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THE IMPACT OF DIGITAL BANKING ADOPTION, RISK MANAGEMENT AND BALANCED SCORECARD ON INDONESIAN BANKING PERFORMANCE – A CONCEPTUAL PAPER

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ABSTRACT

Research aim: This research explores the impact of three independent variables, namely digital banking adoption, risk management and balanced scorecard implementation, on bank performance as the dependent variable.

Design/ Methodology/ Approach: This paper is a conceptual paper. Previous studies have been extensively focused on ascertaining the determinants of bank performance. Despite the large body of literature in this respect, this article focuses on the role of balanced scorecard implementation in the banking industry. The balanced scorecard's mediating role is deemed crucial, especially in the banking industry, which is more exposed to the digital and technological revolution. Accordingly, the paper proposes a performance model for banks and financial institutions which combines these determinants.

Research finding: The current debate prevalent among researchers and practitioners, as denoted in the literature, is centred on the central argument of how banks can maximise their full potential. This research suggests that the banks' management employs the following three measures: digital banking adoption, risk management and balanced scorecard implementation as the performance model. In the quest to further improve organisational performance, previous literature lauded balanced scores as a useful management tool. Specifically, the balanced scorecard serves as a strategic planning and performance management tool that utilises financial and non-financial assessments in determining an organisation's administration, management and operational effectiveness.

Practitioner/Policy implication: This study enriches the current state of knowledge in the literature by extending the current understanding of bank performance, especially in relation to digital banking adoption, where the issue of technological and digital matters play a profound role in the banking industry globally due to the rapid advancement in technology. With respect to practical implications, the findings in this study are relatable to the practitioners in the banking industry, whereby the performance model in the study is proposed to offer the ways in which the performance of their respective financial institutions can be improved.

Research limitation: In this regard, it is hoped that the paper will shed light on understanding this matter further, especially the role of the balanced scorecard. Specifically, the paper suggests that the balanced scorecard implementation acts as the mediating role that fosters the relationship between digital banking implementation and bank performance. In addition, the balanced

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scorecard implementation also acts as the factor that mediates the relationship between risk management and bank performance.

Keywords: Bank Performance, Digital Banking Adoption, Risk Management, Balanced Scorecard Implementation
Type of article: Conceptual research
JEL Classification: G21; G32

1. Introduction

In the era of Industrial Revolution 4.0, it is imperative that every business remain competitive through digitalisation and automation processes as part of a strategy to move forward, sustain and thrive in the marketplace. While opportunities emerged through these automation processes, considerable transformation became crucial in the banking and financial service sectors. The current rapid development of technology considerably affects the financial and banking sectors, making digital transformation unavoidable (Barquin et al., 2019).

This condition results in an immense opportunity to enhance efficiency by having more innovation, enhanced supply diversity, and a competitive financial system that yields market extension augmenting financial inclusion with three universal organic performance levers being considered, namely risk management, productivity and revenue growth (McKinsey,2019). As a result, operational costs can be reduced between 20 to 25%, which will correspondingly increase bank competitiveness (Harle et al., 2017; Barquin et al., 2019). Meanwhile, risk management in the digital era has grown more complicated as security technology has become more sophisticated. Therefore, a higher standard for security maintenance has become mandatory (Leon & Nugraha, 2020; COSO & WBCSD, 2018).

The traditional system of a firm's performance measurement has mostly been based on accounting measures (financial performance) rather than operational and other non-financial perspectives (Rostami et al., 2015; Karasneh & Al-Dahir, 2012). In this regard, the balanced scorecard (BSC) is hailed as an approach that could overcome issues coming from the system's traditional measures. This is accomplished by integrating the assessments that are based on past performance with financial measures using non-financial measures, which are more future-oriented with a specific focus on future drivers' performance (Tuan, 2020; Bose & Bandyopadhyay, 2018; Hasan & Chyi, 2017; Madsen & Stenheim, 2015). BSC, originally developed by Kaplan & Norton (1992), is widely known as a management tool for strategic performance. It consists of four dimensions: financial, customers, internal business process, and learning and growth perspectives. It is argued that the BSC approach is considerably dependent upon the organisations or corporation's needs. BSC requires managers to also focus on non-financial perspectives affecting the organisation's long-term profitability rather than its financial perspectives (Balkovskaya & Filneva, 2016; Gupta et al., 2018).

