ROUTE TO FINANCIAL SUSTAINABILITY: IMPLICATIONS IN A MIXED METHOD FRAMEWORK

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Abstract

Sustainability in the banking sector is considered as a metaphor for a well-built economy. Taking into account its several aspects, efficiency and financial performance always make a strong connection with the resilience and stability of this sector. In light of this notion, this paper finds out the core drivers of financial sustainability in a mixed-method framework. Employing both qualitative and quantitative methods, this paper reveals the key factors of efficiency and financial performance that reinforce the financial sustainability of banks. Rethinking the drivers of efficiency and performance that create a bridge with sustainability always provides an incentive to the regulatory authorities and policymakers to reconsider the paradigm of economic sustainability of the banking sector. This paper also contributes to the existing literature by illuminating the concept of financial sustainability and exploring how banks secure it through some strategic policies that ensure proper maneuvering of the factors responsible for efficiency and financial performance.

Keywords: Banking Sector, Financial Sustainability, Banking Efficiency, Sustainable Financial Performance, Sustainable Banking Practice, Sustainability

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1. INTRODUCTION

The incidences of the financial crisis in the last few decades enhance the concern for financial stability and its interdependence on other sectors of the economy. After the incurrences of the 1990s Asian financial crisis and the global financial crisis in 2008, more emphasis is also given to sustainable efficiency in the banking sector to improve the immunity of the banking sector to regroup during and after future economic fluctuations.

Gradually, products and services of the financial sector are getting more integrated with environmental and inclusive sustainability issues (Scholtens, 2008). However, business success and sustainability are still considered as a trade-off rather than a win-win situation (Hahn et al., 2010; Winn et al., 2012) because of the agency problem with socio-environmental responsibilities that affect profitability (Chen & Metcalf, 1980; Jaggi & Freedman, 1992; Wagner et al., 2002). However, corporate sustainability performance and financial performance are not

a trade-off but rather positively correlated (Dowell et al., 2000; King & Lenox, 2002; Schnietz & Epstein, 2005; Lo & Sheu, 2007; Weber, 2017). During the COVID-19 situation, the liquidity crisis in the banking sector has become a great problem for the banking sector worldwide. To tackle this crisis with marginal profitability, sustainable efficiency in banking activities has been indispensable along with sustainable financing.

Sustainable banking considers both the social and the environmental aspects of banking for the purpose of protecting the environment and making the efficient use of natural resources along with a long-term assurance of banking profitability. In general, environmental sustainability in the banking sector is grouped as environmental, social, economic sustainability, administrative sustainability and risk management initiatives (Dayan, 2015). Initially, sustainable practices for the banks were cramped to environmental management practices aimed at low resource consumption, energy efficiency, and less carbon exertion (Babiak & Trendafilova, 2011). However, gradually it has been accompanied by the incorporation of environmental issues in lending and financing initiatives of banking activities (Johnsen, 2003; Scholtens, 2006).

Though Banks impose indirect impacts through their lending, financing and investment decisions, they do not have any first-hand impact on environmental and social aspects (Greenbaum et al., 2020). The main gateway, leading to the achievement of sustainability, is taking into account the effects of organizations' operating activities and their impact on the society and environment (Rankin et al., 2012). The banking stakeholders are now more environmentally concerned along with the profitability concept. Most research focuses on how sustainability relates to the costs and revenues of firms (Schröder, 2014; Friede et al., 2015). The main finding from this literature is that there is a small but positive association between these two. Therefore, in order to improve the scenario, it is necessary to maintain sustainable efficiency in banking activities. Sustainable banking invokes providing financial products and services, which are evolved to meet the necessities of people and preserve the environment while making a profit (Yip & Bocken, 2018).

Sustainability in banking and socially responsible activities may also enhance the reputation of a particular bank and create positive customer perception (Poolthong & Mandhachitara, 2009). Some international regulators, such as those in Bangladesh, Columbia, Indonesia, Mongolia, Nigeria, China and Brazil, have introduced "green" credit or sustainable banking guidelines that require mandatory environmental and social impact assessments (ESIA) before loan disbursement (Oyegunle & Weber, 2015). Sustainable banks are committed to providing real economic growth and finance organizations that offer products and services which consider the environmental and social implications. Sustainable banking can also be characterized as sustainable financing that provides financial capital and risk management, ranging from products to projects or organizations that promote economic prosperity, social justice and environmental protection (Bouma et al., 2001). Sustainable banking is a value system which guarantees that a bank's business not only benefits its shareholders and employees but also its customers and the economy as a whole (Imeson & Sim, 2013; Stankeviciene & Nikonorova, 2014). In some cases, the designing of banks' financial products and services is performed in a way that supports sustainable development is called "sustainable banking". Sustainable banking can also be called ethical banking (Ada & Kılıç, 2014). There are a total of three phases of sustainability, namely the survival phase, sustainability, and self-sufficiency phase (Pollinger et al., 2007) along with three pillars which are environmental, social and economic (General Assembly of the United Nations [UNGA], 2005).

Sustainable banking or ethical banking concept was established in the 16th century and since then it is being upgraded with the passage of time. Lately, the sustainability concept focuses on three central factors, environmental, social and governance (García-Sánchez et al., 2019). Sustainability in banking activities does not matter whether they are environmental, social, governance or development related, it focuses to guarantee whether the well-being or efficiency of the banking institutions is assured. To attain sustainable economic development, a country must have an efficient banking system (Demirgüç-Kunt & Levine, 2013). The competence level, that designates the production process of banks and financial intermediaries, is rigorously interrelated with sustainability so that, from a longstanding point of view, cost and profit efficiency are disclosed to be one of the most important properties for sustainability (Pampurini & Quaranta, 2018). So sustainable banks are considered more efficient and productive (Shah et al., 2019).

Financial sustainability is a stride towards profitability, which is attained when the organizations are able to minimize their transaction costs, provide better products and services that reach client's demand, generate sufficient revenues along with the capacity to perceive new financing ways (Consultative Group to Assist the Poor [CGAP], 2004). The contribution of banks towards sustainability can be enhanced if the efficiency and performance of the banks show an upward trend. Banks' operating efficiency improves their financial performance and consequently converted into better environmental performance (Jo et al., 2015). In a competitive market scenario, the more the bank is efficient the more it will find itself ahead of other banks in terms of performance and sustainability. A large number of studies have found a strong correlation between the competition capacity of banks and the performance, efficiency, and stability of banks. Zvezdov (2012) drew a link between performance and sustainability. Sometimes the profit of a commercial bank is considered one of the major elements of its stability (Abdul-Majid et al., 2010). A positive correlation also prevails between the size and profitability and the sustainability reporting of financial institutions (Alberici & Querci, 2016; Chih et al., 2010). Even in case of the Islamic banking perspective, a positive theoretical relationship between banks' financial performance and sustainability practices prevails (Jan et al., 2018).

As per American studies, the major reasons for the deterioration in stability and subsequent transition to a banking crisis were poor asset quality, poor planning and management, abuse of

collectors and unsecured expenses (Ahmad & Arif, 2008) which are mostly related to lack of efficiency and subsequent performance retrogression. When sustainability is attained, further development in expansion or growth may be like attracting interested partners and leading organizations' customers with greater interest in going concerned (Triodos Facet, 2009). Financial sustainability tends to be a source of competitive advantage for banks since it improves their credibility along with enhancement in motivation and retention of employees (Pampurini & Quaranta, 2018). Wu and Shen (2013) argued that the more banks associated with sustainability, the finer their financial performance as contemplated in several bank efficiency and performance ratios. Therefore, financial sustainability and comprehensive sustainability may be in a looped relationship. Financial sustainability is the ability of a firm to maintain and sustain financial capacity for a long period of time which can be attained with better financial performance and greater efficiency (Sontag-Padilla et al., 2012). Financial sustainability is considered the prerequisite to attain other branches of sustainability in the banking sector. A key tool to achieve sustainability is to scrutinise corporate performance which provides bankers with the desired competitive advantages (Stauropoulou & Sardianou, 2019). Therefore, financial performance is considered a quality criterion of a bank's ability to deal with extraneous events in its domain (Dufera, 2010).

During the COVID-19 situation, almost all the developed and developing countries are announcing incentive packages to mitigate the economically deteriorated condition due to such pandemic situation all over the world. The banking and financial system is considered the main lever for getting elevated from any economic distress which has been proven true in the global financial crisis 2007–2008. Such perception turned out because the banking sector has a smoother reach to the private sector than the capital market. Better efficiency and consistent performance improvement are the demand of time for financial stability in the banking sector.

The primary objective of this paper is to fill the research gap of exploring the financial sustainability of the banking sector thorough considering the determinants of utmost attributes of financial performance and efficiency. The foremost contribution of this paper is that it has explored why banking efficiency and financial performance are core essentials for financial stability from a sustainability perspective. The second contribution is that it has depicted the real scenario about how better efficiency and performance stimulate the denied phases of sustainability to assure comprehensive sustainability for the banking sector. Unveiling the major antecedents of efficiency and financial performance considering applying the size neutralization technique for the overall banking sector is the third contribution of this paper. Therefore, how to attain financial sustainability in the banking sector and what are the core contributing factors of prime financial sustainability pillars namely banking efficiency and profitability, are the major research questions of this paper.

This paper is oriented into five sections. Section 2 consists of a literature review in light of variables used in the model specification. Section 3 contains methods and model specification, while Section 4 describes the analysis of data along with open-ended interviews and Section 5 provides a conclusion along with a number of policies to be implemented.

2. LITERATURE REVIEW

This section explores the contributors to the efficiency and performance of banks for the assuredness of financial sustainability and what supplementary financial attributes affect the efficiency and performance of the banking sector from the past empirical literature. Business entities are required to maintain a balance between economic and socio-environmental performance through sustainable development principles due to strong environmental laws and regulations, stakeholders' demand pressure and competitive advantage (Shen et al., 2013; Lee et al., 2009; Jabbour & Jabbour, 2009; Boiral, 2006). Therefore, performance and efficiency in relation to sustainability have become a cyclical procedure. A bi-directional causality prevails between financial performance and sustainability in the banking sector (Weber, 2017) and it is one of the major contributors to national income and sustainable development (Raut et al., 2017). Moreover, efficient and financially well-performed banks are well ahead in assuredness of sustainable banking practices (Shah et al., 2019).

Considering the CAMEL model of performance measurement, a number of papers used cost-to-income ratio (CIR) to measure management efficiency (Rahman et al., 2004; Sangmi & Nazir, 2010; Ahsan, 2016) and some literature used operating efficiency to measure management efficiency (Norreklit, 2000; Porawouw et al., 2014). However, some papers used both (Liu & Pariyaprasert, 2015; Mulualem, 2015). Some papers used profit per employee to measure management efficiency or quality (Stefanovic & Bryan, 2007; Chari & Prasad, 2011; Swami et al., 2012; Soni, 2012; Omar & Mugabe, 2016). In case of considering the influencing factors of management efficiency, significant positive affiliation has been found between the capital adequacy and the earning assets (Swandewi & Purnawati, 2021) and between the operating efficiency and the earning asset (Agustina et al., 2019) of banks. A strong negative influence has been found between non-performing assets and profit per employee (Bawa et al., 2019) which signifies a robust positive affiliation between the earning assets of banks and profit per employee.

So many past literature explored factors affecting the operational efficiency in the banking sector like Zhao and Murinde (2011) in Nigeria, Fung (2006) in the USA, Chaffai (1997) in Tunisia, Paradi et al. (2012) in Canada, Jemric and Vujcic (2002) in Croatia, Taylor et al. (1997) in Mexico, Havrylchyk (2006) in Poland, Berg et al. (1993) in Norway, Kolari and Zardkoohi (1990) in Finland, Brown et al. (2009) in Kyrgyzstan, Soteriou and Zenios (1999) in Cyprus, Hasan and Marton (2003) in Hungary, Rime and Stiroh (2003) in Switzerland, Canhoto and Dermine (2003) in Portugal, Bos and Kool (2006) in Netherlands, Färe and Grosskopf (2005) in Spain, Matthews et al. (2007) in the UK, Koetter (2008) in Germany, Rezitis (2008) in Greece and Vernikov (2010) in Russia. Most of the literature

finds a relationship between efficiency and performance. Based on the operating income-to-expense ratio, Jayaraman and Srinivasan (2019) and Ruslan et al. (2019) have found an inevitable relationship between capital adequacy and banking efficiency. Odunga (2016) and Msomi and Olarewaju (2022) found significant positive impact of capital adequacy ratio and credit risk over operating efficiency like that of Saunders and Lim (1990) and Kwan and Eisenbeis (1997). Following the same measure, Eldomiaty et al. (2015) and Olszak and Chodnicka (2014) found a positive significant relationship between operating efficiency with capital adequacy, credit risk and asset quality like Amer et al. (2011) where asset quality, also referred to as asset turn over, was also used as operating efficiency. Nst et al. (2020), Lestari et al. (2022), and Akbar (2023) have found a significant positive impact of credit risk over operational efficiency whereas a significant negative impact has been found in Puspitasari et al. (2021). However, Hasibuan et al. (2020), Ikhwana (2020), and Daulay et al. (2021) have found no significant effect of credit risk on the operating efficiency of banks in case of Indonesia. Buchory (2014) and Do and Mai (2020) have shown qualified human resources (HR) as an integral part of operational efficiency.

A number of employee basis measures were used in different papers like profit per employee, loan per employee, cost per employee, asset per employee, revenue per employee and so on. Among these, profit per employee has been used as one of the best measures of banks' efficiency as it implies close relation with performance. Inspecting how governance affects efficiency, Soewignyo and Soewignyo (2015) used profit per employee as a dependent variable. For banks' profitability measures, profit per employee was used by Badola and Verma (2006), Debasish et al. (2011) for Indian banks, and Mohiuddin (2017) for Bangladeshi banks. Profit per employee was also used as a proxy of productivity affecting the performance of banks in South Asian countries by Islam and Nishiyama (2016), a proxy of employee productivity of Indian and Nepali banks by Kumar (2016) and a proxy of asset productivity of Indian banks by Yadav (2011). Daneshvar and Ramesh (2012) found a positive significant influence of profit per employee over information technology (IT) investment of Indian public banks. Al-Najjar and Assous (2021) have found a positive relationship between banking efficiency and profit per employee in case of Saudi Arabia. Ayalew (2021) has used credit risk and profit per employee as control variables for banking profitability and found a positive relation between them through return on asset (ROA) for Ethiopian banks. In case of the UK, O'Connell (2023) has found a positive association between credit risk and revenue per employee through their impact on banking ROA. However, Ali et al. (2022) have shown a negative association between credit risk and revenue per employee through their impact on banking ROA. Batten and Vo (2019) have shown that capital adequacy significantly affects profitability which subsequently contributes positively toward profit per employee. Hence, in this paper, profit per employee has been considered as the efficiency of banks' manpower.

