowledge gaps remain challenges. Social CSR efforts foster partnerships with government and communities to promote trust and sustainable development, but regulatory inefficiencies and corruption hinder progress. Ethical and legal CSR goes beyond compliance by promoting fairness, accountability, and employee welfare, with companies adopting global standards like ISO 26000. However, weak regulatory enforcement and governance challenges limit the effectiveness of legal compliance. The economic dimension shows that CSR enhances competitiveness, reputation, and financial performance, supported by government incentives like tax rebates and loans. Despite barriers such as profit-driven mindsets, the findings emphasize that adopting a

"triple bottom-line" approach—balancing economic growth, environmental responsibility, and social welfare—helps SMEs achieve long-term success while fostering community progress and sustainable development.

5.2 Implications

This study provides valuable theoretical insights by employing Stakeholder Theory, and Grounded Theory to explore CSR adoption in Bangladesh's manufacturing SMEs. From the Stakeholder Theory perspective, the findings highlight the importance of fostering strong partnerships with communities, government agencies, and regulators to enhance trust and collaboration. CSR initiatives across philanthropic, environmental, social, ethical, legal, and economic dimensions contribute to sustainable business practices while aligning corporate strategies with stakeholder priorities like community development and environmental protection. The study presents practical implications for policymakers, societal stakeholders, and SMEs by positioning CSR as a strategic tool for long-term development and community well-being. Governments must establish clear regulatory frameworks, fiscal incentives, and enforcement mechanisms to encourage broader CSR adoption. Managers in the SME sector should embed CSR into core strategies, shifting from reactive charity to structured, sustainability-driven initiatives that enhance their corporate responsibility identity. Finally, the study's qualitative methodology, grounded in critical realism and following COREQ guidelines, further strengthens its contributions by ensuring reliable, multi-stakeholder insights that reflect the complex CSR dynamics within the Bangladeshi manufacturing sector.

6. Conclusion, limitations, and future research direction

The study concludes by highlighting key drivers and motivations behind Corporate Social Responsibility (CSR) practices in Bangladesh's manufacturing SMEs, based on twenty in-depth interviews analyzed using NVivo-11. Six CSR dimensions emerged: philanthropic (PHI-CSR), environmental (ENV-CSR), social (SOC-CSR), ethical (ETH-CSR), legal (LEG-CSR), and economic (ECO-CSR). Key motivations for CSR adoption included enhancing reputation, improving stakeholder relationships, reducing costs, minimizing regulatory risks, and seizing new business opportunities. The findings suggest that CSR engagement offers SMEs competitive advantages such as improved reputation, increased visibility, customer satisfaction, and financial benefits. Research supports this connection by Saeidi et al. (2015), and Awang and Jusoff (2009) shows that CSR positively impacts firm performance, enhances competitive positioning, and strengthens long-term business success. Thus, CSR adoption plays a critical role in promoting sustainable business performance in Bangladesh's manufacturing sector.

This study makes valuable theoretical and managerial contributions but also highlights several limitations that open avenues for future research. First, the sample is limited to three stakeholder groups—top management, regulatory authorities, and NGO executives. Including other key stakeholders such as customers, creditors, investors, media, and suppliers could offer a more holistic view of CSR practices in the manufacturing sector. Second, the study's cross-sectional design, based on qualitative interviews conducted at a single point in time, may not fully capture the evolving nature of CSR practices. A longitudinal approach could provide deeper insights into how CSR strategies adapt to Bangladesh's changing socio-economic and regulatory environment. Lastly, the use of grounded theory addresses the research objectives effectively, but future studies could apply alternative frameworks like social identity theory, agency theory, or signaling

theory to broaden the understanding of CSR in SMEs. Additionally, future research should explore how SMEs can optimize limited resources to meet stakeholder expectations through effective CSR strategies, enhancing CSR dynamics across diverse contexts.