In Indonesia, the banking industry is rapidly growing compared to other neighbouring countries, with the ratio of banking assets to GDP, which is already very high, amounting to more than 110%. Bank Indonesia in 2022 revealed how the quarterly growth of new loan disbursements accelerated in the fourth quarter of 2021, as reflected by a significant increase in the weighted net balance (WNB) to 87% from 20.9% in the previous period. The overall growth of new loans was indicated by a positive WNB across all loan types. The latest survey also showed how the respondents remained optimistic about future credit growth, predicting 8.7% growth in 2022 compared with 5.2% credit growth in 2021 (BI, 2022). In line with this fact, PT Bank Syariah Indonesia Tbk (BSI) managed to record significant quality performance growth throughout the middle of 2022. In the midst of challenging economic conditions due to global economic turmoil, in the second quarter of 2022, BSI was able to record a net profit of Rp2.13 trillion, growing 41.31% year on year (yoy).[2] Moreover, several conducted studies describe that the banking sector will remain growing with a fascinating trend (Jon Frost, Leonardo Gambacorta & Zbinden, 2019); Themba & Mokhtar, 2020; Widjajaatmadja & Solihah, 2019; Rusydiana, 2019)

Despite this impressive growth, internationally, the fairly recent Covid-19 pandemic has changed the banking sector irreversibly - digitalisation has accelerated, and banks are challenging the conventional business model (Deloitte, 2022). Given that the banking trends in the next decade will be focused on providing banking facilities and features that place power and digital information in the hands of consumers (McKinsey, 2019), measuring the performance of a bank is less comprehensive if the perspective on performance measurement is only based on the financial and risk management aspects. Considering the significance of digital technological advancement in the banking industry, as discussed previously, it is, therefore, plausible to include the adoption of technology as one of the important determinants in measuring bank performance.

Currently, there is a dearth of research that integrates digital banking adoption, balanced scorecards and risk management as the crucial factors which affect bank performance. In addition to the limited research, Indonesia is an interesting research context as it is one of the countries classified as a “state capitalism”. It is a country whereby the government is directly involved in the economic sector through state-owned enterprises (Fainshmidt et al., 2018). This notion of “state capitalism” is a notion that is not particularly acquainted in western or developed countries where individual shareholders and private ownership appear to have a more predominant role in the respective countries’ corporate landscape, including the banks and financial institutions.

Apart from the remarkable growth and size of banks in Indonesia in comparison to other countries in the East Asian region, the ownership structure of the Indonesian banks (which are predominantly owned by either private institutions or the state through the state-owned banks) places the research in an interesting research context; especially when the performance of the banks under these two different ownership structures are compared. Shaban and James (2018) for example, found that state-owned banks are less profitable and more exposed to risks compared to private and foreign-owned Indonesian banks. With regards to the performance measurement of banks, a large number of studies in Indonesia measure the banks’ financial performance only, for instance, the determination of ROA, CAR, LDR, BOPO and NPL towards the banks’ performance (Irwan, 2017;

[2] BSI, (2022). Retrieved from https://www.bankbsi.co.id/news-update/berita/semester-i-2022-laba-bersih-bsi-naik-4131 on October, 26th 2022.

Mukhlis et al., 2020; Sofyan, 2019; Surwanti & Agustianata, 2019; Syahri & Harjito, 2020). Several studies focused only on balanced scorecards (Helmi et al., 2021; Maryati, 2019), while some extended the balanced scorecard to digital banking (Rombe, 2021) or balance scorecards from the perspective of sustainable leadership, corporate governance and human capital (Kusnanto, 2022). Although technological advancement may provide further opportunities for the banking industries to better serve their customers through digital technologies and platforms, the downside of technological development is the emergence of fintech companies.

Fintech companies offer financial services like money transfers and payments, and credit facilities through the use of a digital app that is easily accessible using mobile phones. While the banks may offer the same services to the customers through their own respective apps, similar services offered by the fintech companies could result in a "dampened" banking performance. Therefore, the emergence of fintech companies is perceived as a "threat" to the banking industry as it reduces banking institutions' profitability (Nguyen et al., 2021). However, regardless of the current technological context, limited research examines this issue from the perspective of risk management incorporated in the BSC approach. For example, Nguyen et al. (2021) examine how fintech companies affect banks' profitability with banking regulation as a moderator. Whilst this study is nevertheless important, from the perspectives of the managers in the banking industry, there is a need to establish how the risk management practices implemented by the banks that ultimately affect their banking performance could be effectively captured through the management tools such as the balance scorecard.

In light of the issues discussed, this research attempts to bridge the current gap in the literature by exploring the impact of digital banking adoption, risk management, and balanced scorecard implementation on bank performance in Indonesia while taking into account the findings of the previous studies. Specifically, this shall be examined further in Indonesia's context of different bank ownership structures. In addition, the paper also attempts to further deliberate the role of balance scorecard by proposing the intervening effect of balanced scorecard implementation in terms of the relationship between digital banking adoption and bank performance and the relationship between risk management and bank performance.