As per Kristina et al. (2014), the CIR measures the ability of management of controlling operating costs. A higher value of this ratio affects banks' profit adversely. If the CIR decreases, then it represents the banking sector's rational and effective use of resources. Other authors like Mesa et al. (2014) and Kamaly et al. (2015) used CIR as a proxy of banks' efficiency. Kamaly et al. (2015) found a negative effect of the number of years of operation over efficiency. Trinh et al. (2020) have found a negative insignificant impact of bank age over the CIR of 14 different countries. Elnahass et al. (2021) have shown a robust positive impact of bank age over the CIR of banks from 116 countries. Gupta and Mahakud (2020b) and Saleh and Abu Afifa (2020) have shown a negative association between capital adequacy and CIR through their impact on the ROA and return on equity (ROE) of banks. Dao and Nguyen (2020) have shown direct significant negative relation between CIR and the capital adequacy of Vietnamese banks. Mesa et al. (2014) used 1-credit risk to verify its influence over CIR and found a positive significant impact on CIR. where it is usually expected that credit risk has a significant negative impact over CIR. Belkhaoui et al. (2020) have represented a significant negative association between credit risk and CIR through their impact on the profitability of banks. However, Gadzo et al. (2019) have shown a significant positive affiliation between credit risk and the CIR of banks from Ghana. Positive significance may prevail between the liquidity risk ratio and CIR. Because of holding additional liquid assets, banks will face supplementary opportunity costs. Such a condition will subsequently increase the CIR of banks as per Lartey et al. (2013). Smaoui et al. (2020) have shown that CIR adversely affects management efficiency and subsequently generates liquidity risk. Saleh and Abu Afifa (2020) have represented a significant positive affiliation between CIR and liquidity risk through their impact on the ROA and ROE of commercial banks. Banerjee and Velamuri (2015) found a negative relationship between profit per employee and CIR. Again Mesa et al. (2014) found a significant positive relationship between the number of employees and CIR as a comparatively higher number of employees signifies inefficiency but for foreign banks even with a small number of employees the CIR ratio is high because of intensive technological expenditure in banking activities found by Banerjee and Velamuri (2015).

Traditionally, banks' ROA and ROE are mostly contemplated for measuring the financial performance of the banking industry by a lot of literature. A number of authors have used loans and advances to testify about their impact on commercial banks' performance. Sufian and Habibullah (2009) suggested that with the increase in banks' loans and advances the profitability of banks is also increased. Ali et al. (2011) found that a higher amount of loans contributes to banks' profitability but the impact is not enough significant. Oke et al. (2012) has found that a positive relationship exists between the profitability of banks and loans and advances. Ahmad et al. (2008, 2014) found that advances of banking institutions have very strong and significant positive impact on banking profitability. This finding is also very much consistent with Kurawa and Garba (2014). Ameer (2015) found that maximization of profitability is possible with the increase in the amount of loans provided by commercial banks. But Kargi (2011) in Nigeria found that loans and advances control

the profitability of banks negatively which may be a consequence of aggressive financing strategy. In this paper, the profitability of commercial banks is measured with ROA and ROE. The contribution of investment in shares and government securities to banks' profitability was addressed in recent literature.

Dang et al. (2021) have presented that well-capitalized banks should diversify their investment in shares, government securities and so on with a view to obtaining sustainable banking profitability. Chhaidar et al. (2022) have shown that larger banks' investment in fintech is positively correlated with banking profitability. Mixed results are available regarding the impact of age on the performance of banks. Stinchcombe (1965) found that experienced firms with their learning and expertise enjoy superior performance. Appa (1996) found a positive relationship between the profitability of firms and their number of years in operation like Stanger (2000), Kumar and Jayanthi (2017), and Duho et al. (2020). The impact of age on the performance of firms depends on a number of other institutional factors which have been founded by Majumdar (1997). Marshall (1890), Loderer and Waelcjli (2010), Dawar (2014), Gupta and Mahakud (2020a, 2020b), and Shukla et al. (2020) have found that older firms are less flexible to a changing environment which negatively affects their performance than that of younger firms. Almus and Nerlinger (1999) reported a negative relationship between age and growth rate. Beck et al. (2005) found that Nigerian older banks were not performing well in comparison to younger banks which are better capable of pursuing new profit opportunities. Older firms are less capable to convert employee growth to sales growth which is found by Coad et al. (2013) and Kurawa and Garba (2014). Zeitun (2012) found that both older Islamic banks and conventional banks negatively affect ROE but its negative effect becomes insignificant for ROA in Rotich (2015). Handayani and Tubastuvi (2020) have shown a robust positive correlation between asset turnover and ROA but a strong negative correlation appears between operational efficiency and ROA. Hersugondo et al. (2021), Santika et al. (2022), and Putri and Ningtyas (2023) have represented that increased asset turnover will subsequently enhance the profitability of banks. However, Prasetio et al. (2021) have found no significant positive effect of asset turnover on the profitability of Indonesian banks. Dewi and Badjra (2020), Nguyen et al. (2020), Furqoni et al. (2021), and Setiawan et al. (2021) have shown a significant positive impact on loan ratio and a significant negative impact on operational efficiency over the ROA of banks. However, Yuhasril (2019) and Irba and Patrisia (2021) have found a significant negative impact of operational efficiency over the ROA of banks but the impact of loan ratio has become insignificant. Uddin (2022) has shown the insignificant positive impact of operational efficiency over ROA for Bangladeshi banks. Sitompul and Nasution (2019), Karamoy and Tulung (2020), and Puspitasari et al. (2021) have shown a robust negative impact of operational efficiency over the ROA of banks.

Nguyen et al. (2020) have found a significant positive impact on loan ratio and an insignificant impact on operational efficiency over ROE. Ledhem and Mekidiche (2020) have shown a positive correlation between Islamic banks' profitability and banking investments. However, Kargi (2011) and Li et al. (2021) have presented that investment banking activities adversely affect bank profitability and cause bank failure. Regarding the impact of operating efficiency on banks' performance, Ali et al. (2011), Olweny and Shipho (2011), Rachdi (2013), Trujillo-Ponce (2013), Shah and Jan (2014), Hassan and Mollah (2014), and Alam et al. (2016) have found a negative relationship between bank profitability and operational efficiency. Fairfield and Yohn (2001), Nissim and Penman (2001), Delen et al. (2013), and Soliman (2008) found a positive relationship between ROA and asset turnover. Pouraghajan et al. (2012) and Warrad and Al Omari (2015) have found an insignificant positive relation between firms' asset turnover and ROE. Santosuosso (2014) has found that Italian firms' ROA is strongly related to asset turnover but the relation is weak with ROE. Gupta and Mahakud (2020a, 2020b), and Trinh et al. (2020) have found a negative impact of bank age on the ROE of commercial banks but a reverse result has been found by Stanger (2000). Moreover, how the banking industry can achieve sustainability is still a burning issue which is to be explored in academic literature, especially for efficiency and performance measurement literature together with the sustainability studies (Pampurini & Quaranta, 2018; Raut et al., 2017).

3. RESEARCH METHODOLOGY

This paper chooses a sample of 29 commercial banks out of 34 listed in both the stock markets of Bangladesh. This paper uses all the data from 2005 to 2020 from the published annual reports of the selected commercial banks. Five banks have been excluded from the dataset due to the unavailability of their data to make a balanced data panel.

Both quantitative and qualitative techniques are adopted in this paper. As a qualitative technique, this paper considers key informant interviews (KIIs) which are open-ended. In quantitative techniques, at first, pooled ordinary least square has been used without taking into account all the diagnostic problems in data analysis. In the second step, either a fixed effect or random effect estimation technique is used based on the Hausman specification test. The generalized method of moments (GMM) (Blundell & Bond, 1998) has been used to remove possible endogeneity problems and remove firm-specific unobserved heterogeneity. One key problem of the second step difference GMM estimation is that the standard errors of the estimates may have a downward bias. It has augmented difference GMM estimation through the introduction of an additional assumption which generates an additional set of moment conditions to leverage. It requires that lagged changes in the dependent variable are the valid instruments for the level of the lagged dependent variable in the level equation.

A lot of previous studies have been performed due to investigate the determinants of banking efficiency of Bangladesh like Miah and Sharmeen (2015), Banna et al. (2017) and so on and due to investigate the determinants of banking profitability of Bangladesh like Rahman et al. (2015), Samad (2015), Islam et al. (2017) and so on. This paper is unique in this field in view of two reasons. First, it has considered both banking efficiency and profitability in one single work and has established

its robust affiliation with the attainment of financial sustainability in the banking sector. Second, it has chosen the mixed method which means both the qualitative and the quantitative method for analyzing and interpreting the outcome.

The justification for choosing a mixed method for this paper is in view of the fact that making different methods to come up with a single conclusion is more reliable and ensures consistency in the results. The mixed method also addresses the perceptions of individuals that solely the quantitative methods fail to address. Following the past literature, a total of six mathematical models have been developed along with their relevant constituents.

For efficiency and financial performance, the following multivariate regression models are considered.

$$ME_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 CAR_{it} + \beta_3 ATO_{it} + \beta_4 CR_{it} + \beta_5 LR_{it} + \beta_6 POE_{it} + \beta_7 CIR_{it} + \beta_8 OE_{it} + \varepsilon_{it} \tag{1}$$

$$ME_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 CAR_{it} + \beta_3 ATO_{it} + \beta_4 CR_{it} + \beta_5 LR_{it} + \beta_6 POE_{it} + \beta_7 CIR_{it} + \beta_8 OE_{it} + \beta_9 SIZE_{it} + \varepsilon_{it} \tag{2}$$

$$OE_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 CAR_{it} + \beta_3 ATO_{it} + \beta_4 CR_{it} + \beta_5 LR_{it} + \beta_6 POE_{it} + \beta_7 CIR_{it} + \beta_8 HR_{it} + \beta_9 ME_{it} + \varepsilon_{it} \tag{3}$$

$$OE_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 CAR_{it} + \beta_3 ATO_{it} + \beta_4 CR_{it} + \beta_5 LR_{it} + \beta_6 POE_{it} + \beta_7 CIR_{it} + \beta_8 HR_{it} + \beta_9 ME_{it} + \beta_{10} SIZE_{it} + \varepsilon_{it} \tag{4}$$

$$POE_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 CAR_{it} + \beta_3 ATO_{it} + \beta_4 CR_{it} + \beta_5 LR_{it} + \beta_6 CIR_{it} + \beta_7 OE_{it} + \beta_8 HR_{it} + \beta_9 ME_{it} + \varepsilon_{it} \tag{5}$$

$$POE_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 CAR_{it} + \beta_3 ATO_{it} + \beta_4 CR_{it} + \beta_5 LR_{it} + \beta_6 CIR_{it} + \beta_7 OE_{it} + \beta_8 HR_{it} + \beta_9 ME_{it} + \beta_{10} SIZE_{it} + \varepsilon_{it} \tag{6}$$

$$CIR_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 CAR_{it} + \beta_3 ATO_{it} + \beta_4 CR_{it} + \beta_5 LR_{it} + \beta_6 POE_{it} + \beta_7 OE_{it} + \beta_8 HR_{it} + \beta_9 ME_{it} + \varepsilon_{it} \tag{7}$$

$$CIR_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 CAR_{it} + \beta_3 ATO_{it} + \beta_4 CR_{it} + \beta_5 LR_{it} + \beta_6 POE_{it} + \beta_7 OE_{it} + \beta_8 HR_{it} + \beta_9 ME_{it} + \beta_{10} SIZE_{it} + \varepsilon_{it} \tag{8}$$

$$ROA_{it} = \beta_0 + \beta_1 LA_{it} + \beta_2 INV_{it} + \beta_3 AGE_{it} + \beta_4 OE_{it} + \beta_5 ATO_{it} + \varepsilon_{it} \tag{9}$$

$$ROA_{it} = \beta_0 + \beta_1 LA_{it} + \beta_2 INV_{it} + \beta_3 AGE_{it} + \beta_4 OE_{it} + \beta_5 ATO_{it} + \beta_6 SIZE_{it} + \varepsilon_{it} \tag{10}$$

$$ROE_{it} = \beta_0 + \beta_1 LA_{it} + \beta_2 INV_{it} + \beta_3 AGE_{it} + \beta_4 OE_{it} + \beta_5 ATO_{it} + \varepsilon_{it} \tag{11}$$

$$ROE_{it} = \beta_0 + \beta_1 LA_{it} + \beta_2 INV_{it} + \beta_3 AGE_{it} + \beta_4 OE_{it} + \beta_5 ATO_{it} + \beta_6 SIZE_{it} + \varepsilon_{it} \tag{12}$$

In the above model, *i* denotes a specific bank, *t* stands for the time period and ε_{it} is the disturbance term. All the variables in the models are defined in the following Table 1. There is no multi-collinearity problem among the variables used in all six models.

Table 1. Variable definition

Variable	Definition
CAR	Capital adequacy ratio = (Tier 1 capital + Tier 2 capital)/Risk weighted asset
LR	Liquidity risk = Cash/Total asset
CR	Credit risk = Loans and advances/Total asset
CIR	Cost-to-income ratio = Non-interest expense/Total income
POE	Profit per employee = Net profit/Number of employees
ME	Management efficiency = Earning asset/Total asset
OE	Operating efficiency = Operating expense/Operating income
ROA	Return on asset = Net income/Average total asset
ROE	Return on equity = Net income/Shareholder's equity
LA	Amount of loans and advances
INV	Amount of investment in shares and government securities
AGE	Number of years for which a particular bank is operating
HR	Human resource = Number of employees working in a particular bank
ATO	Asset turnover = Total revenue/Average total asset
SIZE	Dummy variable = If *LA* is less than 140,000 BDT in million then the dummy is 0, otherwise 1

4. RESEARCH RESULTS AND DISCUSSION

Considering the financial stability of the banking sector, assuring the efficiency and stability of financial performance, gets utmost importance. To ensure sustainable banking, it is necessary for banks to operate in line with superior efficiency and performance. Since each individual country has separate sustainable banking principles or guidelines, banks' aspirations and ability to contribute appropriate allotment toward sustainable banking activities are highly driven by their financial sustainability.

4.1. Inferences of the interviews

This paper finds that almost 90% of the respondents who are members of top management from different local commercial banks in Bangladesh admitted that banks' efficiency and financial performance ensure

financial capability and sustainability. It gradually works as a lever for the other areas of the sustainable banking paradigm. They acknowledged that when the financial foundation of a bank becomes stronger, it inspires the keenness of banks to move towards more and more sustainable investments and other sustainable banking practices. Some transcripts of interviews of chief executive officers (CEOs) or managing directors (MDs) are listed below to clarify the impact of efficiency and performance toward financial sustainability and other sustainable banking criterion.

"Our organization is considered as one of the consistently better-performing banks in the Bangladeshi banking industry. 25 years of banking experience has made financial performance more sustainable along with better efficiency. If our annual reports of different financial years are considered it can be found that with the fluctuations in financial soundness, the values of the indicators of sustainable banking practice also fluctuate as financial sustainability is very much correlated with comprehensive sustainable banking practice. We established Southeast Bank Green Foundation in 2002 to reinforce green banking practices. In order to encourage the sustainable business practice of our customers, we offer a green award which boosts synergies between the bank and climate warrior. Our sustainability concerns are focused on mostly education, humanitarian and disaster management and diversified in other small areas where the contribution is required" (Interviewee 1).

"Efficiency and diversity are the main strengths of our banking services to the clients. Therefore, post-tax profits and other measurements of profitability are showing signature of continuous improvement. We believe sustainability in banking is comprised of mainly economic or financial sustainability along with environmental sustainability and social sustainability that we implement in our sustainability reporting. Capital adequacy, value addition, contribution to the national exchequer and other parameters are displaying proof of our financial sustainability. Green banking activities represent environmental sustainability and our organization maintains a scheme called "MBL Shakti" to finance the different green products or investments mainly exchange-traded products (ETP), solar or renewable energy, biogas, environment-friendly brick fields and others as prescribed by Bangladesh Bank (BB). Corporate social responsibility (CSR) activities delegate the social sustainability which is performed through Mercantile Bank Foundation (MBF) established in 2000, just one year after our inception. Usually, around 4–6% of our post-tax profit is spent on CSR activities. Hence financial stability is correlated with the amount spent on CSR undertakings. Almost all the sectors prescribed in BB CSR guidelines are covered but the education sector gets the priority as per circulated guidelines" (Interviewee 2).