References

- Adewole, O. (2024). The need for social equality from emerging patterns in business and costs towards environmental sustainability in a new paradigm shift. *International Journal of Corporate Social Responsibility*, 9(1), 15.
- Agu, E. E., Iyelolu, T. V., Idemudia, C., & Ijomah, T. I. (2024). Exploring the relationship between sustainable business practices and increased brand loyalty. *International Journal of Management & Entrepreneurship Research*, 6(8), 2463-2475.
- Ahsan, M. J. (2024). Unlocking sustainable success: exploring the impact of transformational leadership, organizational culture, and CSR performance on financial performance in the Italian manufacturing sector. *Social Responsibility Journal*, 20(4), 783-803.
- Aldalaty, M., & Piranej, T. (2024). How does Corporate Social Responsibility (CSR) contribute to trust building-through effective social contribution to the society?.
- Ali, W., Bekiros, S., Hussain, N., Khan, S. A., & Nguyen, D. K. (2024). Determinants and consequences of corporate social responsibility disclosure: A survey of extant literature. *Journal of Economic Surveys*, 38(3), 793-822.
- Al-Omouh, K. S. (2024). Drivers of digital corporate social responsibility during unprecedented crises: an institutional perspective. *Kybernetes*, 53(3), 882-900.
- Attride-Stirling, J. (2001). Thematic networks: an analytic tool for qualitative research. *Qualitative research*, 1(3), 385-405.
- Awad, J., & Martín-Rojas, R. (2024). Enhancing social responsibility and resilience through entrepreneurship and digital environment. *Corporate Social Responsibility and Environmental Management*, 31(3), 1688-1704.
- Awang, Z. H., & Jusoff, K. (2009). The effects of corporate reputation on the competitiveness of Malaysian telecommunication service providers. *International journal of business and management*, 4(5), 173-178.
- Belina, A. (2023). Semi-structured interviewing as a tool for understanding informal civil society. *Voluntary Sector Review*, 14(2), 331-347.
- Bernard, H. R., Wutich, A., & Ryan, G. W. (2016). *Analyzing qualitative data: Systematic approaches*. SAGE publications.
- Bhutto, S. M. S. Z. A. (2024). Sustainability in Business Management: Strategies for Long-Term Success. *Journal for Business Research Review*, 2(1), 39-50.
- Boddy, C. R. (2016). Sample size for qualitative research. *Qualitative market research: An international journal*, 19(4), 426-432.
- Canton, H. (2021). United Nations Industrial Development Organization—UNIDO. In *The Europa Directory of International Organizations 2021* (pp. 365-367). Routledge.
- Castleberry, A., & Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it sounds?. *Currents in pharmacy teaching and learning*, 10(6), 807-815.

Coelho, R., Jayantilal, S., & Ferreira, J. J. (2023). The impact of social responsibility on corporate financial performance: A systematic literature review. *Corporate Social Responsibility and Environmental Management*, 30(4), 1535-1560.

Constantinescu, M., & Kaptein, M. (2020). Virtue ethics and CSR: The two sides of sustainable organizational performance. *Intrinsic CSR and competition: Doing well amongst European SMEs*, 119-132.

Dartey-Baah, K., & Amoako, G. K. (2021). Global CSR, drivers and consequences: a systematic review. *Journal of Global Responsibility*, 12(4), 416-434.

Ditlev-Simonsen, C. D., & Wenstøp, F. (2013). How stakeholders view stakeholders as CSR motivators. *Social responsibility journal*, 9(1), 137-147.

Fatima, T., & Elbanna, S. (2023). Corporate social responsibility (CSR) implementation: A review and a research agenda towards an integrative framework. *Journal of Business Ethics*, 183(1), 105-121.

Ferreira, N. C., & Ferreira, J. J. (2024). The field of resource-based view research: mapping past, present and future trends. *Management Decision*.

Fosu, E., Yi, K., & Asiedu, D. (2024). The effect of CSR on corporate social performance: Mediating role of corporate image, green innovation and moderating role of corporate identity. *Corporate Social Responsibility and Environmental Management*, 31(1), 69-88.

Freeman, R. E., Dmytriiev, S. D., & Phillips, R. A. (2021). Stakeholder theory and the resource-based view of the firm. *Journal of management*, 47(7), 1757-1770.

Frynas, J. G., & Yamahaki, C. (2016). Corporate social responsibility: Review and roadmap of theoretical perspectives. *Business ethics: A European Review*, 25(3), 258-285.

Ganesh, M. K., & Venugopal, B. (2024). Challenges, Practice and Impact of Corporate Social Responsibility on Sustainable Development of Environment and Society. *Revista De Gestão Social E Ambiental*, 18(1), e4885-e4885.

Giannopoulos, G., Pilcher, N., & Salmon, I. (2024). What Is the Relationship between Corporate Social Responsibility and Financial Performance in the UK Banking Sector?. *Journal of Risk and Financial Management*, 17(5), 187.

Hagaman, A. K., & Wutich, A. (2017). How many interviews are enough to identify metathemes in multisited and cross-cultural research? Another perspective on Guest, Bunce, and Johnson's (2006) landmark study. *Field methods*, 29(1), 23-41.

Harjoto, M. A., Hoepner, A. G., & Li, Q. (2022). A stakeholder resource-based view of corporate social irresponsibility: Evidence from China. *Journal of Business Research*, 144, 830-843.