The remaining structure of this paper is constructed as follows: Section 2 reviews relevant literature and presents explanations of conducted studies with specific themes. The third section briefly describes the methodology used in this study. This is followed by Section Four, which discusses this paper's central and pertinent issue. In addition, this section also proposes a model to obtain a clearer understanding of the issue highlighted above. Lastly, the discussion section summarises all the discussion, offering a concluding thought that expresses the implications of the findings on future research.

2. Literature Review

2.1. Digital Banking Adoption

In today's banking operations, the advancement of information and communication technologies (ICT) has developed to be a major development in the banking and financial services industry, leading to numerous benefits for banking entities (Alshubiri et al., 2019).

The rapid development in digital technologies creates better opportunities for customers to become more flexible by utilising smartphones, alongside technical assistance through the use of downloadable "apps" as well as social media to compare product pricing and features. Furthermore, the global development of technological advancement has also gradually altered the pattern of service platforms whereby it is reported that online and mobile phones are service channels that are the most preferred service by customers (Ananda et al., 2020).

It is notable that massive growth in smart mobile phone usage, apart from the diffusion of Wireless Application Protocols (WAP)-enabled phones as well as the conversion of banking applications to mobile devices, has contributed significantly towards the rise of electronic banking. Interestingly, the connection between IT expenses, and bank financial performance or market share is considerably dissimilar, as it usually adjusts according to the level of IT adopted by the bank entities. For banks to maintain a high level of IT adoption in its operations, the costs incurred for the IT expenditures are compensated with several positive outcomes, for example: (1) higher labour productivity, (2) lower payroll expenses, lower operating and total administrative cost, (3) higher market share, and (4) higher income and benefit (Kim & Davidson, 2004).

Mobile banking has thus become the most critical element in the service delivery channel for almost all banking and financial institutions by prompting its high perceived value in satisfying the experience of the customers in their banking transactions. Several models examining the factors of technology acceptance by users include Innovation Diffusion (DOI), the Technology Acceptance Model (TAM), the Theory of Planned Behaviour (TPB), the Theory of Social Cognition (SCT), hybrid models of TAM-TPB, and unified Theory of Acceptance and Use of Technology (UTAUT), (Kumar et al., 2020).

It is also interesting to consider that various research was conducted internationally to search for the influential elements leading to the adoption of digital banking. Factors that have been currently proven to be a widely researched topic are the relationship assessment between IT expenditure (advanced technology) and bank performance (Borena & Negash, 2016; Ramaraju, 2015; Branco et al., 2014; Railienė, 2014; Abbas et al., 2014). The studies found that globally, there has been significant growth in IT investment in the banking industry, although there are only limited evidence that it boosts productivity. In this regard, Karasneh and Al-Dahir, (2012) offered and proposed the IT-BSC Model as a mean to evaluate a bank's accomplishments. It is asserted that the model is a promising tool in assessing and evaluating bank performance. This is confirmed by Sardjono and Pujadi, (2016) that there is a positive evaluation of IT-BSC implementation on bank performance using Managed File Transfer (MFT System) in Indonesia.

Numerous studies applied the technology acceptance model (TAM) to further examine the determinants that influence the adoption of digital banking (Lai, 2017; Marakarkandy et al., 2017; PUTRI et al., 2021). Kumar et al. (2020) extended the adoption of the traditional Technology Acceptance Model (TAM) in examining the behavioural patterns in digital banking adoption. Along with the constructs provided by TAM, four customer-oriented constructs were also assessed for this purpose. Following Ananda et al. (2020) and Kumar et al. (2020), which included trust as a determinant of digital banking adoption, this research adopted a modified TAM in digital banking.

2.2 Risk Management

Numerous reports during and in the immediate aftermath of the crisis highlighted the need for better risk management (Sheedy & Lubojanski, 2018). Technology development builds today's services. Hence, regulations will automatically be adjusted to the market's dynamic trends. In order to benefit business providers, customers, partners and other emerging economies, excellent risk management is crucial to provide new technology and business model the opportunity to stand out. Risk management is considered one of the sources of competitiveness of the bank. If risk management practices improve, they will improve bank performance and be more competitive than others.

Crouhy et al. (2014) defined risk management as the critical element of good management practice and excellent corporate governance. This never-ending process consists of steps facilitating improved decision-making and performance. These steps contain identifying, analysing, evaluating, treating, monitoring, and communicating risks. As a result, the process generates more profit than loss. On the other hand, Bessis (2015) argued that risk management in banking had become an intense topic after the financial crisis. As a result, risk management has made significant advancements. However, as the practices became more sophisticated, the regulations put more pressure on enhancing the resilience of banking firms. Risk factors can be broadly categorised as follows: market risk, credit risk, liquidity risk, operational risk, legal and regulatory risk, business risk, strategic risk, and reputation risk. In this research, the instruments employed to define risk management in the banking industry were proposed by Crouhy et al. (2014).