"Efficient expansion and novelty in banking practice have strengthened the financial sustainability in recent years proven by the escalation of performance measurement parameters. Our organization is not only for profit rather it is for "People-Planet-Profit". To assure environmental sustainability we strongly discourage environmentally harmful financing projects. We also established an international standard Environmental and Social Management System (ESMS) supported by FMO, *Netherlands. We also launch the software Environmental and Social Categorization Tool as per environmental risk rating guidelines of the central bank. As a practitioner of green banking, we have a green banking policy and strategy approved by the board of directors. We finance ETP, solar systems and environment-friendly brick factories with the approval of our sustainable finance unit or committee to make our clients behave in an environmentally responsible manner. We also finance 10-taka account holders with a loan of up to taka 50,000. Since we care about social sustainability, we disburse around 800 million takas from our profit in almost each of the recent financial years as a contribution to CSR. Around 60% of this huge allocation is donated to the education sector which has made us the largest contributor among the private business house of the country in the education sector. We also provide grants to other sectors of CSR. Our organization has a strong intention of more expansion toward sustainable banking practice based on the strength of our financial sustainability"* (Interviewee 3).

Following the interviews, this paper claims that when a bank itself is consecrated with financial sustainability, it expands its comprehensive sustainability effort through its investment and financing strategies. Sustainable investments and financing initiatives usually seemed risky and less profit-oriented in the short run but in the long run, they generate enduring returns along with the unfeigned implementation assurance of the basic going concern concept of any bank.

4.2. Antecedents of management efficiency (*ME*)

From quantitative analysis results, it has been observed that both *credit risk* and *liquidity risk* have large positive coefficients with a high level of significance on management efficiency in all three techniques used. *AGE* and credit or *liquidity risk* denote strong positive significance over management efficiency under all three techniques. Capital adequacy and asset turnover have no significant impact on management efficiency in pooled ordinary least squares (OLS) regression and random effect OLS unlike in the system GMM which shows a highly significant impact with a positive coefficient. As the system GMM is superior to the other two techniques, this paper claims the positive role of capital adequacy and asset turnover on management efficiency. *CIR* and operating efficiency have a moderate positive significance on management efficiency under pooled OLS but no significance under random effect OLS and system GMM. *Profit per employee* shows high positive significance over management efficiency in pooled OLS but system GMM surprisingly shows high negative significance. However, *profit per employee* has lost its significance in random effect OLS over management efficiency.

When bank size is adjusted, bank age, *credit risk*, *liquidity risk*, *capital adequacy ratio*, asset turnover and operating efficiency all have shown consistent results which means they are statistically indifferent in case of both large and small banks in all three quantitative techniques. *Profit per employee* has retained consistency for bank size adjustment in both the pooled OLS and system GMM methods but it has lost its minimum significance completely in the random effect OLS method for larger banks. *CIR*

shows consistent results under both random effect OLS and system GMM method for both large and small banks but in pooled OLS method *CIR* has comparatively lower significance over the management efficiency of large banks than that of small banks.

Therefore, it can be deduced that a higher level of experience creates a higher level of management efficiency for both small and large banks. *Liquidity risk* has a highly positive relationship with management efficiency with a very high level of significance for both small and large banks. It represents that liquidity reserve subsequently results in better quality earning assets for banks. *Profit per employee* has also moderate significance over the *management efficiency* of both large and small banks along with a large positive coefficient value which is similar to the interpreted outcome of Bawa et al. (2019). These results also show that higher-earning assets gradually generate more profit for commercial banks. *Credit risk* has the highest positive impact on *management efficiency*. Hence it implies that management efficiency increases with the increase in loans and advances. The rest of the independent variables have very little or no influence over the management efficiency of commercial banks.

4.3. Antecedents of operating efficiency (*OE*)

From the results of operating efficiency in quantitative techniques, the *capital adequacy ratio* has large negative coefficients with a high level of significance in all three techniques. *Profit per employee* has the highest negative coefficient among all other independent variables affecting operating efficiency but the coefficient value becomes insignificant in the system GMM method. *Credit risk* also has a significant negative coefficient but both the level of significance and value of coefficients are lower than that of the *profit per employee* since its significance level decreases in random effect.

OLS and system GMM. *CIR* has a large positive coefficient with very high significance in all three techniques. *AGE* shows a highly significant positive relationship with operating efficiency in both pooled and random effect OLS but it loses its significance in the system GMM. Asset turnover and *liquidity risk* both have no significance in both pooled and random effect OLS but each of them gains moderate significance in system GMM. The number of employees has no significance in pooled OLS but gains some significance in random effect OLS. However, its significance has got enhanced in system GMM with a small positive coefficient. Management efficiency has some influence on operating efficiency in pooled OLS but no significance has been found in both the random effect OLS and system GMM.

When *SIZE* is adjusted, it is found that *capital adequacy ratio*, *profit per employee*, *CIR*, number of employees and *management efficiency* all have shown consistent results which signifies that they are statistically indifferent to changes in the size of banks. *Credit risk* also shows almost the same result in both pooled and random effect OLS but loses its significance completely under system GMM for larger banks. Age also shows consistency though the coefficient value has become positive in system GMM for larger banks. Asset turnover and *liquidity risk* also show almost the same results after size adjustment though, for large banks, *liquidity risk* loses some of its significance in system GMM.

Now, it can be furnished that the *capital adequacy ratio* has high negative relation with the *operating efficiency* ratio. Such a result signifies that by obtaining capital adequacy the banks will gain operational efficiency since the reduction in operational efficiency ratio signifies better operating efficiency of banks which is consistent with the interpreted outcome of Jayaraman and Srinivasan (2019) and Ruslan et al. (2019). *Credit risk* has reverse relation with *operating efficiency* with a moderate level of significance for all kinds of banks considered implying that justified credit expansion will reduce the value of *operating efficiency* which is consistent with the findings of Puspitasari et al. (2021). Responses from *capital adequacy ratio* and *credit risk* over operational efficiency maintain consistency with the findings of Amer et al. (2011), Eldomiaty et al. (2015), Odunga (2016) and Msomi and Olarewaju (2022). *CIR* holds strong positive relation with *operating efficiency* for both small and large banks, implying that the operational inefficiency of banks is supported by the high *CIR*. These findings are consistent with that of Amer et al. (2011) and Eldomiaty et al. (2015). With the negative significant coefficient of *profit per employee*, it can be concluded that an increment in *profit per employee* reduces the *operating efficiency* symbolising banks' better efficiency in operations. This paper strongly imposes that, banks can do better with their operational efficiency through enhancing the profit generation capability or better efficiency of their employees. *operating efficiency* is also positively related to *AGE* which is moderately significant. It can be then concluded that with the increase in experience, banks' operating expense increases for a higher number of employees and branches due to not generating adequate operating income from their services. *HR* has a significant positive impact on the *operating efficiency* ratio with a very small coefficient and such an outcome is consistent with that of Buchory (2014) and Do and Mai (2020). It implies that there is lower employee-related expenditure in the operating expense of banks, especially for small banks. The rest of the independent variables may have very inconsiderable or no influence over the operating efficiency of commercial banks.

Table 2. Regression results (Dependent variable — *ME*) (Part 1)

Variables	Pooled OLS		Random effects (RE)		System GMM	
	Size non-adjusted	Size adjusted	Size non-adjusted	Size adjusted	Size non-adjusted	Size adjusted
ME (-1)					0.0097158***	0.0118108***
					(0.000)	(0.000)
AGE	0.2879344***	0.3106783***	0.4398551***	0.4612371***	1.106199***	1.129718***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CAR	0.2560836	0.2278915	0.1499072	0.1401096	0.1151062***	0.1134926***
	(0.314)	(0.367)	(0.490)	(0.519)	(0.002)	(0.002)

Table 2. Regression results (Dependent variable — *ME*) (Part 2)

Variables	Pooled OLS		Random effects (RE)		System GMM	
	Size non-adjusted	Size adjusted	Size non-adjusted	Size adjusted	Size non-adjusted	Size adjusted
ATO	0.1521664	0.1802706	0.1053821	0.1099649	0.1773724***	0.1730506***
	(0.483)	(0.403)	(0.571)	(0.554)	(0.000)	(0.000)
CR	1.222766***	1.222988***	1.152081***	1.152639***	1.11503***	1.114077***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LR	0.5277488***	0.5378612***	0.6837861***	0.6858335***	0.7476314***	0.7563585***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
POE	5.480389***	4.922319***	3.058908*	2.826131	-2.325127***	-2.495442***
	(0.002)	(0.006)	(0.085)	(0.114)	(0.000)	(0.004)
CIR	0.2279461**	0.199322*	0.149037	0.1394948	0.0433462	0.0147504
	(0.043)	(0.077)	(0.140)	(0.168)	(0.159)	(0.698)
OE	0.1856487**	0.1887116**	0.1098699	0.1111983	-0.0228823	0.0022626
	(0.041)	(0.036)	(0.222)	(0.216)	(0.265)	(0.898)
SIZE		-3.015709**		-2.938347		-5.276575
		(0.024)		(0.269)		(0.131)
Constant	-46.5841***	-43.44488***	-33.26736***	-31.47975***	-28.16175***	-24.79781***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Controlled	No	Yes	No	Yes	No	Yes
n	464	464	464	464	435	435
Adj. R-square	0.9908	0.9909				
AR (2) statistic					0.92976	0.91858
					(0.3525)	(0.3583)
J-statistic					21.09805	21.75087
					(1.0000)	(0.9999)

*Note: *, **, *** statistically significant at the 0.10, 0.05, and 0.01 levels respectively.*

4.4. Antecedents of profit per employee (*HR* efficiency)

From the results of *profit per employee* in quantitative analysis, it can be illustrated that operating efficiency and *CIR* have a highly significant reverse relationship with *profit per employee* through relatively small negative coefficients in all three techniques used. At pooled OLS, *AGE* or experience shows an insignificant negative impact on profit per employee. However, in random effect OLS and system GMM, it possesses a positive coefficient value with a high level of significance. The number of employees shows significant negative relation with *profit per employee* in both pooled OLS and system GMM but the relationship has completely lost its significance in random effect OLS. Moreover, in almost all three techniques, the coefficients are very small. *Liquidity risk* ratio has a highly significant negative relation with *profit per employee* in pooled OLS but its significance has got reduced in random effect OLS and has become insignificant at system GMM. Management efficiency shows a highly significant positive relationship with *profit per employee* in pooled OLS but its significance drastically reduces at random effect OLS and becomes insignificant in system GMM. *Credit risk* shows moderate reverse relation with *profit per employee* at pooled OLS but it has no significant relationship with *profit per employee* in both random effect OLS and system GMM.

When bank *SIZE* comes under concern, the impact of operating efficiency, *CIR* and *credit risk* all are showing consistency with the results without *SIZE* consideration. The impact of *HR* and *AGE* is also consistent under *SIZE* consideration under all three techniques used. The impact of

liquidity risk and management efficiency is consistent in pooled OLS and GMM however the result is inconsistent under random effect OLS.

Therefore, it can be established that relationships of both the *operating efficiency* ratio and *CIR* with *POE* are strongly negative for both small and large commercial banks considering all three methods used with small coefficient values. So, it appears that a reduction in the *operating efficiency* ratio, which means betterment in banking operational efficiency will instigate *profit per employee* which is consistent with the finding of Al-Najjar and Assous (2021). *HR* is also possessing a high significance with a small negative coefficient value which interprets that increase in employee-related cost is reversely influential to *profit per employee* which is consistent with the finding of Soewignyo and Soewignyo (2015). But the impact of *HR* is very much small over *profit per employee* which denotes employees' efficient contribution to the profit generation of banks. *AGE* or experience also holds a highly significant positive relation with *profit per employee* but with small coefficient values which represent that with the increase in experience of commercial banks, the efficiency of the banks' employees also develops which is making a positive contribution to *profit per employee* value for both the small and large banks. *Liquidity risk* may have some negative influence over *profit per employee* but the impact is not so deep especially for large banks since they hold higher liquidity reserves. The influence of management efficiency over *profit per employee* is positive but the depth of impact is still not deep at all, especially for large banks. The rest of the independent variables may have very little or no influence over the *profit per employee* to consider for concerned banks.

Table 3. Regression results (Dependent variable — *OE*)

Variables	Pooled OLS		Random effects (RE)		System GMM	
	Size non-adjusted	*Size adjusted*	*Size non-adjusted*	*Size adjusted*	*Size non-adjusted*	*Size adjusted*
OE (-1)					0.2495277***	0.2850855***
					(0.000)	(0.000)
AGE	0.244322***	0.2441376***	0.2942515***	0.2977256***	-0.047224	0.1173664
	(0.000)	(0.000)	(0.000)	(0.000)	(0.682)	(0.222)
ATO	0.0279028	0.0228962	-0.116439	-0.1160502	-0.1690998***	-0.146781***
	(0.837)	(0.867)	(0.319)	(0.320)	(0.000)	(0.002)
CAR	-0.6293476***	-0.6253632***	-0.523243***	-0.5258135***	-0.300518***	-0.258126***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CR	-0.1253102***	-0.1274174***	-0.0883804**	-0.0862402**	-0.0478592**	-0.0129048
	(0.006)	(0.006)	(0.040)	(0.046)	(0.012)	(0.694)
LR	0.0840437	0.0822375	0.058173	0.0597527	0.0808592**	0.096481*
	(0.166)	(0.177)	(0.290)	(0.278)	(0.042)	(0.064)
HR	0.0001082	0.0000736	0.0005792*	0.0006321*	0.0004189**	0.0005888*
	(0.620)	(0.758)	(0.098)	(0.091)	(0.018)	(0.056)
POE	-6.28127***	-6.267645***	-5.12252***	-5.171122***	2.421383	1.984182
	(0.000)	(0.000)	(0.000)	(0.000)	(0.284)	(0.335)
CIR	0.7188586***	0.7204524***	0.6463281***	0.642545***	0.8093107***	0.7580329***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ME	0.0723805**	0.074116**	0.0424783	0.040496	0.0021987	-0.0244914
	(0.041)	(0.038)	(0.233)	(0.258)	(0.875)	(0.258)
SIZE	0.244322***	0.3302065		-0.655392		-0.7216316
	(0.000)	(0.722)		(0.718)		(0.799)
Constant	-2.356177	-2.503367	1.279509	1.736258	-20.89903***	-22.92688***
	(0.699)	(0.683)	(0.808)	(0.746)	(0.000)	(0.005)
Controlled	No	Yes	No	Yes	No	Yes
n	464	464	464	464	435	435
Adj. R-square	0.6029	0.6017				
AR (2) statistic					-2.2359	-2.1494
					(0.0254)	(0.0316)
J-statistic					15.59162	15.34207
					(1.0000)	(1.0000)

*Note: *, **, *** statistically significant at the 0.10, 0.05, and 0.01 levels respectively.*

Table 4. Regression results (Dependent variable — *POE*)