Karunaratna, I., Gunasena, P., De Alvis, K., & Jayawardana, A. (2024). Structured reviews: Organizing, synthesizing, and analyzing scientific literature.

Khan, I., Jia, M., Lei, X., Niu, R., Khan, J., & Tong, Z. (2023). Corporate social responsibility and firm performance. *Total Quality Management & Business Excellence*, 34(5-6), 672-691.

Lim, W. M. (2024). What is qualitative research? An overview and guidelines. *Australasian Marketing Journal*,

14413582241264619.

Mani, V., Jabbour, C. J. C., & Mani, K. T. (2020). Supply chain social sustainability in small and medium manufacturing enterprises and firms' performance: Empirical evidence from an emerging Asian economy. *International Journal of Production Economics*, 227, 107656.

Maxwell, J. A. (2021). Why qualitative methods are necessary for generalization. *Qualitative Psychology*, 8(1), 111.

Mehedi, S., & Jalaludin, D. (2020). Application of theories in CSR research focusing study context and corporate attributes. *International Journal of Ethics and Systems*, 36(3), 305-324.

Nayak, B., Bhattacharyya, S. S., & Krishnamoorthy, B. (2022). Integrating the dialectic perspectives of resource-based view and industrial organization theory for competitive advantage—a review and research agenda. *Journal of Business & Industrial Marketing*, 38(3), 656-679.

Nguyen, T. M. N., Brion, S., & Chauvet, V. (2024). Does corporate social responsibility relate to corporate social irresponsibility? Toward an integrative framework for future research. *European Management Review*.

Oduro, S., Bruno, L., & Maccario, G. (2024). Corporate social responsibility (CSR) in SMEs: what we know, what we don't know, and what we should know. *Journal of Small Business & Entrepreneurship*, 36(2), 207-238.

Pfajfar, G., Shoham, A., Małecka, A., & Zalaznik, M. (2022). Value of corporate social responsibility for multiple stakeholders and social impact—Relationship marketing perspective. *Journal of business research*, 143, 46-61.

Qiu, L., Hu, D., & Wang, Y. (2020). How do firms achieve sustainability through green innovation under external pressures of environmental regulation and market turbulence?. *Business Strategy and the Environment*, 29(6), 2695-2714.

Reyna-Castillo, M., Vera Martínez, P. S., Farah-Simón, L., & Simón, N. (2023). Social sustainability orientation and supply chain performance in Mexico, Colombia and Chile: a social-resource-based view (SRBV). *Sustainability*, 15(4), 3751.

Saeidi, S. P., Sofian, S., Saeidi, P., Saeidi, S. P., & Saeidi, S. A. (2015). How does corporate social responsibility contribute to firm financial performance? The mediating role of competitive advantage, reputation, and customer satisfaction. *Journal of business research*, 68(2), 341-350.

Sattar, S. A., Mathew, F. A., Iyer, S. G., Sharma, S. K., & Sharma, A. (2024). Sustainable Leadership: Fostering Long-Term Organizational And Environmental Well-Being. *Educational Administration: Theory and Practice*, 30(6), 2154-2161.

Scanlan, C. L. (2020). *Preparing for the unanticipated: Challenges in conducting semi-structured, in-depth interviews* (pp. 67-80). SAGE Publications Limited.

Stahl, G. K., Brewster, C. J., Collings, D. G., & Hajro, A. (2020). Enhancing the role of human resource management in corporate sustainability and social responsibility: A multi-stakeholder, multidimensional approach to HRM. *Human resource management review*, 30(3), 100708.

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International journal for quality in health care*, 19(6), 349-357.

Uttam, N., Dutta, P., & Singh, A. (2024). Influence of stakeholders on supply chain social sustainability: New insights from small suppliers in the Indian manufacturing sector. *Journal of Cleaner Production*, 444, 141015.

Vitolla, F., Rubino, M., & Garzoni, A. (2016). Integrated corporate social responsibility: Driving factors and means of integration—a multiple case study analysis. *Journal of Management Development*, 35(10), 1323-1343.

Wang, H., Zhang, T., Wang, X., & Zheng, J. (2024). Relationship between Occupational Pension, Corporate Social Responsibility (CSR), and Organizational Resilience: A Study on Listed Chinese Companies. *Risks*, 12(4), 65.

Wirba, A. V. (2024). Corporate social responsibility (CSR): The role of government in promoting CSR. *Journal of the Knowledge Economy*, 15(2), 7428-7454.

Xuetong, W., Hussain, M., Rasool, S. F., & Mohelska, H. (2024). Impact of corporate social responsibility on sustainable competitive advantages: The mediating role of corporate reputation. *Environmental Science and Pollution Research*, 31(34), 46207-46220



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