Regarding risk management, COSO's Enterprise Risk Management - Integrating with Strategy and Performance (COSO ERM Framework) outlines risk as a condition that may occur and affect strategy and business objectives. ERM Framework highlights that governance in an organisation is effectively exercised if the management practices a fervent direction and stewardship and frequently utilises their administrative and managerial power to provide a strong oversight in identifying, assessing and addressing the full spectrum of risks in the institution (COSO & WBCSD, 2018).

Even though there is a vast range of references measuring the effect of enterprise risk management (ERM) on bank performance and the effect of the performance measurement system (PMS) on organisational performance, there is only a few research that effectively links ERM and PMS as determinants that can considerably enhance the bank performance (Rasid et al., 2012). The significant results demonstrated a considerable link between ERM and MAS, which suggested that the organisation must employ a sophisticated level of MAS information usage for the effective adoption of ERM. ERM and MAS ERM and MAS complete each other and are inseparable in making decisions, planning and controlling an organisation. The result also displays the critical function of ERM in improving non-financial performance.

2.3 The Balanced Scorecard (BSC)

One of the literature's widely used strategic tools to improve performance is the balanced scorecard (BSC) by Robert Kaplan from Harvard University and David P. Norton. Kaplan and Norton's (1992, 1996, 2001) seminal work described BSC as an alternative for an organisation to systematically decide how to develop an internally consistent and thorough system of planning and control and a basis to separate successful and unsuccessful organisations. They suggested applying BSC to bridge the organisation's long-term strategic objectives with short-term actions in the following new management processes.

Since the key objective of the strategy is to boost the company's performance, BSC primarily serves banks which are also required to balance the financial, operational, and non-financial objectives in all four aspects: financial, customer, internal business process, and learning and growth (Kotze et al., 2019; Zreqat et al., 2017). An effective BSC requires four main building blocks consisting of setting the strategy map, selecting the right measures, adjusting key initiatives based on the objectives, and assigning the right ownership (Kaplan and Norton, 2001). Despite the similar procedures to make the scorecard for any kind of industry, the challenges and nuances for a bank can be specifically different. By using the previously mentioned four building blocks, the main elements in developing a BSC for a bank could be quite distinct from other industries and need to be handled fittingly . However, these needs are still required to be explored in greater depth (Rostami et al., 2015).

The adoption of BSC in measuring banking performance gives various perspectives as follows: Öztürk and Coskun (2014) agreed with the theoretical background of the BSC application in strategic performance management in banking and revealed BSC practices in the literature. Owusu (2017) tested the role of BSC to assess the performance of the Nigerian banking industry. Tuan (2020) found that BSC covers risk management problems, resulting in the need to improve internal business processes because it can eliminate or reduce risk exposures within the main business processes. Therefore, the adoption of BSC shows a positive and crucial effect on the bank performance (Bose & Bandyopadhyay, 2018; A. K. Gupta et al., 2018; Pérez et al., 2017; Mobarez & Elfar, 2016; Sardjono & Pujadi, 2016).

Meanwhile, El-Dalabeeh and ALshbiel (2019) drew the discussion to the interrelatedness and the relationships between a balanced scorecard, enterprise risk management (ERM) and organisational goals. They identified ERM as the mediating variable between BSC and organisational performance, which is generally in line with the discussions reported in past studies. Meanwhile, the academic inquiry into ERM's effect on the connection between BSC and organisational performance is relatively new. This indicates an intervening role of a balanced scorecard on the relationship between risk management and performance, which this study also proposes in the model.

2.4 Performance

The ultimate objective of the company's strategy is maximum performance. In organisational financial performance, performance assesses the changes in the financial statement of an institution or the financial result from managers' decisions along with its execution by the members of the institution. Thus, the impending question, "What is the difference in defining the steps required for a bank?" is critical to be addressed. In this respect, choosing the appropriate assessment to adjust lead and lag factors and a combination of ratios, monetary values, and survey results is all that matters. Other examples of assessments implemented in the banking industry include the financial perspective, customer perspective, process perspective, and learning and growth perspective (Memon & Baladi, 2020).

Kaplan and Norton (2001) also described a strategic map that serves as a reflection for the management to formulate the organisation's strategic goals alongside the parameters and their respective relationships. These could be driven to improve organisational performance. The authors highlighted that the top management must communicate the organisation's strategic goals to all employees in the organisation. The strategy maps enable the top management to identify the companies' core competencies critically and to employ these resources effectively in achieving the organisational goals as well as maximising the shareholders' values. Specifically, strategic maps enable organisations to connect and streamline departmental goals, consequently enhancing the organisation's internal performance. This allows the top management to identify critical areas and thus improve its financial outcome.