Variables	Pooled OLS		Random effects (RE)		System GMM	
	Size non-adjusted	*Size adjusted*	*Size non-adjusted*	*Size adjusted*	*Size non-adjusted*	*Size adjusted*
POE (-1)					0.3116676***	0.2402942***
					(0.000)	(0.000)
OE	-0.0154096***	-0.0153713***	-0.0131108***	-0.0130292***	-0.0083813***	-0.0107522***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
AGE	-0.0006319	-0.0006259	0.0120373***	0.0126525***	0.0413984***	0.0649746***
	(0.776)	(0.778)	(0.003)	(0.002)	(0.000)	(0.000)
ATO	0.0040206	0.004346	0.0012347	0.0016496	-0.0040913	0.0009959
	(0.550)	(0.521)	(0.834)	(0.778)	(0.320)	(0.792)
CAR	0.0066869	0.0064373	0.0031559	0.0017811	0.0051459	0.0057697
	(0.396)	(0.416)	(0.649)	(0.796)	(0.283)	(0.192)
CR	-0.0052296**	-0.005084**	-0.0032087	-0.0027988	-0.0004589	0.0012809
	(0.021)	(0.027)	(0.141)	(0.197)	(0.788)	(0.617)
LR	-0.0086182***	-0.0084956***	-0.0048507**	-0.0043039	-0.0011791	-0.0005747
	(0.004)	(0.005)	(0.080)	(0.118)	(0.640)	(0.718)
HR	-0.000042***	-0.0000397***	-0.00000794	0.00000517	-0.0000899***	-0.0001092***
	(0.000)	(0.001)	(0.661)	(0.787)	(0.001)	(0.005)
CIR	-0.0096124***	-0.0097296***	-0.01114***	-0.0115552***	-0.0181195***	-0.0201803***
	(0.006)	(0.006)	(0.000)	(0.000)	(0.000)	(0.000)
ME	0.0052162***	0.0050964***	0.0029799*	0.0026015	0.0007072	-0.000624
	(0.003)	(0.004)	(0.098)	(0.147)	(0.623)	(0.712)
SIZE		-0.0217014		-0.1971719**		-1.598342***
		(0.637)		(0.035)		(0.000)
Constant	2.059335***	2.067579***	1.833944***	1.918476***	1.626046***	2.176102***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Controlled	No	Yes	No	Yes	No	Yes
n	464	464	464	464	435	435
Adj. R-square	0.3865	0.3849				
AR (2) statistic					-1.9438	-2.143
					(0.0519)	(0.0321)
J-statistic					20.11143	18.81635
					(1.0000)	(1.0000)

*Note: *, **, *** statistically significant at the 0.10, 0.05, and 0.01 levels respectively.*

4.5. Antecedents of cost-to-income ratio (*CIR*)

From the outputs of *CIR*, it has been found that *profit per employee* is possessing very high significance with the largest negative coefficient value among all other independent variables in all three methods. Operating efficiency has also very high significance along with a much moderate positive coefficient in all the methods used. Experience or *AGE* has a highly significant negative

moderate coefficient value both in the polled and random effect OLS method but it has totally lost its significance in the system GMM method. Asset turnover ratio has very high significance in pooled OLS method with a moderate negative coefficient value but becomes less significant in the random effect OLS method and has become insignificant in the system GMM method. The *capital adequacy ratio* becomes insignificant in pooled OLS method but in the random effect OLS method it holds slight significance but at the system GMM method it has become strongly significant with a moderate positive coefficient value. *Credit risk* and management efficiency both are showing slight significance in the pooled OLS method but both of them have become insignificant in both the random effect OLS method and system GMM method.

When the *SIZE* factor is considered, profit per employee, operating efficiency and experience (*AGE*) are showing very much consistent results. It represents that they are statistically indifferent to *SIZE* adjustment for *CIR* which means their impact on *CIR* is almost the same for both the large and small commercial banks. In case of impact analysis of turnover ratio on the *CIR*, it has been found that turnover of large banks possesses less significance than that of small banks in almost all the methods. *Capital adequacy ratio* and *credit risk* are representing almost consistent significance which interprets that both *capital adequacy ratio* and *credit risk* are statistically indifferent at *SIZE* adjustment in all three methods but coefficient values are smaller for large banks than that of the small banks for *capital adequacy ratio* but the reverse situation prevails for the coefficient values of *credit risk*. The significance of management efficiency of large banks has got reduced in both pooled and random effect OLS methods but still remains insignificant even in the system GMM method.

Therefore, from the overall viewpoint, it can be established that *profit per employee* has the strongest negative relation with *CIR* at a 1% significant level in all three methods for both the small and large banks which is very much consistent with the findings of Banerjee and Velamuri (2015). Therefore, employee efficiency plays a vital role in reducing the cost of banking institutions. *AGE* or experience is also holding a strong reverse relation with *CIR* with moderate coefficient values which interprets that with the increase in experience, the efficiency of banks is also developing which generates more revenue against per unit of cost for both the small and the large banks. This output is very much congruent with Kamaly et al. (2015). The *operating efficiency* ratio is maintaining a strong positive relationship with *CIR* with moderately high coefficient values in almost all the methods. It represents that operating revenue and operating expense exert a linear-like impact on the total revenue and total cost of banks. Asset turnover ratio is holding moderate reverse relation with *CIR* though the coefficient values are large enough for consideration but their significance is quite low for large commercial banks. From the result achieved it can be explicated that for most of the cases, the increment in *ATO* may decrease the *CIR* by more than twenty percent of that increased amount. The *capital adequacy ratio* is holding some positive relation with *CIR* but its coefficient values are moderately large for both small and large banks. *Credit risk* may have a slight negative influence over *CIR* which is congruent with Dao and Nguyen (2020), Gupta and Mahakud (2020b), and Saleh and Abu Afifa (2020) but its depth of impact is not enough for being concerned. *Management efficiency* may also possess a slight positive influence over *CIR* but the depth of impact is not deep for further consideration. Therefore, justified credit enhancement, better-earning assets and frequent asset turnover all subsequently reduce the expenses of banks. Capital sufficiency instigate the unwillingness of banks to borrow from other banks and depositors which reduce the banking expense and was used as an effective shield for Islamic banks during the great recession of 2008. The rest of the independent variables may have very little or no influence at all over *CIR* and may be logically ignored. Such a scenario is inconsistent as per Lartey et al. (2013) and Saleh and Abu Afifa (2020) for *liquidity risk* and as per Mesa et al. (2014) with the number of employees.

Table 5. Regression results (Dependent variable — *CIR*) (Part 1)

Variables	Pooled OLS		Random effects (RE)		System GMM	
	Size non-adjusted	Size adjusted	Size non-adjusted	Size adjusted	Size non-adjusted	Size adjusted
CIR (-1)					0.0248015	0.077108***
					(0.449)	(0.004)
ATO	-0.2900973***	-0.2738195**	-0.2156157**	-0.2025993*	-0.0692165	-0.0318877
	(0.007)	(0.012)	(0.042)	(0.056)	(0.286)	(0.679)
POE	-2.520676***	-2.539101***	-2.803278***	-2.917005***	-6.468825***	-6.787121***
	(0.006)	(0.006)	(0.003)	(0.002)	(0.000)	(0.000)
OE	0.462458***	0.4611011***	0.5022593***	0.5007491***	0.5563975***	0.5734568***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
AGE	-0.2135358***	-0.2121047***	-0.1771462***	-0.172594***	-0.04354	-0.0196455
	(0.000)	(0.000)	(0.000)	(0.000)	(0.697)	(0.873)
CAR	0.1823675	0.1704165	0.2181802*	0.2054227*	0.4758861***	0.2834464***
	(0.152)	(0.182)	(0.079)	(0.098)	(0.001)	(0.002)
CR	-0.0683855*	-0.0616667*	-0.0608715	-0.0556146	-0.0059951	0.0386706
	(0.063)	(0.097)	(0.108)	(0.144)	(0.863)	(0.329)
LR	0.0030589	0.0082441	0.0043372	0.0091006	0.0549733	0.0101151
	(0.950)	(0.866)	(0.930)	(0.853)	(0.158)	(0.867)
HR	-0.0002292	-0.0001265	-0.0002267	-0.0000997	0.000297	0.0002728
	(0.190)	(0.508)	(0.337)	(0.700)	(0.425)	(0.552)
ME	0.0570114**	0.051511*	0.0526319*	0.0482552	0.0086115	-0.0170499
	(0.045)	(0.072)	(0.083)	(0.115)	(0.690)	(0.430)
SIZE		-0.9696452		-1.4264		-0.030721
		(0.191)		(0.190)		(0.996)

Table 5. Regression results (Dependent variable — *CIR*) (Part 2)

Variables	Pooled OLS		Random effects (RE)		System GMM	
	Size non-adjusted	*Size adjusted*	*Size non-adjusted*	*Size adjusted*	*Size non-adjusted*	*Size adjusted*
Constant	62.07291***	62.1635***	58.23329***	58.56535***	46.99972***	43.23404***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Controlled	No	Yes	No	Yes	No	Yes
n	464	464	464	464	435	435
Adj. R-square	0.5290	0.5301				
AR (2) statistic					-2.0403	-1.7089
					(0.0413)	(0.0875)
J-statistic					21.60544	18.16773
					(1.0000)	(1.0000)

*Note: *, **, *** statistically significant at the 0.10, 0.05, and 0.01 levels respectively.*

4.6. Antecedents of return on asset (*ROA*)

From the results of *ROA* in quantitative analysis, loans and advances and investments have an insignificant negative impact on *ROA* under both pooled and random effect OLS whereas in system GMM loans and advances have an insignificant positive impact and investment has a highly significant negative impact on *ROA*. Turnover shows a moderately significant positive impact on *ROA* under pooled OLS and random effect OLS but under the system GMM method, it has lost its significance. *AGE* possesses positive coefficients with moderate significance on *ROA* in pooled OLS and residual OLS method but the significance has been boosted up under system GMM method. On the contrary, operating efficiency has a highly significant negative impact on *ROA* under all three techniques used.

When bank size is adjusted, loans and advances show no difference in pooled OLS method but impacts reversely in random effect OLS and positive impact gains significance under system GMM. Investment shows consistency with previous results at pooled OLS and system GMM but it has gained significance at random effect OLS. *AGE* shows consistent results but it has lost significance at random effect OLS. After maintaining consistency under pooled OLS, the significance of turnover has been enhanced drastically under both random effect OLS and the system GMM method for larger banks.

Operating efficiency is showing indifference to size adjustment under all three methods.

Therefore, it can be said that the *ROA* of large banks increases in line with the increase in experience. Such an outcome shows a resemblance with Stinchcombe (1965), Appa (1996), Stanger (2000), Kumar and Jayanthi (2017), and Duho et al. (2020). Operating efficiency has a significant negative impact on both small and large banks' *ROA* which means operating inefficiency will eventually reduce the *ROA* of the banking institution. This result is also consistent with Ali et al. (2011), Olweny and Shipho (2011), Rachdi (2013), Trujillo-Ponce (2013), Shah and Jan (2014), Hassan and Mollah (2014), Alam et al. (2016), Sitompul and Nasution (2019), Karamoy and Tulung (2020), and Puspitasari et al. (2021). Turnover has also a significant positive influence, especially over the large banks' *ROA* which represents that with the increase in asset turnover frequency, particularly for the big ones, the *ROA* of the banks will increase. This result is very much consistent with Nissim and Penman (2001), Soliman (2008), Fairfield and Yohn (2001), Delen et al. (2013), Hersugondo et al. (2021), Santika et al. (2022), and Putri and Ningtyas (2023). Loans and advances and investments have no significant impact on small banks' *ROA,* unlike the impact on large banks. Hence it implies that credit expansion by larger banks will contribute to the profit. Such results are consistent with Ali et al. (2011), Kurawa and Garba (2014), Ameer (2015), and Dang et al. (2021).

Table 6. Regression results (Dependent variable — *ROA*)

Variables	Pooled OLS		Random effects (RE)		System GMM	
	Size non-adjusted	*Size adjusted*	*Size non-adjusted*	*Size adjusted*	*Size non-adjusted*	*Size adjusted*
ROA (-1)					0.0521741***	0.0871952***
					(0.000)	(0.000)
LA	-0.000000477	-0.000000209	-0.000000615	0.00000114	0.000000657	0.00000191**
	(0.692)	(0.868)	(0.647)	(0.479)	(0.207)	(0.012)
INV	-0.00000491	-0.00000531	-0.00000324	-0.0000124**	-0.00000953***	-0.0000132***
	(0.318)	(0.283)	(0.538)	(0.041)	(0.000)	(0.000)
AGE	0.0111077**	0.0116442**	0.0121729*	0.000927	0.035241***	0.0329579**
	(0.035)	(0.029)	(0.059)	(0.904)	(0.000)	(0.038)
OE	-0.0513049***	-0.051013***	-0.0545891***	-0.0543838***	-0.0758947***	-0.073195***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ATO	0.0401582**	0.041531**	0.0296346*	0.0544814***	0.0039231	0.0108061***
	(0.023)	(0.020)	(0.092)	(0.007)	(0.377)	(0.009)
SIZE		-0.0839663		-0.1565114		2.828413***
		(0.465)		(0.354)		(0.000)
Constant	2.926723***	2.911541***	3.177556***	0.7990443**	3.952944***	2.399041***
	(0.000)	(0.000)	(0.000)	(0.016)	(0.000)	(0.000)
Controlled	No	Yes	No	Yes	No	Yes
n	464	464	464	464	435	435
Adj. R-square	0.2845	0.2834				
AR (2) statistic					-0.42647	-0.06644
					(0.6698)	(0.9470)
J-statistic					26.80381	24.03138
					(0.9990)	(0.9997)

*Note: *, **, *** statistically significant at the 0.10, 0.05, and 0.01 levels respectively.*

4.7. Antecedents of return on equity (*ROE*)

From the results of *ROE* in quantitative analysis, loans and advances have a significant negative impact on *ROE* under pooled and random effect OLS but lose their significance in system GMM. Investment has a significant negative impact on *ROE* under pooled OLS and system GMM method but such significance has reduced under random effect OLS method. *AGE* shows its positive significance over *ROE* only under the system GMM and becomes insignificant under the other two methods. Asset turnover shows little positive significance over *ROE* under pooled OLS method but its significance has been lost under rest two other methods. *Operating efficiency* possesses negative coefficients with a high level of significance in all three techniques applied. When the size of banks is considered that means analysis is controlled, and loans and advances show consistent results at random effect OLS and system GMM method but under pooled OLS, its significance has been increased for large-sized banks. Investment, turnover and operating efficiency are indifferent to the size neutralization of banks. *AGE* possesses no significance over the *ROA* of banks under the system GMM method when the bank size is controlled.

Therefore, it can be encapsulated that loans and advances and investments have a reverse influence over the *ROE* of both small and large commercial banks but with very small negative coefficient values. It reflects that loan disbursement in risky projects makes a succinct contribution or even may create a negative impact on profitability and the quality of market securities or financial instruments are not good for investing by banks. This output is showing consistency with Kargi (2011) and Li et al. (2021). The operating efficiency ratio shows significance at a 1% level which means it possesses intense influence over the *ROE* of both small and large banks but with a large negative coefficient value. That means an increase in the *operating efficiency* ratio signifies operating inefficiency which subsequently shrinks the profitability of the commercial banks at high gear. This output is showing consistency with Ali et al. (2011), Olweny and Shipho (2011), Rachdi (2013), Trujillo-Ponce (2013),

Shah and Jan (2014), Hassan and Mollah (2014), and Alam et al. (2016). *AGE* has a minor effect only on the *ROE* of small banks which means that in some particular cases, small banks may have higher *ROE* with more maturity or experience. This result shows consistency with Stanger (2000). But turnover has no significance over the *ROE* of both small and large banks which may be occurred as per the deduction of Pouraghajan et al. (2012) and Warrad and Al Omari (2015).