In terms of bank performance, Balkovskaya and Filneva (2016) employed a 'step-by-step' algorithm for building a strategic map of the balanced scorecard (BSC) for banks using an example from one of Russia's regional banks. Whilst previous studies focused on banks, Asiaei and Jusoh (2017) conceptualised the diversity of assessment by adding the original Kaplan and Norton's BSC model with a new perspective that incorporates social and environmental assessments. Hence, it is evident from these studies that in addition to financial outcomes, other aspects that are equally important in organisations, for example, customers and the corresponding internal business processes alongside other factors, such as the social and environmental dimensions, could be the impetus that drive the development of performance measurement conceptualisation.

3. Methodology

Intending to emphasise the effect of digital banking adoption and risk management through the use of balanced scorecard implementation, this study attempted to find the link between how these dimensions in BSC contribute towards bank performance in Indonesia. As this is a conceptual paper, the main methodology that guides the writing of the paper is the use of the conceptual framework to "frame" the critical aspects that are important and warrant attention and direction for future research. In this regard, the conceptual framework serves as guiding principles that provide a rationale for the study to be conducted (Marshall and Rossman, 2016; Ravitch and Riggan, 2017). As such, the paper is structured in a way that it discusses the areas that contribute towards an understanding of crucial factors that define the banking industry from the perspective of the bank managers. In adopting the conceptual approach, all definitions and relevant terms or issues that demonstrate the importance of the relationship of the conceptual framework are then reviewed and linked back to the study's overall objective to coherently form a consistent and well-thought-through process in documenting the conceptual thinking. In addition, the processes involved in developing a conceptual framework for the study, which involve reviewing past studies, make the construction and visualisation of a study clearer, cleaner, and more straightforward (Crawford, 2020).

4. Discussion

Limited research integrates digital banking adoption and risk management as the influential factors affecting bank performance. Thus, the study explores the impact of digital banking adoption, risk management, and balanced scorecard implementation on bank performance in Indonesia. Specifically, based on the conceptual framework discussed above, this study also proposes a mediating role of balanced scorecard implementation towards the relationship between digital banking adoption and bank performance and the relationship between risk management bank performances.

This research also proposes the bridging effect of balanced scorecard implementation towards the relationship between digital banking adoption and bank performance and the relationship between risk management bank performances. This is depicted in Figure 1 below.

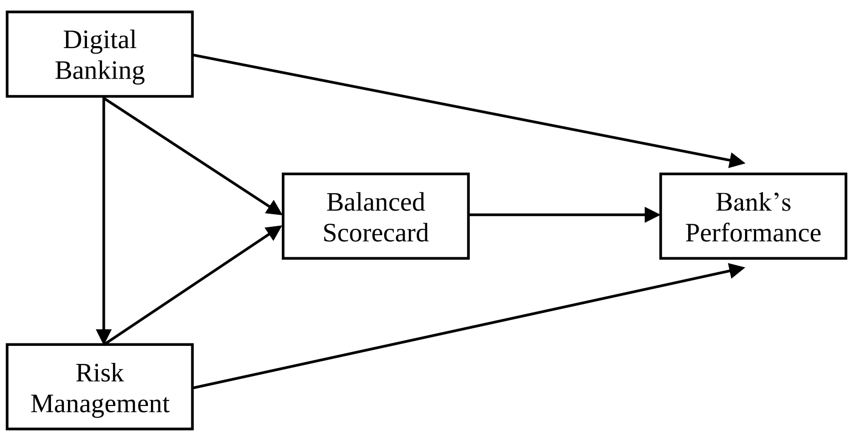

Figure 1: Bank Performance Model
Source: Own model adapted from the reviewed literature

Numerous institutions are trying to create a method that serves the managers and the board of directors with abundant information concerning possible occurrences that may influence the entity, especially top risk exposures, that they can supervise daily. While most institutions continuously check on various key performance indicators (KPIs), these indicators provide insights about incidents affecting the organisation. To assist them in achieving the competitive advantage, it is crucial for the banks to utilise all their resources - of which digital banking adoption and risk management are parts of these resources, to build their competitive benefit. Finding a thorough evaluation model for performance is crucial as an effort to ensure survival and sustain a competitive position in the financial and banking industry. The BSC is a framework developed based on the organisation's strategic planning and performance management system that monitors financial and non-financial assessments to evaluate the effectiveness of an institution (Kotze et al., 2019). BSC aligns daily operational routines with the company's strategic goals, creating additional value for the organisation in the long run. The BSC monitors financial and non-financial assessments to decide whether the enterprise performs as desired or requires specific corrective actions (Kaplan, 2012).

In management and accounting research, performance plays a very important role in accessing a company's activities. Under the performance measurement, BSC covers short-term and long-term plans and strategies, also internal and external controls. Alongside financial outcomes, the BSC also focuses on customers, as well as internal processes, and learning and growth in organisations (Rostami et al., 2015). Many studies argued that BSC is a multidimensional construct and suggested that it should be adopted as a strategic management tool (Kaplan, 2012; Shivakumar & Ravi, 2013; Niven, 2014).