From the empirical results presented above, some facts can also be interpreted, in case of banking efficiency, Amer et al. (2011), Eldomiaty et al. (2015), and Olszak and Chodnicka (2014) all have found a positive impact of asset turnover on operating efficiency ratio but *ATO* has proven to hold insignificant impact over *operating efficiency* ratio in case of Bangladeshi bank. Ayalew (2021), Ali et al. (2022) and O'Connell (2023) all have found a significant impact of *credit risk* over *profit per employee* but in case of Bangladeshi banks impact of *credit risk* has proven insignificant over *profit per employee*. Such a situation elucidates the poor relationship between employee contribution and asset maximization of banks. However, cross-country research may elucidate this matter more deeply. Smaoui et al. (2020) and Saleh and Abu Afifa (2020) both have found a significant impact of *liquidity risk* over *CIR* but in case of this paper *liquidity risk* has shown no significance over *CIR*. It implies that holding additional liquidity does not hamper the non-interest expenditure of the banks. Poor relations between banking assets and total banking revenue may be another reason behind such behaviour of Bangladeshi banks.

In case of the profitability of banks, Gupta and Mahakud (2020a, 2020b) and Trinh et al. (2020) all have found a negative impact of bank age over *ROE* whereas regarding Bangladeshi banks, experience has sight significant positive impact over *ROE* of banks which implies the comparative better performance of experienced banks over young banks of Bangladesh. However, research based on multi-nation data may further clarify such incidents in a more profound way.

Table 7. Regression results (Dependent variable — *ROE*)

Variables	Pooled OLS		Random effects (RE)		System GMM	
	Size non-adjusted	Size adjusted	Size non-adjusted	Size adjusted	Size non-adjusted	Size adjusted
ROE (-1)					0.2355064***	0.2573585***
					(0.000)	(0.000)
LA	-0.0000167*	-0.0000205**	-0.0000233**	-0.000025**	-0.00000898	-0.0000054
	(0.080)	(0.039)	(0.045)	(0.035)	(0.257)	(0.621)
INV	-0.0000906**	-0.0000849**	-0.0000816*	-0.0000772*	-0.000115***	-0.0001044***
	(0.020)	(0.030)	(0.053)	(0.070)	(0.000)	(0.000)
AGE	0.0621626	0.0544592	0.0483312	0.0374886	0.1627974**	0.14469
	(0.135)	(0.194)	(0.514)	(0.622)	(0.021)	(0.417)
OE	-0.3679538***	-0.372145***	-0.4280351***	-0.4296194***	-0.4795919***	-0.4880665***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ATO	0.2636269*	0.2439137*	0.0462536	0.038972	0.0113077	0.0090506
	(0.059)	(0.082)	(0.716)	(0.759)	(0.834)	(0.846)
SIZE		1.20568		1.592998		-0.3576301
		(0.183)		(0.342)		(0.913)
Constant	30.56227***	30.78026***	36.78601***	36.44629***	32.48561***	32.37746***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Controlled	No	Yes	No	Yes	No	Yes
n	464	464	464	464	435	435
Adj. R-square	0.3088	0.3105				
AR (2) statistic					-0.86819	-0.79386
					(0.3853)	(0.4273)
J-statistic					26.4451	25.3978
					(0.9992)	(0.9993)

*Note: *, **, *** statistically significant at the 0.10, 0.05, and 0.01 levels respectively.*

5. CONCLUSION

This paper primarily looks at how financial sustainability can be ensured by analyzing the efficiency and performance of the banking sector of Bangladesh. This paper also looks for why financial sustainability is important for comprehensive sustainable banking practice. To perform better in a highly competitive environment, banks need to perform efficiently by developing a sustainable profit base advantage (Shen et al., 2013; Lee et al., 2009). Sustainable banking practices not only focuses on the holistic long-term financial improvement of the banks but also constructs a better image for their stakeholders.

Employing key informants' interviews as a qualitative approach along with quantitative data analysis for inspecting the drivers of efficiency and performance this paper presents several crucial findings. Sustainability is assured when the socio-economic system works in the interest of national income, national health and life standard (Pearce et al., 1989) and better-performed and well-efficient banks play such holistic roles effectively. Financial sustainability is considered the primary and inevitable phase of the substantial sustainable banking practice. Since sustainable banking practice makes an impact on the business image and morality of the organization to their clients, most of the interviewees, for this paper, the CEOs, are devoted to contributing more to banking sustainability as substantiated by the financial sustainability of their institutions. The more financially sustainable a bank is, the more it contributes to the comprehensive sustainable banking practice since it subscribes to the transparency of market image and obtains the compliance of guidelines for sustainable banking, inflicted by relevant central bank authority. Therefore, the financial sustainability of banks plays a vital role in the extensive implementation of sustainable banking practices which is rudimentary to attain a number of Sustainable Development Goals (SDGs) like zero poverty, decent economic growth, green energy, social sustainability and so on. The liquidity and discretionary credit enhancement, profit-generating capability of employees and banking experience are found to improve the managerial efficiency of banks. Though cost-income imbalance and over-maturity of the banks adversely affect the operational efficiency, the discretionary disbursement of loans, capital sufficiency and more profit-generating capacity of employees contribute to the sustainability of banks. Profit generating capacity of the employees is necessary for experienced banks. However, low efficiency in banking operations, high non-interest expenses and a large number of employees reduce per-employee profit. Higher liquidity subsequently affects the per-employee profit adversely.

Experienced banks with higher asset turnover and better profit-inducing employees are capable of reducing their non-interest expenses. Maintaining excessive capital sufficiency and operational efficiency subsequently demotivates non-interest expense. Managerial efficiency holds a slight positive influence over non-interest expense through earning asset maintenance expenditure whereas successful loan disbursement effort may slightly mitigate such expenditure. Considering the financial performance of commercial banks, experienced banks with higher asset turnover provide higher returns on assets whereas operational inefficiency makes it low. Augmentation of high-interest instigative risky loans and advances along with intense investment in shares or securities may slightly reduce the return on assets and they would also subsequently reduce the return on equity. Experienced banks with higher asset turnover also possess a slight chance of having a higher return on equity. Operational inefficiency plays an indispensable role in lowering the bank's return on equity. In order to increase efficiency, banks may increase their investment in technology and train their employees in a more practical and customer-oriented manner so that the efficiency of the bank increases. This is very much necessary for any service-oriented business, like banking. Though initially, it may require a huge amount of investment in technology eventually it will increase the operational efficiency and reduce the cost-to-income ratio then gradually it will increase the per capita profit generation of employees. However, operational efficiency and effectiveness along with human expertise are required to assure digital security and fraud control (KPMG, 2019) which will subsequently contribute to strengthening financial sustainability.

Sustainable banking practices encourage discretionary credit expansion and investment decentralization which are to be implemented since they successively work as a safeguard against any kind of distressed economic situation. Banking intuitions need to be cautious against inefficient high-interest allured risky lending through any volatile priced securitization, balloon payment or any speculative method. Banks need to make proper utilization of their available assets combined with their banking experience that subsequently contributes toward efficiency and financial performance with a view to strengthening the financial sustainability of the banking industry more comprehensively.

The major limitation of this paper is the consideration of a single country's listed banks in the sample data set. Future extensions of this paper can be done by considering and checking the cross-country results. This sort of initiative will shape the window of using a larger sample with a view to making the results more worthy.

REFERENCES

1. Abdul-Majid, M., Saal, D. S., & Battisti, G. (2010). Efficiency in Islamic and conventional banking: An international comparison. *Journal of Productivity Analysis, 34*, 25–43. https://doi.org/10.1007/s11123-009-0165-3
2. Ada, A. A., & Kiliç, Z. (2014). Sürdürülebilir kalkinma ve sürdürülebilir bankacilik: Ab ve Türkiye'deki Uygulamalar [Sustainable development and sustainable banking: Practices in the EU and Turkey]. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, 42. https://dergipark.org.tr/tr/pub/dpusbe/issue/4784/65994
3. Adam, M. H. M. (2014). Evaluating the financial performance of banks using financial ratios — A case study of Erbil Bank for Investment and Finance. *European Journal of Accounting Auditing and Finance Research, 2*(6), 162–177. https://eajournals.org/ejaafr/vol-2issue-6-august-2014/evaluating-financial-performance-banks-using-financial-ratios-case-study-erbil-bank-investment-finance-3/

4. Agustina, D., Sholihin, M., & Fithria, A. (2019). The efficiency of Indonesian Islamic rural banks: A stochastic frontier analysis. *International Journal of Islamic Economics and Finance, 1*(2), 229–248. https://doi.org/10.18196/ijief.1212

5. Ahmad, F., Tahir, S. H., & Aziz, B. (2014). Impact of loan loss provision on bank profitability in Pakistan. *Research Journal of Social Science & Management, 3*(12), 34–41. https://www.researchgate.net/publication/279931829_Impact_of_Loan_Loss_Provision_on_Bank_Profitability_in_Pakistan

6. Ahmad, N. H., & Ariff, M. (2008). Multi-country study of bank credit risk determinants. *International Journal of Banking and Finance, 5*(1), 135–152. https://e-journal.uum.edu.my/index.php/ijbf/article/view/8362

7. Ahsan, M. K. (2016). Measuring financial performance based on CAMEL: A study on selected Islamic banks in Bangladesh. *Asian Business Review, 6*(1), 47–56. https://doi.org/10.18034/abr.v6i1.26

8. Akbar, M. (2023). Analysis of the effect of capital adequacy ratio (Car), non–performing loan (Npl), and operating cost operating income (Bopo), net interest margin (Nim) to loan to deposit ratio (Ldr) of state–owned banks in Indonesia. *Journal of Social Research, 2*(5), 1591–1607. https://doi.org/10.55324/josr.v2i5.868

9. Alam, M. M., Hamid, I. M. B. A., & Rana, S. M. S. (2016). Determinates of banks' profitability: A study on Islamic banks in Bangladesh. *International Journal of Business and Technopreneurship, 6*(2), 299–308. https://www.researchgate.net/publication/316154837_Determinates_of_Banks'_Profitability_A_Study_on_Islamic_Banks_in_Bangladesh

10. Alberici, A., & Querci, F. (2016). The quality of disclosures on environmental policy: The profile of financial intermediaries. *Corporate Social Responsibility and Environmental Management, 23*(5), 283–296. https://doi.org/10.1002/csr.1375

11. Ali, K., Akhtar, M. F., & Ahmed, H. Z. (2011). Bank-specific and macroeconomic indicators of profitability — Empirical evidence from the commercial banks of Pakistan. *International Journal of Business and Social Science, 2*(6), 235–242. https://www.researchgate.net/publication/216827100_Bank-Specific_and_Macroeconomic_Indicators_of_Profitability_-_Empirical_Evidence_from_the_Commercial

12. Ali, M. A., Pervez, A., Bansal, R., & Khan, M. A. (2022). Analyzing performance of banks in India: A robust regression analysis approach. *Discrete Dynamics in Nature and Society, 2022*, Article 8103510. https://doi.org/10.1155/2022/8103510

13. Almus, M., & Nerlinger, E. A. (1999). Growth of new technology-based firms: Which factors matter? *Small Business Economics, 13*, 141–154. https://doi.org/10.1023/A:1008138709724

14. Al-Najjar, D., & Assous, H. F. (2021). Key determinants of deposits volume using CAMEL rating system: The case of Saudi banks. *PLoS ONE, 16*(12), Article e0261184. https://doi.org/10.1371/journal.pone.0261184

15. Ameer, B. M. (2015). Determinants of banking sector performance in Pakistan. *Global Journal of Management and Business Research, 15*(6), 21–48. https://journalofbusiness.org/index.php/GJMBR/article/view/1760

16. Amer, H. H. M., Moustafa, W., & Eldomiaty, T. (2011). Determinants of operating efficiency for lowly and highly competitive banks in Egypt. In *Proceedings of the 2011 Cambridge Business and Economics Conference*. Association for Business & Economics Research (ABER). https://www.researchgate.net/publication/229053151_Determinants_of_Operating_Efficiency_for_Lowly_and_Highly_Competitive_Banks_in_Egypt

17. Appa, R. (1996). *The monetary and financial system* (3rd ed.). Bonkers Books.

18. Araci, H., Yuksel, F., & Ispirli, D. (2016). Sustainability and accountability in Turkish banking sector. *Journal of Accounting, Finance and Auditing Studies, 2*(3), 232–254. https://www.um.edu.mt/library/oar/handle/123456789/26965

19. Ayalew, Z. A. (2021). Capital structure and profitability: Panel data evidence of private banks in Ethiopia. *Cogent Economics & Finance, 9*(1), Article 1953736. https://doi.org/10.1080/23322039.2021.1953736

20. Babiak, K., & Trendafilova, S. (2011). CSR and environmental responsibility: Motives and pressures to adopt green management practices. *Corporate Social Responsibility and Environmental Management, 18*(1), 11–24. https://doi.org/10.1002/csr.229

21. Badola, B. S., & Verma, R. (2006). Determinants of profitability of banks in India: A multivariate analysis. *Delhi Business Review, 7*(2), 79–88. https://www.academia.edu/8830992/Determinants_of_profitability_of_banks_in_india_a_multivariate_analysis

22. Banerjee, S., & Velamuri, M. (2015). The conundrum of profitability versus soundness for banks by ownership type: Evidence from the Indian banking sector. *Review of Financial Economics, 26*(1), 12–24. https://doi.org/10.1016/j.rfe.2015.04.001

23. Banna, H., Ahmad, R., & Koh, E. H. Y. (2017). Determinants of commercial banks' efficiency in Bangladesh: Does crisis matter? *The Journal of Asian Finance, Economics and Business, 4*(3), 19–26. https://doi.org/10.13106/jafeb.2017.vol4.no3.19

24. Batten, J., & Vo, X. V. (2019). Determinants of bank profitability — Evidence from Vietnam. *Emerging Markets Finance and Trade, 55*(6), 1417–1428. https://doi.org/10.1080/1540496X.2018.1524326

25. Bawa, J. K., Goyal, V., Mitra, S. K., & Basu, S. (2019). An analysis of NPAs of Indian banks: Using a comprehensive framework of 31 financial ratios. *IIMB Management Review, 31*(1), 51–62. https://doi.org/10.1016/j.iimb.2018.08.004

26. Beck, T., Cull, R., & Jerome, A. (2005). Bank privatization and performance: Empirical evidence from Nigeria. *Journal of Banking & Finance, 29*(8–9), 2355–2379. https://doi.org/10.1016/j.jbankfin.2005.03.018

27. Belkhaoui, S., Alsagr, N., & van Hemmen, S. F. (2020). Financing modes, risk, efficiency and profitability in Islamic banks: Modeling for the GCC countries. *Cogent Economics & Finance, 8*(1), Article 1750258. https://doi.org/10.1080/23322039.2020.1750258

28. Berg, S. A., Førsund, F. R., Hjalmarsson, L., & Suominen, M. (1993). Banking efficiency in the Nordic countries. *Journal of Banking & Finance, 17*(2–3), 371–388. https://doi.org/10.1016/0378-4266(93)90038-F

29. Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics, 87*(1), 115–143. https://doi.org/10.1016/S0304-4076(98)00009-8

30. Boiral, O. (2006). Global warming: Should companies adopt a proactive strategy? *Long Range Planning, 39*(3), 315–330. https://doi.org/10.1016/j.lrp.2006.07.002

31. Bos, J. W. B., & Kool, C. J. M. (2006). Bank efficiency: The role of bank strategy and local market conditions. *Journal of Banking & Finance, 30*(7), 1953–1974. https://doi.org/10.1016/j.jbankfin.2005.07.008

32. Bouma, J. J., Jeucken, M., & Klinkers, L. (Eds.). (2001). *Sustainable banking: The greening of finance*. Routledge. https://doi.org/10.4324/9781351282406

33. Brown, M., Maurer, M. R., Pak, T., & Tynaev, N. (2009). The impact of banking sector reform in a transition economy: Evidence from Kyrgyzstan. *Journal of Banking & Finance*, *33*(9), 1677–1687. https://doi.org/10.1016/j.jbankfin.2009.04.002

34. Buchory, H. A. (2014). Analysis of the effect of capital, credit risk and profitability to implementation banking intermediation function (Study on regional development bank all over Indonesia year 2012). *International Journal of Business, Economics and Law, 4*(1), 133–144. https://www.ijbel.com/wp-content/uploads/2014/06/KLB4137-Herry-Achmad-Buchory-ANALYSIS-OF-THE-EFFECT-OF-CAPITAL.pdf

35. Canhoto, A., & Dermine, J. (2003). A note on banking efficiency in Portugal, new vs. old banks. *Journal of Banking & Finance*, *27*(11), 2087–2098. https://doi.org/10.1016/S0378-4266(02)00316-3

36. Chaffai, M. E. (1997). Estimating input-specific technical inefficiency: The case of the Tunisian banking industry. *European Journal of Operational Research*, *98*(2), 314–331. https://doi.org/10.1016/S0377-2217(96)00350-5

37. Chen, K. H., & Metcalf, R. W. (1980). The relationship between pollution control record and financial indicators revisited. *The Accounting Review*, *55*(1), 168–177. https://www.jstor.org/stable/246182

38. Chhaidar, A., Abdelhedi, M., & Abdelkafi, I. (2022). The effect of financial technology investment level on European banks' profitability. *Journal of the Knowledge Economy, 2022*. https://doi.org/10.1007/s13132-022-00992-1

39. Chih, H.-L., Chih, H.-H., & Chen, T.-Y. (2010). On the determinants of corporate social responsibility: International evidence on the financial industry. *Journal of Business Ethics*, *93*, 115–135. https://doi.org/10.1007/s10551-009-0186-x

40. Coad, A., Segarra, A., & Teruel, M. (2013). Like milk or wine: Does firm performance improve with age? *Structural Change and Economic Dynamics, 24*, 173–189. https://doi.org/10.1016/j.strueco.2012.07.002

41. Consultative Group to Assist the Poor (CGAP). (2004). *Foreign investment in microfinance: Debt and equity from quasi-commercial investors*. https://www.cgap.org/sites/default/files/CGAP-Focus-Note-Foreign-Investment-in-Microfinance-Debt-and-Equity-from-Quasi-Commercial-Investors-Jan-2004.pdf

42. Daneshvar, P., & Ramesh, H. N. (2012). Determination of IT strategies to improve bank's performance — Indian public banks experience. *Asian Journal of Research in Business Economics and Management*, *2*(2), 115–131. https://www.researchgate.net/publication/306498684_-_115_-_AJRBEM_A_S_I_A_N_J_O_U_R_N_A_L_O_F_R_E_S_E_A_R_C_H_I_N_B_U_S_I_N_E_S_S_E_C_O_N_O_M_I_C_S_A_N_D_M_A_N_A_G_E_M_E_N_T_DETERMINATION_OF_IT_STRATEGIES_TO_IMPROVE_BANK'S_PERFORMANCE-INDIAN_PUBLIC_BA

43. Dang, T. C., Nguyen, T. B., Nguyen, T. Y., Trinh, T. H., & Banh, T. T. (2021). Factors affecting the profitability of listed commercial banks in Vietnam: Does agriculture finance matter? *AgBioForum, 23*(1), 32–41. https://agbioforum.org/menuscript/index.php/agb/article/view/35

44. Dao, B. T. T., & Nguyen, K. A. (2020). Bank capital adequacy ratio and bank performance in Vietnam: A simultaneous equations framework. *The Journal of Asian Finance, Economics and Business, 7*(6), 39–46. https://doi.org/10.13106/jafeb.2020.vol7.no6.039

45. Daulay, S., Wardhani, W., & Kasmidar. (2021). The influence of capital adequacy ratio (CAR), non–performing loans (NPL), operating costs to operating income (BOPO) on liquidity as measured by loan to deposit ratio at Bank Tabungan Negara Indonesia Tbk. *ProBisnis: Jurnal Manajemen, 12*(1), 38–44. https://ejournal.joninstitute.org/index.php/ProBisnis/article/view/68

46. Dawar, V. (2014). Agency theory, capital structure and firm performance: Some Indian evidence. *Managerial Finance, 40*(12), 1190–1206. https://doi.org/10.1108/MF-10-2013-0275

47. Dayan, V. (2015). The importance of sustainable banking: A comparative study of practices in Turkey and Canada. In *Proceedings of 31st International Business Research Conference*. https://zantworldpress.com/wp-content/uploads/2015/07/603-Volkan-Dayan.pdf

48. Debasish, S. S., Sarma, S., & Shil, N. C. (2011). a study on customer delight in selected commercial banks in India. *International Journal of Contemporary Business Studies*, *2*(2).

49. Delen, D., Kuzey, C., & Uyar, A. (2013). Measuring firm performance using financial ratios: A decision tree approach. *Expert Systems with Applications*, *40*(10), 3970–3983. https://doi.org/10.1016/j.eswa.2013.01.012

50. Demirgüç-Kunt, A., & Levine, R. (2013). *Bank-based and market-based financial systems: Cross-country comparisons* (Policy Research Working Papers). World Bank. https://doi.org/10.1596/1813-9450-2143

51. Dewi, N. K. C., & Badjra, I. B. (2020). The effect of NPL, LDR and operational cost of operational income on ROA. *American Journal of Humanities and Social Sciences Research, 4*(7), 171–178. https://www.ajhssr.com/wp-content/uploads/2020/07/W2047171178.pdf

52. Do, T. T., & Mai, N. K. (2020). High–performance organization: A literature review. *Journal of Strategy and Management, 13*(2), 297–309. https://doi.org/10.1108/JSMA-11-2019-0198

53. Dowell, G., Hart, S., & Yeung, B. (2000). Do corporate global environmental standards create or destroy market value? *Management Science*, *46*(8), 1059–1074. https://doi.org/10.1287/mnsc.46.8.1059.12030

54. Dufera, A. (2010). *Financial performance evaluation: A case study of Awash International Bank (AIB)* [Master's thesis, Mekelle University]. https://www.academia.edu/28970149/FINANCIAL_PERFORMANCE_EVALUATION_A_Case_Study_of_Awash_International_Bank_AIB

55. Duho, K. C. T., Onumah, J. M., & Owodo, R. A. (2020). Bank diversification and performance in an emerging market. *International Journal of Managerial Finance, 16*(1), 120–138. https://doi.org/10.1108/IJMF-04-2019-0137

56. Eldomiaty, T., Fikri, A., Mostafa, W., & Amer, H. H. (2015). The financial determinants of operating efficiency for low and high competitive banks in Egypt. *Journal of Finance and Bank Management*, *3*(2), 7–23. https://doi.org/10.15640/jfbm.v3n2a2

57. Elnahass, M., Trinh, V. Q., & Li, T. (2021). Global banking stability in the shadow of COVID–19 outbreak. *Journal of International Financial Markets, Institutions and Money, 72*, Article 101322. https://doi.org/10.1016/j.intfin.2021.101322

58. Erfani, G. R., & Vasigh, B., (2018). The impact of the global financial crisis on profitability of the banking industry: A comparative analysis. *Economies*, *6*(4), Article 66. https://doi.org/10.3390/economies6040066

59. Fairfield, P. M., & Yohn, T. L. (2001). Using asset turnover and profit margin to forecast changes in profitability. *Review of Accounting Studies, 6*, 371–385. https://doi.org/10.1023/A:1012430513430

60. Färe, R., & Grosskopf, S. (2005). *New directions: Efficiency and productivity*. Springer Science & Business Media.
61. Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment, 5*(4), 210–233. https://doi.org/10.1080 /20430795.2015.1118917
62. Fung, M. K. (2006). Scale economies, X-efficiency, and convergence of productivity among bank holding companies. *Journal of Banking & Finance, 30*(10), 2857–2874. https://doi.org/10.1016/j.jbankfin.2005.11.004
63. Furqoni, H. A., Bukhori, I., Lorian, I. S., & Olivia, T. (2021). Analysis of risk management and profitability: Study on state–owned and private banks. *Proceedings University of Muhammadiyah Yogyakarta Undergraduate Conference, 1*(1). https://prosiding.umy.ac.id/grace/index.php/pgrace/article/view/338
64. Gadzo, S. G., Kportorgbi, H. K., & Gatsi, J. G. (2019). Credit risk and operational risk on financial performance of universal banks in Ghana: A partial least squared structural equation model (PLS SEM) approach. *Cogent Economics & Finance, 7*(1), Article 1589406. https://doi.org/10.1080/23322039.2019.1589406
65. García-Sánchez, I.-M., Hussain, N., Martínez-Ferrero, J., & Ruiz-Barbadillo, E. (2019). Impact of disclosure and assurance quality of corporate sustainability reports on access to finance. *Corporate Social Responsibility and Environmental Management, 26*(4), 832–848. https://doi.org/10.1002/csr.1724
66. General Assembly of the United Nations (UNGA). (2005). *Resolution adopted by the General Assembly on 16 September 2005 [without reference to a Main Committee (A/60/L.1)]*. https://www.un.org/en/development /desa/population/migration/generalassembly/docs/globalcompact/A_RES_60_1.pdf
67. Greenbaum, S. I., Thakor, A. V., & Boot, A. W. (2020). *Contemporary financial intermediation* (4th ed.). Academic press.
68. Growe, G., DeBruine, M., Lee, J. Y., & Tudón Maldonado, J. F., (2014). The profitability and performance measurement of US regional banks using the predictive focus of the "fundamental analysis research". *Advances in Management Accounting, 24,* 189–237. https://doi.org/10.1108/S1474-787120140000024006
69. Gupta, N., & Mahakud, J. (2020a). CEO characteristics and bank performance: Evidence from India. *Managerial Auditing Journal, 35*(8), 1057–1093. https://doi.org/10.1108/MAJ-03-2019-2224
70. Gupta, N., & Mahakud, J. (2020b). Ownership, bank size, capitalization and bank performance: Evidence from India. *Cogent Economics & Finance, 8*(1), Article 1808282. https://doi.org/10.1080/23322039.2020.1808282
71. Hahn, T., Figge, F., Pinkse, J., & Preuss, L. (2010). Trade-offs in corporate sustainability: You can't have your cake and eat it. *Business Strategy and the Environment, 19*(4), 217–229. https://doi.org/10.1002/bse.674
72. Handayani, E., & Tubastuvi, N. (2020). Indonesian Islamic banking performance analysis. In J. Simarmata, R. Rahim, & A. Kholis (Eds.), *Proceedings of the 1st Unimed International Conference on Economics Education and Social Science UNICEES* (Vol. 1, pp. 1244–1250). Universitas Negeri Medan. https://doi.org/10.5220 /0009500612441250
73. Hasan, I., & Marton, K. (2003). Development and efficiency of the banking sector in a transitional economy: Hungarian experience. *Journal of Banking & Finance, 27*(12), 2249–2271. https://doi.org/10.1016/S0378-4266(02)00328-X
74. Hasan, M. B. (2016). Growth and performance of banking sector at Dhaka Stock Exchange Limited. *DSE Monthly Review, Year End Special Edition, 2016*, 102–108. https://www.researchgate.net/publication/312928773_Growth _and_Performance_of_Banking_Sector_at_Dhaka_Stock_Exchange_Limited
75. Hasibuan, E., Sari, D. P., & Ikhwana, H. (2020). The influence of capital adequacy ratio (CAR), non–performing loan (NPL), operating costs to operating income (BOPO) on liquidity as measured by loan to deposit ratio at HSBC bank. *ProBisnis: Jurnal Manajemen, 11*(2), 24–30. https://ejournal.joninstitute.org/index.php/ProBisnis /article/view/89
76. Hassan, M. K., & Mollah, S. (2014). Corporate governance, risk-taking and firm performance of Islamic banks during global financial crisis. https://www.isfin.net/sites/isfin.com/files/corporate_governance_risk-taking _and_firm_performance_of_islamic_banks_during_global_financial_crisis_.pdf
77. Havrylchyk, O. (2006). Efficiency of the Polish banking industry: Foreign versus domestic banks. *Journal of Banking & Finance, 30*(7), 1975–1996. https://doi.org/10.1016/j.jbankfin.2005.07.009
78. Hersugondo, H., Anjani, N., & Pamungkas, I. D. (2021). The role of non–performing asset, capital, adequacy and insolvency risk on bank performance: A case study in Indonesia. *The Journal of Asian Finance, Economics and Business, 8*(3), 319–329. https://doi.org/10.13106/jafeb.2021.vol8.no3.0319
79. Ikhwana, H. (2020). Effect of capital adequacy ratio (CAR), non–performing loans (NPL), operating expenses to operating income (BOPO) on liquidity as measured by loan to deposit ratio at standard chartered bank Indonesia. *ProBisnis: Jurnal Manajemen, 11*(1), 47–53. https://ejournal.joninstitute.org/index.php/ProBisnis /article/view/98
80. Imeson, M., & Sim, A. (2013). *Sustainable banking: Why help communities and saving the planet is good for business.*
81. Irba, S. I. S., & Patrisia, D. (2021). The effect of risk on profitability in banks listed on the Indonesia Stock Exchange. *Financial Management Studies, 1*(3), 45–55. https://doi.org/10.24036/jkmk.v1i3.17
82. Islam, M. A., Sarker, M. N. I., Rahman, M., Sultana, A., & Prodhan, A. Z. M. S. (2017). Determinants of profitability of commercial banks in Bangladesh. *International Journal of Banking and Financial Law, 1*(1), 1–11. https://www.researchgate.net/publication/317561278_Determinants_of_Profitability_of_Commercial_Banks_in _Bangladesh
83. Islam, M. S., & Nishiyama, S.-I. (2016). The determinants of bank profitability: Dynamic panel evidence from South Asian countries. *Journal of Applied Finance & Banking, 6*(3), 77–97. https://www.researchgate.net /publication/319036158_The_Determinants_of_Bank_Profitability_Dynamic_Panel_Evidence_from_South_Asian _Countries
84. Jabbour, A. B. L. S., & Jabbour, C. J. C. (2009). Are supplier selection criteria going green? Case studies of companies in Brazil. *Industrial Management & Data Systems, 109*(4), 477–495. http://doi.org/10.1108 /02635570910948623
85. Jaggi, B., & Freedman, M. (1992). An examination of the impact of pollution performance on economic and market performance: pulp and paper firms. *Journal of Business Finance & Accounting, 19*(5), 697–713. https://doi.org/10.1111/j.1468-5957.1992.tb00652.x

86. Jan, A., Marimuthu, M., Mat Isa, M. P. B., & Albinsson, P. A. (2018). Sustainability practices and banks financial performance: A conceptual review from the Islamic banking industry in Malaysia. *International Journal of Business and Management, 13*(11), 61–88. https://doi.org/10.5539/ijbm.v13n11p61