Kim & Davidson (2004) used a balanced scorecard (BSC) as a framework to measure business accomplishment, especially on information technology (IT) expenses in the Korean banking industry. The correlation between IT expenses, and the bank's financial performance or relative market share performance notably varies based on the bank's respective level of IT expenditure. Results showed two crucial practical effects. First, if banks utilise IT as a strategy to grow competitive benefits effectively, it can probably lower payroll costs and raise market share along with profitability. Second, this research argued that bank managers should consider assessing business performance that encompasses IT elements and managerial strategies in applying a balanced scorecard. Hence, the research results provide a guideline for gaining competitive benefits in the banking industry.

Digital Banking Adoption and Performance

Digital banking adoption improves how businesses and transactions are offered to customers by offering digital and online experiences through a digital platform and electronic channels (Kaur et al., 2021). Overall, this results in better efficiency and competitiveness, as well as reducing customer service time (Ruinan, 2019). Furthermore, the development of an online platform does not only appeal to the customers; such initiatives also allow better communication with the stakeholders and create opportunities for banks to connect, thus generating an ecosystem of banks.

In this regard, it is interesting to note that Aguayo and Slusarczyk (2020) studied the effectiveness of various strategies concerning operational risks in developing countries (Philippines, Vietnam, Malaysia, Indonesia, and Thailand). The authors asserted the emergence of banks that are generally more competitive and resilient. The results of the study in each of the respective contexts are mixed. The study found that the Indonesian and Thailand banks that had effectively diversified, improved both the management of the bank work and risks. Meanwhile, the study established that in the Philippines, the bank strategies towards asset diversification positively affect the bank's respective efficiency, although profitability is not proven to be affected. In contrast, asset diversification is found to negatively affect profit in Malaysia. However, asset diversification increases efficiency as well as positively affects risk management. The study found that as the market is underdeveloped in Vietnam, diversification does not affect bank performance. The study demonstrated that in terms of organisational goals and strategies, the lending activities in Asian banks are not diversified to gain more profits. Instead, the profits for the Asian banks are generated from introducing varying levels of interest-free assets and services not related to lending.

The correlation involving information technology (IT) expenses and the bank's financial performance or market share was considerably different based on the IT level (Kaur et al., 2021). For financial institutions such as banks with advanced IT levels, IT expenses seem to result in (1) higher labour productivity, (2) lower payroll cost, lower operating and total administrative expenses, (3) higher market share, and (4) better revenue and profit (Jon Frost, Leonardo Gambacorta & Zbinden, 2019).

Based on previous research, digital banking adoption or IT investment positively impacts performance (Kahveci & Wolfs, 2018; Mbama et al., 2018; Wirdiyanti, 2018). Digital banking adoption also effects bank operation and efficiency (Azmi et al., 2020; Islam et al., 2019; Jünger & Mietzner, 2020; Khairina, 2022; Malar et al., 2019; Son et al., 2020; Wadesango, 2020; Wirdiyanti, 2018). However, several researchers believe that digital adoption in the banking industry positively affects the bank's performance. Kahveci and Wolfs (2018) argued that digital banking services do not provide any strategic advantage to banks. Investing in digital banking only helps to preserve their strategic positions.

Risk Management and Bank Performance

The risks to the financial institution need to be recognised, measured and controlled. Enterprise risk management concentrates on credit, market, interest rate, liquidity, and operational risks. Regarding risk management, enterprise risk management has a positive and crucial effect on balanced scorecard implementation. Elkhouly et al. (2015) contributed to the body of knowledge regarding the risk-balanced scorecard, especially in banking which deals with a considerable range of risks.

A risk management scorecard is considered one of the sources of competitiveness of a bank. The better the risk management practices, the better the performance of the bank and the more competitive the bank is. Other researchers tested the correlation between risk management and bank performance (Ali et al., 2019). The integration of enterprise risk management (ERM) also strengthens the BSC process. Meanwhile, BSC gains more information on risk management goals and performance assessment. Therefore, the adoption of BSC also positively impacts risk management (Brownlees et al., 2020).

Despite the vast range of references that measure the effect of enterprise risk management (ERM) on a bank's performance and the effect of the performance measurement system (PMS) on organisational performance, there are still limited numbers of research on how linking ERM and PMS can enhance the bank's performance (Rasid et al., 2012). The crucial results on the relationship between ERM and MAS indicate that applying ERM needs sophisticated MAS data. ERM and MAS complete each other since they are crucial in making decisions as well as planning and controlling an organisation. Also, the result highlights the critical function of ERM in improving non-financial performance. Risk management positively affects performance (Rasid et al., 2012, 2014). Furthermore, several previous researchers found that risk management positively influences bank performance (Bianchi et al., 2021; Shad et al., 2019; Songling et al., 2018; Alawattegama, 2017;).