87. Jayaraman, A. R., & Srinivasan, M. R. (2019). Determinants of Indian banks efficiency: A two-stage approach. *International Journal of Operational Research, 36*(2), 270–291. https://doi.org/10.1504/IJOR.2019.102414

88. Jemric, I., & Vujcic, B. (2002). Efficiency of banks in Croatia: A DEA approach. *Comparative Economic Studies, 44*, 169–193. https://doi.org/10.1057/ces.2002.13

89. Jo, H., Kim, H., & Park, K. (2015). Corporate environmental responsibility and firm performance in the financial services sector. *Journal of Business Ethics, 131*, 257–284. https://doi.org/10.1007/s10551-014-2276-7

90. Johnsen, D. B. (2003). Socially responsible investing: A critical appraisal. *Journal of Business Ethics, 43*, 219–222. https://doi.org/10.1023/A:1022998232503

91. Kamaly, A., El-Ezaby, S., & El-Hinawy, M. (2015). Does privatization enhance the performance of banks. Evidence from Egypt. In *Proceedings of the 2015 Applied Social Science Association (ASSA) Conference*. American Economic Association. https://www.aeaweb.org/conference/2015/retrieve.php?pdfid=3639&tk=7ZhdEbfQ

92. Karamoy, H., & Tulung, J. E. (2020). The impact of banking risk on regional development banks in Indonesia. *Banks and Bank Systems, 15*(2), 130–137. http://doi.org/10.21511/bbs.15(2).2020.12

93. Kargi, H. S. (2011). *Credit risk and the performance of Nigerian banks*. Ahmadu Bello University. https://www.academia.edu/8637351/CREDIT_RISK_AND_THE_PERFORMANCE_OF_NIGERIAN_BANKS_BY

94. King, A., & Lenox, M. (2002). Exploring the locus of profitable pollution reduction. *Management Science, 48*(2), 289–299. https://doi.org/10.1287/mnsc.48.2.289.258

95. Kipesha, E. F., & Zhang, X. (2013). Sustainability, profitability and outreach tradeoffs: Evidences from microfinance institutions in East Africa. *European Journal of Business and Management, 5*(8), 136–148. https://www.researchgate.net/publication/236590480_Sustainability_Profitability_and_Outreach_Tradeoffs_Evidences_from_Microfinance_Institutions_in_East_Africa

96. Koetter, M. (2008). An assessment of bank merger success in Germany. *German Economic Review, 9*(2), 232–264. https://doi.org/10.1111/j.1468-0475.2008.00432.x

97. Kolapo, T. F., Ayeni, R. K., & Oke, M. O. (2012). Credit risk and commercial banks' performance in Nigeria: A panel model approach. *Australian Journal of Business and Management Research, 2*(2), 31–38. https://www.ajbmr.com/articlepdf/aus_20_70i2n2a4.pdf

98. Kolari, J., & Zardkoohi, A. (1990). Economies of scale and scope in thrift institutions: the case of Finnish cooperative and savings banks. *The Scandinavian Journal of Economics, 92*(3), 437–451. https://doi.org/10.2307/3440010

99. Korzeb, Z., & Samaniego-Medina, R. (2019). Sustainability performance. A comparative analysis in the Polish banking sector. *Sustainability, 11*(3), Article 653. https://doi.org/10.3390/su11030653

100. KPMG. (2019). *Global banking fraud survey. The multi-faceted threat of fraud: Are banks up to the challenge?* https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2019/05/global-banking-fraud-survey.pdf

101. Kramaric, T. P., Cipcic, M. L., & Miletic, M. (2017). Has the financial crisis affected the profitability of banks in Croatia? *Journal of Applied Finance and Banking, 7*(3), 21–45. https://www.scienpress.com/Upload/JAFB%2fVol%207_3_2.pdf

102. Kristina, Y., Ahmad, S., & Pratama, A. Y. (2014). Achieving environmental excellence: Through 3R waste management. In *Proceedings of the 38th Annual Convention of the Indonesian Petroleum Association 2014: Strengthening partnerships to enhance Indonesia's energy resilience and global competitiveness* (Vol. 3, pp. 1380–1388). Indonesian Petroleum Association (IPA). https://www.ipa.or.id/en/publications/achieving-environmental-excellence-through-3r-waste-management

103. Kumar, B. (2016). A study of productivity of employees in public sector commercial banks of India and Nepal. *Effulgence, 14*(2), 12–18. https://doi.org/10.33601/effulgence.rdias/v14/i2/2016/12-18

104. Kumar, S. G., & Jayanthi, M. (2017). An empirical study on bank specific and institutional specific factors delineating key profitability indicators of nationalized banks in India. *ICTACT Journal on Management Studies, 3*(1), 427–432. http://doi.org/10.21917/ijms.2017.0057

105. Kurawa, J. M., & Garba, S. (2014). An evaluation of the effect of credit risk management (CRM) on the profitability of Nigerian banks. *Journal of Modern Accounting and Auditing, 10*(1), 104–115. https://www.researchgate.net/publication/308723300_An_Evaluation_of_the_effect_of_Credit_Risk_Management_CRM_on_the_profitability_of_Nigerian_Banks

106. Kwan, S., & Eisenbeis, R. A. (1997). Bank risk, capitalization, and operating efficiency. *Journal of Financial Services Research, 12*(2–3), 117–131. https://doi.org/10.1023/A:1007970618648

107. 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

108. Ledhem, M. A., & Mekidiche, M. (2020). Economic growth and financial performance of Islamic banks: A CAMELS approach. *Islamic Economic Studies, 28*(1), 47–62. https://doi.org/10.1108/IES-05-2020-0016

109. Lee, A. H. I., Kang, H.-Y., Hsu, C.-F., & Hung, H.-C. (2009). A green supplier selection model for high-tech industry. *Expert Systems with Applications, 36*(4), 7917–7927. https://doi.org/10.1016/j.eswa.2008.11.052

110. Lestari, S. P., Wahyuni, S. F., & Affandi, W. S. (2022). The influence of capital adequacy ratio, net interest margin and operational costs of operating revenue on return on asset with loan to deposit ratio as intervening variable. *MORFAI Journal, 2*(2), 189–208. https://doi.org/10.54443/morfai.v2i2.244

111. Li, X., Feng, H., Zhao, S., & Carter, D. A. (2021). The effect of revenue diversification on bank profitability and risk during the COVID-19 pandemic. *Finance Research Letters, 43*, Article 101957. https://doi.org/10.1016/j.frl.2021.101957

112. Liu, J., & Pariyaprasert, W. (2015). Determinants of bank performance: The application of the CAMEL model to banks listed in China's Stock Exchanges from 2008 to 2011. *AU-GSB e-Journal, 7*(2). http://www.assumptionjournal.au.edu/index.php/AU-GSB/article/view/1067

113. Lo, S.-F., & Sheu, H.-J. (2007). Is corporate sustainability a value-increasing strategy for business? *Corporate Governance: An International Review, 15*(2), 345–358. https://www.researchgate.net/publication/4989158_Is_Corporate_Sustainability_a_Value-Increasing_Strategy_for_Business

114. Loderer, C. F., & Waelchli, U. (2010). *Firm age and performance.* http://doi.org/10.2139/ssrn.1342248

115. Majumdar, S. K. (1997). The impact of size and age on firm-level performance: Some evidence from India. *Review of Industrial Organization, 12,* 231–241. https://doi.org/10.1023/A:1007766324749

116. Marshall, A. (1890). Principles of economics (8th ed.). Macmillan.

117. Mathuva, D. M. (2009). Capital adequacy, cost income ratio and the performance of commercial banks: The Kenyan scenario. *The International Journal of Applied Economics and Finance, 3*(2), 35–47. https://doi.org/10.3923/ijaef.2009.35.47

118. Matthews, K., Murinde, V., & Zhao, T. (2007). Competitive conditions among the major British banks. *Journal of Banking & Finance, 31*(7), 2025–2042. https://doi.org/10.1016/j.jbankfin.2006.11.009

119. Mesa, R. B., Sánchez, H. M., & Ramírez Sobrino, J. N. (2014). Principales determinantes de la eficacia y repercusiones en la concentración bancaria en la Unión Europea [Main determinants of efficiency and implications on banking concentration in the European Union]. *Revista de Contabilidad, 17*(1), 78–87. https://doi.org/10.1016/j.rcsar.2013.08.006

120. Miah, M. D., & Sharmeen, K. (2015). Relationship between capital, risk and efficiency: A comparative study between Islamic and conventional banks of Bangladesh. *International Journal of Islamic and Middle Eastern Finance and Management, 8*(2), 203–221. https://doi.org/10.1108/IMEFM-03-2014-0027

121. Mohiuddin, M. (2017). The determinants of profitability of private banks in Bangladesh: An empirical analysis. *Iğdır Üniversitesi Sosyal Bilimler Dergisi, 11,* 141–172. https://dergipark.org.tr/tr/download/article-file/2154177

122. Msomi, T. S., & Olarewaju, O. M. (2022). Dynamic panel investigation of the determinants of South African commercial banks' operational efficiency. *Banks and Bank Systems, 17*(4), 35–49. http://doi.org/10.21511/bbs.17(4).2022.04

123. Mulualem, G. (2015). *Analyzing financial performance of commercial banks in Ethiopia: CAMEL Approach* [Doctoral dissertation, Addis Ababa University]. Addis Ababa University Libraries. http://etd.aau.edu.et/handle/123456789/4549

124. Mustapha, N. S. (2017). *Banking and microfinance performance: Market power, efficiency, performance, outreach and sustainability perspectives* [Doctoral dissertation, University of New Orleans]. University of New Orleans Theses and Dissertations. https://scholarworks.uno.edu/td/2347

125. Nájera–Sánchez, J. J. (2020). A systematic review of sustainable banking through a co-word analysis. *Sustainability, 12*(1), Article 278. https://doi.org/10.3390/su12010278

126. Nguyen, A. H., Nguyen, H. T., & Pham, H. T. (2020). Applying the CAMEL model to assess performance of commercial banks: Empirical evidence from Vietnam. *Banks and Bank Systems, 15*(2), 177–186. http://doi.org/10.21511/bbs.15(2).2020.16

127. Nissim, D., & Penman, S. H. (2001). Ratio analysis and equity valuation: From research to practice. *Review of Accounting Studies, 6,* 109–154. https://doi.org/10.1023/A:1011338221623

128. Norreklit, H. (2000). The balance on the balanced scorecard a critical analysis of some of its assumptions. *Management Accounting Research, 11*(1), 65–88. https://doi.org/10.1006/mare.1999.0121

129. Nosratabadi, S., Pinter, G., Mosavi, A., & Semperger, S. (2020). Sustainable banking; evaluation of the European business models. *Sustainability, 12*(6), Article 2314. https://doi.org/10.3390/su12062314

130. Nst, A. M. Z., Nst, S. W. P., & Pratama, D. (2020). The influence of capital adequacy ratio (CAR), non performing loans (NPL), operating costs to operating income (BOPO) on liquidity as measured by loan to deposit ratio at Bank Rakyat Indonesia Tbk. *ProBisnis: Jurnal Manajemen, 11*(1), 44–46. https://ejournal.joninstitute.org/index.php/ProBisnis/article/view/66

131. O'Connell, M. (2023). Bank–specific, industry-specific and macroeconomic determinants of bank profitability: Evidence from the UK. *Studies in Economics and Finance, 40*(1), 155–174. https://doi.org/10.1108/SEF-10-2021-0413

132. Odunga, R. M. (2016). Specific performance indicators, market share and operating efficiency for commercial banks in Kenya. *International Journal of Finance and Accounting, 5*(3), 135–145. https://doi.org/10.5923/j.ijfa.20160503.01

133. Olarewaju, O. M., & Obalade, A. A. (2015). Evaluation of the determinants of operational efficiency in Nigerian deposit money banks. *International Journal of Economics, Commerce and Management, 3*(2). https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=015b8440ea35eeb2f506dc096a16f26ac446be1f

134. Olszak, M., & Chodnicka, P. (2014). Do institutional and political factors matter for the efficiency of banking sectors? *Journal of Banking and Financial Economics, 1*(1), 40–58. https://www.researchgate.net/publication/270357493_Do_Institutional_and_Political_Factors_Matter_for_the_Efficiency_of_Banking_Sectors

135. Olweny, T., & Shipho, T. M. (2011). Effects of banking sectoral factors on the profitability of commercial banks in Kenya. *Economics and Finance Review, 1*(5), 1–30. https://www.researchgate.net/publication/263542674_EFFECTS_OF_BANKING_SECTORAL_FACTORS_ON_THE_PROFITABILITY_OF_COMMERCIAL_BANKS_IN_KENYA

136. Omar, H., & Mugabe, A. N. (2016). Camels model analysis and financial performance in Rwanda. *The International Journal of Business & Management, 4*(12), 298–317. https://www.internationaljournalcorner.com/index.php/theijbm/article/view/127344

137. Ongore, V. O., & Kusa, G. B. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues, 3*(1), 237–252. https://www.econjournals.com/index.php/ijefi/article/view/334

138. Oyegunle, A., & Weber, O. (2015). *Development of sustainability and green banking regulations: Existing codes and practices* (CIGI Paper No. 65). Centre for International Governance Innovation (GIGI). https://www.cigionline.org/static/documents/cigi_paper_no.65_4.pdf

139. Pampurini, F., & Quaranta, A. G. (2018). Sustainability and efficiency of the European banking market after the global crisis: The impact of some strategic choices. *Sustainability, 10*(7), Article 2237. https://doi.org/10.3390/su10072237

140. Paradi, J. C., Zhu, H., & Edelstein, B. (2012). Identifying managerial groups in a large Canadian bank branch network with a DEA approach. *European Journal of Operational Research, 219*(1), 178–187. https://doi.org/10.1016/j.ejor.2011.12.022

141. Pati, A. P. (2015). Are regulatory microfinance institutions of India better off than non-regulatory ones? A comparison of performance and sustainability. *Paradigm, 19*(1), 21–36. https://doi.org/10.1177/0971890715585199

142. Pearce, D. W., Markandya, A., & Barbier, E. (1989). *Blueprint for a green economy.* Earthscan.

143. Podder, B., Venkatesh, S., Wongsurawat, W., & Badir, Y. (2012). *Determinants of profitability of private commercial banks in Bangladesh: An empirical study* [Master's thesis, Asian Institute of Technology].

144. Pollinger, J. J., Outhwaite, J., & Cordero-Guzmán, H. (2007). The question of sustainability for microfinance institutions. *Journal of Small Business Management, 45*(1), 23–41. https://doi.org/10.1111/j.1540-627X.2007.00196.x

145. Poolthong, Y., & Mandhachitara, R. (2009). Customer expectations of CSR, perceived service quality and brand effect in Thai retail banking. *International Journal of Bank Marketing, 27*(6), 408–427. https://doi.org/10.1108/02652320910988302

146. Porawouw, M. A., Pangemanan, S. S., & Mekel, P. A. (2014). The application of Camel model on banks listed in Indonesia Stock Exchange period 2008–2010. *Jurnal Riset Ekonomi, Manajemen, Bisnis dan Akuntansi, 2*(1), 192–200. https://doi.org/10.35794/emba.v2i1.3581

147. Pouraghajan, A., Malekian, E., Emamgholipour, M., Lotfollahpour, V., & Bagheri, M. M. (2012). The relationship between capital structure and firm performance evaluation measures: Evidence from the Tehran Stock Exchange. *International journal of Business and Commerce, 1*(9), 166–181. https://ijbcnet.com/1-9/IJBC-12-1915.pdf

148. Prasad, K. V. N., & Chari, A. A. (2011). Factors affecting efficiency of banks: A study on public and private sector banks. *ELK Journal of Finance and Risk Management, 2*(1), 368–379.