Ali et al. (2019) further explained a positive and significant coefficiency between profitability and firm performance towards ERM implementation. The findings in this study provide an understanding of the Malaysian public-listed firms about the importance of ERM. Subsequently, maximising the benefits of ERM, especially after the introduction of Bursa Malaysia Guidelines 2013, will benefit the stakeholders and regulatory improvement in future.

Balanced Scorecard and Bank Performance

Performance is one of the key elements in management and accounting research and has become a common concern among business stakeholders (Ojra et al., 2021). It comprises analysing how the company performs, viewed from its goals and objectives. How an organisation performs is indicated by three specific parts of the final result: financial performance (profits, return on assets, and return on investment), product market performance (sales, market share) and shareholder return (total shareholder return and economic value added) (Elkhouly et al., 2015).

Banks and financial institutions work hard to gain a more competitive advantage. Finding a complete performance evaluation model is key to surviving, sustaining and being competitive. In this regard, it is imperative to note that the literature discusses several theories and assessment methods that can be implemented depending on the organisation's nature of business and size. It has long been argued that BSC is one of the performance assessment methods that incorporate various planning horizons – both short and long-term, as well as integrating various aspects involving internal and external controls. BSC considers factors such as financial, customer, internal processes, and learning and growth (Rostami et al., 2015).

BSC is supposed to be adopted, developed and applied in evaluating bank performance (Khatib & Al-Khoury, 2019; The adoption of BSC in measuring banking performance offers various perspectives. Öztürk and Coskun (2014) enriched the literature with a contextual background on the employment of BSC in strategic performance management in the banking industry and revealed BSC practices in the literature. Ibrahim and Murtala (2015) tested the appropriateness of BSC for measuring the Nigerian banking industry's performance.

Globally, several researchers examined the use of BSC in measuring bank performance. In relation to the elements contained in BSC, Elkhouly et al. (2015) developed a conceptual framework to measure how Banking Risk Balanced Scorecard can be effectively applied across and beyond Basel requirements in addition to the significant function to improve the stakeholder's value and competitive advantage. Karasneh and Al-Dahir, (2012) proposed the IT-BSC Model in evaluating bank performance in Jordan. They suggested that IT-BSC Model is a promising tool for assessing and evaluating bank performance. Sardjono and Punjabi (2016) studied the implementation of IT-BSC using Managed File Transfer (MFT System) in Indonesia to evaluate the performance of banks. Finally, Pérez et al. (2017) focused on combining BSC, strategy map and Fuzzy Analytic Hierarchy Process to achieve business sustainability.

A balanced Scorecard (BSC) is one of the primary contents of managerial accounting, which helps the manager measure and evaluate enterprises' operating performance (Tuan, 2020). Therefore, providing the theoretical base as well as applying the balanced scorecard impacts the application of the balanced scorecard on the performance of a company. This will provide managers with the foundation to promote the application of the balanced scorecard in Vietnamese enterprises aimed to improve their operating performance meaningfully and necessarily. Furthermore, research has shown the impact of the Balanced Scorecard on the performance of Vietnamese commercial banks. This is the scientific basis for enterprises of Vietnam in general. Vietnamese commercial banks, in particular, successfully apply a balanced scorecard to improve business performance.

Balanced Scorecard as Mediating Variable

In 2004, Kim and Davidson applied a balanced scorecard (BSC) framework to measure how effectively the Korean banking industry spent its budget on information technology (IT) expenditures. The relationship between how much money was spent on IT expenditures and how well the bank's financial performance or market share was completely different depending on the IT level (Ali & Saeed, 2020). For those with high IT levels, IT expenses seem to result in (1) improved labour productivity, (2) reduced payroll expenditures and higher operating and total administrative costs, (3) better market share, and (4) higher income and benefit. As a result, two significant practical implications have been proven. This research suggests that bank managers should consider applying a balanced scorecard to assess the performance of their IT and management strategies. Hence, this research provides guidance to reach a competitive advantage in the banking industry.

Karasneh and Ad-Dahhir (2012) concluded that, on average, the IT-BSC model had a significant relationship with bank financial performance in three of the five BSC perspectives (financial, strategic competitiveness, and operation). IT indicators have a higher impact on enhancing the financial performance system in Jordanian banks (Dahir et al., 2018). There is a significant positive relationship between the five BSC perspectives and IT.

Based on the literature observation, the research foresees a promising use of technological techniques as a performance measurement tool. The balanced scorecard proposed by Kaplan and Norton can be applied to the IT function. This will allow the application and development to produce what is known as the IT balanced scorecard (Sardjono & Pujadi, 2016).

However, Makhijani and Creelman (2011a, 2011b) criticised that BSC, as developed by Kaplan and Norton (1992, 1996), has no apparent features that can be applied to the formal process that integrates risk management into a broader strategy management framework. In line with that, Elkhouly et al. (2015) developed the Banking Risk Balanced Scorecard in response to the critiques that the BSC, developed by Kaplan and Norton (1992, 1996), does not have the capacity to formally consider risk management.

Oliviera (2014) recognised that BSC's risk management thinking involves some operational difficulties (mainly linked to information collecting, processing and analysis) that make constructing realistic strategic maps challenging. However, research literature supports our main assumption that the BSC is a good path for approaching committed and realistic risk management. The paper is considered an innovative framework for understanding and designing BSC research. Therefore, on the one hand, BSC provides a suitable base for ERM implementation. On the other hand, the integration of ERM and BSC will result in a more effective BSC. Meanwhile, when ERM is embedded in the existing BSC of an organisation, there would be less requirement to create a new risk management function since risk components are incorporated into every staff's responsibility. However, the ultimate party for risk control will remain the board of directors.

El-Dalabeeh and ALshbiel, (2019) assessed the connection between BSC, ERM and organisational performance. Based on the previously mentioned reference, this research conceptualises ERM to bridge BSC and organisational performance. Nevertheless, the academic inquiry into the influence of ERM in the correlation between the BSC and organisational performance is at its nascent stage. Therefore, the study concerns the mediating role of a balanced scorecard on the association of risk management and performance. This study proposes the mediating influence of balanced scorecard implementation on the correlation of risk management and organisational performance.

5. Conclusion and Recommendation

A study of the literature shows that the debates revolving among researchers and practitioners is generally centred on the issue of how banks can perform at their best (OECD, 2018). The debate concentrates on whether the institutions should strive to be different or be similar and identical to other finance providers in the industry. To achieve a competitive advantage, it is crucial for banks to utilise all their resources, of which digital banking adoption and risk management are parts of these resources. This research highly recommends that the management employs the three independent variables as shown earlier as the model of performance. The balanced scorecard is a strategic planning and performance management framework that monitors financial and non-financial assessment to determine how an organisation performs effectively. It also aligns daily routines with the enterprise's vision, creates more values, and tracks financial and non-financial assessments to distinguish whether the enterprise is performing as projected or when corrective action is required. This study also recommends the intervening role of balanced scorecard implementation on the association between digital banking adoption and organisational performance and the mediating/ intervening effect of balanced scorecard implementation on the connection between risk management and organisational performance. Decision-making processes and many kinds of operational digitalisation serve to sustain a customer base and improve banking by implementing novel digital channels and online lending. Overall, this contributes to improving bank efficiency and competitiveness, as well as better customer service. As mentioned in the introduction section, Shaban and James (2018) noted that in the Indonesian context, the performance of private banks appears to be different from that of state-owned banks. Hence, this study proposes that the conceptual framework for the study should also consider the different bank ownership structures and how the relationships of the variables would differ across the different structures.

The discussion above clearly indicates that very few studies examine the interaction of these variables in a specific context. Accordingly, it is imperative to call for future research to be directed towards evaluating the intervening influence of balanced scorecard implementation on the relationship between digital banking adoption and bank performance and between enterprise risk management and bank performance.

5.1. Academic Implications

In terms of knowledge development and academic implication, this study contributes to the knowledge by integrating the four variables: digital banking adoption, risk management, balanced scorecard and bank performance in the proposed study. Integrating the variables extends the current body of knowledge surrounding balanced scorecards, which only focused on financial and non-financial sectors. As discussed in the introduction, the banking industry is more susceptible to technological development due to digital banking adoption as a factor that could influence the banks' performance is highly relevant. Since BSC is used as a management tool to provide managers with the ability to focus on the company's strategic directions, it would be interesting to examine how the use of BSC would mediate the relationship between digital banking adoption and banking performance. Digital banking adoption is specifically related to the banking industry. Hence, the study aims to further extend the use of BSC as a mediating variable in this manner. In short, combining these variables have collectively provided a more comprehensive understanding of the relationship between digital banking adoption, risk management, balanced scorecard and bank performance.

5.2. Practical/Management Implications

In terms of practical or management implications, digital banking adoption is a consequence of digital advancement and disruption. Hence, the digitalisation of banking and financial services is a must. The technological developments in the banking sector, and digital banking adoption, have significant implications for banks and are dramatically changing how retail banks conduct their business. Over the last decade, digital banking has had a major impact on customer interfaces. The speed of change has increased because of the introduction of new technologies and the evolution of customer needs. Digital banking will drive future banking transactions due to the digitalisation and e-governance initiative of the banks and the government of Indonesia.

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