149. Prasetio, A. E., Azizah, U. S. A., & Daulay, Y. (2021). The effect of total assets turnover, current ratio and financial technology on the profitability of banking companies in Indonesia. *Jurnal Ilmiah Manajemen dan Bisnis, 7*(2), 253–262. https://media.neliti.com/media/publications/459843-the-effect-of-total-assets-turnover-curr-f72ca8da.pdf

150. Puspitasari, E., Sudiyatno, B., Aini, N., & Anindiansyah, G. (2021). The relationship between net interest margin and return on asset: Empirical study of conventional banking in Indonesia. *Academic Journal of Interdisciplinary Studies, 10*(3), 362–374. https://doi.org/10.36941/ajis-2021-0090

151. Putri, L. W., & Ningtyas, M. N. (2023). Financial performance of Bank Syariah Indonesia before and after merger. *Dialektika: Jurnal Ekonomi dan Ilmu Sosial, 8*(1), 1–11. https://doi.org/10.36636/dialektika.v8i1.1309

152. Rachdi, H. (2013). What determines the profitability of banks during and before the international financial crisis? Evidence from Tunisia. *International Journal of Economics, Finance and Management, 2*(4), 330–337. https://www.ejournalofbusiness.org/archive/vol2no4/vol2no4_8.pdf

153. Rahman, M. M., Hamid, M. K., & Khan, M. A. M. (2015). Determinants of bank profitability: Empirical evidence from Bangladesh. *International Journal of Business and Management, 10*(8), 135–150. https://doi.org/10.5539/ijbm.v10n8p135

154. Rahman, S., Tan, L. H., Hew, O. L., & Tan, Y. S. (2004). Identifying financial distress indicators of selected banks in Asia. *Asian Economic Journal, 18*(1), 45–57. https://doi.org/10.1111/j.1467-8381.2004.00181.x

155. Rankin, M., Ferlauto, K., McGowan, S. C., & Stanton, P. A. (2012). *Contemporary issues in accounting* (3rd ed.). Wiley.

156. Raut, R., Cheikhrouhou, N., & Kharat, M. (2017). Sustainability in the banking industry: A strategic multi-criterion analysis. *Business Strategy and the Environment, 26*(4), 550–568. https://doi.org/10.1002/bse.1946

157. Rezitis, A. N. (2008). Efficiency and productivity effects of bank mergers: Evidence from the Greek banking industry. *Economic Modelling, 25*(2), 236–254. https://doi.org/10.1016/j.econmod.2007.04.013

158. Rime, B., & Stiroh, K. J. (2003). The performance of universal banks: Evidence from Switzerland. *Journal of Banking & Finance, 27*(11), 2121–2150. https://doi.org/10.1016/S0378-4266(02)00318-7

159. Rostami, M. (2015). Determination of Camels model on bank's performance. *International Journal of Multidisciplinary Research and Development, 2*(10), 652–664. https://www.allsubjectjournal.com/assets/archives/2015/vol2issue10/123.pdf

160. Rotich, G. (2015). *The Relationship between financial structure and financial performance of microfinance banks in Kenya* [Master's thesis, University of Nairobi]. University of Nairobi Research Archive. http://erepository.uonbi.ac.ke/bitstream/handle/11295/93392/Rotich_The%20Relationship%20Between%20Financial%20Structure%20And%20Financial%20Performance%20Of%20Microfinance%20Banks%20In%20Kenya.pdf?sequence=4

161. Ruslan, A., Pahlevi, C., Alam, S., Nohong, M., & Reni, A. (2019). Determinants of banking efficiency and its impact on banking competitive advantage. In A. Reni, A. R. Munir, M. Munizu, C. Phuakkhong, N. H. Ahmad, S. H. Siddiqui, & K. M. Kura (Eds.), *Proceedings of the 3rd International Conference on Accounting, Management and Economics 2018 (ICAME 2018)* (pp. 371–379). Atlantis Press. https://doi.org/10.2991/icame-18.2019.41

162. Saklain, M. S., Jongwanich, J., & Badir, Y. (2012). *The profitability determinants of private commercial banks in Bangladesh* [Doctoral dissertation, Asian Institute of Technology].

163. Saleh, I., & Abu Afifa, M. (2020). The effect of credit risk, liquidity risk and bank capital on bank profitability: Evidence from an emerging market. *Cogent Economics & Finance, 8*(1), Article 1814509. https://doi.org/10.1080/23322039.2020.1814509

164. Samad, A. (2015). Determinants bank profitability: Empirical evidence from Bangladesh commercial banks. *International Journal of Financial Research, 6*(3), 173–179. https://doi.org/10.5430/ijfr.v6n3p173

165. Sangmi, M.-U.-D., & Nazir, T. (2010). Analyzing financial performance of commercial banks in India: Application of CAMEL model. *Pakistan Journal of Commerce and Social Sciences (PJCSS), 4*(1), 40–55. http://hdl.handle.net/10419/187999

166. Santika, E., Fakhrughozy, M. H., Nur, W. M., & Lestari, H. S. (2022). Effect of operational risk on financial performance in banking industry IDX. *Jurnal Ekonomi, 27*(1), 123–137. https://doi.org/10.24912/je.v27i1.915

167. Santosuosso, P. (2014). Do efficiency ratios help investors to explore firm performances? Evidence from Italian listed firms. *International Business Research, 7*(12), 111–119. https://doi.org/10.5539/ibr.v7n12p111

168. Saunders, A., & Lim, J. (1990). Underpricing and the new issue process in Singapore. *Journal of Banking & Finance, 14*(2–3), 291–309. https://doi.org/10.1016/0378-4266(90)90051-3

169. Schnietz, K. E., & Epstein, M. J. (2005). Exploring the financial value of a reputation for corporate social responsibility during a crisis. *Corporate Reputation Review, 7*, 327–345. https://doi.org/10.1057/palgrave.crr.1540230

170. Scholtens, B. (2006). Finance as a driver of corporate social responsibility. *Journal of Business Ethics, 68*, 19–33. https://doi.org/10.1007/s10551-006-9037-1

171. Scholtens, B. (2008). A note on the interaction between corporate social responsibility and financial performance. *Ecological Economics, 68*(1–2), 46–55. https://doi.org/10.1016/j.ecolecon.2008.01.024

172. Scholtens, B., & van't Klooster, S. (2019). Sustainability and bank risk. *Palgrave Communications, 5*(1), Article 105. https://doi.org/10.1057/s41599-019-0315-9

173. Schröder, M. (2014). Financial effects of corporate social responsibility: A literature review. *Journal of Sustainable Finance & Investment, 4*(4), 337–350. https://doi.org/10.1080/20430795.2014.971096

174. Setiawan, Y., Mulyadi, & Nupus, M. (2021). The effect of capital adequacy ratio and loan to deposit ratio on banking profitability. *Bina Bangsa International Journal of Business and Management, 1*(1), 79–89. https://doi.org/10.46306/bbijbm.v1i1.9

175. Shah, A. A., Wu, D., & Korotkov, V. (2019). Are sustainable banks efficient and productive? A data envelopment analysis and the Malmquist productivity index analysis. *Sustainability, 11*(8), Article 2398. https://doi.org/10.3390/su11082398

176. Shah, S. Q., & Jan, R. (2014). Analysis of financial performance of private banks in Pakistan. *Procedia — Social and Behavioral Sciences, 109*, 1021–1025. https://doi.org/10.1016/j.sbspro.2013.12.583

177. Shen, L., Olfat, L., Govindan, K., Khodaverdi, R., & Diabat, A. (2013). A fuzzy multi criteria approach for evaluating green supplier's performance in green supply chain with linguistic preferences. *Resources, Conservation and Recycling, 74*, 170–179. https://doi.org/10.1016/j.resconrec.2012.09.006

178. Shukla, A., Narayanasamy, S., & Krishnakumar, R. (2020). Impact of board size on the accounting returns and the asset quality of Indian banks. *International Journal of Law and Management, 62*(4), 297–313. https://doi.org/10.1108/IJLMA-12-2018-0271

179. Sitompul, S., & Nasution, S. K. (2019). The effect of Car, BOPO, NPF, and FDR on profitability of sharia commercial banks in Indonesia. *Budapest International Research and Critics Institute-Journal, 2*(3), 234–238. https://www.researchgate.net/publication/334946584_The_Effect_of_Car_BOPO_NPF_and_FDR_on_Profitability _of_Sharia_Commercial_Banks_in_Indonesia

180. Smaoui, H., Mimouni, K., Miniaoui, H., & Temimi, A. (2020). Funding liquidity risk and banks' risk–taking: Evidence from Islamic and conventional banks. *Pacific-Basin Finance Journal, 64*, Article 101436. https://doi.org/10.1016/j.pacfin.2020.101436

181. Soewignyo, F., & Soewignyo, T. I. (2015). The influence of talent factors on business performance. *Issues In Social and Environmental Accounting, 9*(1), 76–99. https://www.academia.edu/80151065/The_Influence_of _Talent_Factors_on_Business_Performance

182. Soliman, M. T. (2008). The use of DuPont analysis by market participants. *The Accounting Review, 83*(3), 823–853. https://doi.org/10.2308/accr.2008.83.3.823

183. Soni, R. (2012). Managerial efficiency — Key driver towards the profitability of Indian commercial banks in turbulent time. *International Journal of Applied Research & Studies, 1*(2).

184. Sontag-Padilla, L. M., Staplefoote, L., & Morganti, K. G. (2012). *Financial sustainability for nonprofit organizations: A review of the literature.* The RAND Corporation. https://www.rand.org/pubs/research _reports/RR121.html

185. Soteriou, A., & Zenios, S. A. (1999). Operations, quality, and profitability in the provision of banking services. *Management Science, 45*(9), 1221–1238. https://doi.org/10.1287/mnsc.45.9.1221

186. Stanger, A. M. (2000). *Determinants of home-based business sales performance.* Flinders University of South Australia.

187. Stankeviciene, J., & Nikonorova, M. (2014). Sustainable value creation in commercial banks during financial crisis. *Procedia — Social and Behavioral Sciences, 110*, 1197–1208. https://doi.org/10.1016/j.sbspro .2013.12.966

188. Stauropoulou, A., & Sardianou, E. (2019). Understanding and measuring sustainability performance in the banking sector. *IOP Conference Series: Earth and Environmental Science, 362*(1), Article 012128. https://doi.org/10.1088/1755-1315/362/1/012128

189. Stefanovic, J. R., & Bryan, R. B. (2007). Experimental study of rill bank collapse. *Earth Surface Processes and Landforms, 32*(2), 180–196. https://doi.org/10.1002/esp.1396

190. Stinchcombe, A. (1965). Organization-creating organizations. *Trans-action, 2*(2), 34–35. https://doi.org/10 .1007/BF03180801

191. Sufian, F., & Habibullah, M. S. (2009). Determinants of bank profitability in a developing economy: Empirical evidence from Bangladesh. *Journal of Business Economics and Management, 10*(3), 207–217. https://doi.org/10.3846/1611-1699.2009.10.207-217

192. Swami, O. S., Vishnu Kumar, N. A., & Baruah, P. (2012). Determinants of the exit decision of foreign banks in India. *Ushus Journal of Business Management, 10*(1), 1–16. https://mpra.ub.uni-muenchen.de/id/eprint/38722

193. Swandewi, N. K. M., & Purnawati, N. K. (2021). Capital adequacy ratio mediates the effect of non-performing loan on returns on assets in public commercial banks. *American Journal of Humanities and Social Sciences Research (AJHSSR), 5*(1), 651–656. https://www.ajhssr.com/wp-content/uploads/2021/01/ZZX21501651656.pdf

194. Tan, L. H., Chew, B. C., & Hamid, S. R. (2017). Service quality implementation in shaping sustainable banking operating system. *Qualitative Research in Financial Markets, 9*(4), 359–381. https://doi.org/10.1108/QRFM-01-2017-0002

195. Tan, Y., & Tsionas, M. G. (2022). Modelling sustainability efficiency in banking. *International Journal of Finance & Economics, 27*(3), 3754–3772. https://doi.org/10.1002/ijfe.2349

196. Taylor, W. M., Thompson, R. G., Thrall, R. M., & Dharmapala, P. S. (1997). DEA/AR efficiency and profitability of Mexican banks a total income model. *European Journal of Operational Research, 98*(2), 346–363. https://doi.org/10.1016/S0377-2217(96)00352-9

197. Titko, J., Skvarciany, V., & Jurevičienė, D. (2015). Drivers of bank profitability: Case of Latvia and Lithuania. *Intellectual Economics, 9*(2), 120–129. https://doi.org/10.1016/j.intele.2016.02.003

198. Trinh, V. Q., Elnahass, M., Salama, A., & Izzeldin, M. (2020). Board busyness, performance and financial stability: does bank type matter? *The European Journal of Finance, 26*(7–8), 774–801. https://doi.org/10.1080 /1351847X.2019.1636842

199. Triodos Facet. (2009). *Risk management and sustainability management: A handbook for microfinance practitioners.* https://angonet.org/dw/sites/default/files/online_lib_files/a-handbook-for-microfinance-practioners-2009-risk-management-and-sustainability-management.pdf

200. Trujillo-Ponce, A. (2013). What determines the profitability of banks? Evidence from Spain. *Accounting & Finance, 53*(2), 561–586. https://doi.org/10.1111/j.1467-629X.2011.00466.x

201. Uddin, M. K. (2022). Effect of leverage, operating efficiency, non-performing loan, and capital adequacy ratio on profitability of commercial banks in Bangladesh. *European Journal of Business and Management Research, 7*(3), 289–295. https://doi.org/10.24018/ejbmr.2022.7.3.1463

202. Vernikov, A. (2010). *Russian banking: a comeback of the state* (Working Paper No. 104). Centre for Comparative Economics. https://discovery.ucl.ac.uk/id/eprint/19252/1/19252.pdf

203. Wafula, D. N., Mutua, S. M., & Musiega, M. G. (2017). Influence of financial performance on financial sustainability of microfinance institutions in Kenya. *International Journal of Management and Commerce Innovations, 4*(2), 295–302. https://www.researchgate.net/publication/309479311_INFLUENCE_OF_FINANCIAL_PERFORMANCE_ON_FINANCIAL_SUSTAINABILITY_OF_MICROFINANCE_INSTITUTIONS_IN_KENYA

204. Wagner, M., Van Phu, N., Azomahou, T., & Wehrmeyer, W. (2002). The relationship between the environmental and economic performance of firms: An empirical analysis of the European paper industry. *Corporate Social Responsibility and Environmental Management, 9*(3), 133–146. https://doi.org/10.1002/csr.22

205. Warrad, L., & Al Omari, R. (2015). The impact of turnover ratios on Jordanian services sectors' performance. *Journal of Modern Accounting and Auditing, 11*(2), 77–85. https://doi.org/10.17265/1548-6583/2015.02.001

206. Weber, O. (2013). *Sustainable banking — History and current developments* (EMES-SOCENT Conference Selected Papers No. LG13-39). Interuniversity Attraction Pole (IAP) on Social Enterprise (SOCENT). https://emes.net/content/uploads/publications/weber_ecsp-lg13-39.pdf

207. Weber, O. (2017). Corporate sustainability and financial performance of Chinese banks. *Sustainability Accounting, Management and Policy Journal, 8*(3), 358–385. https://doi.org/10.1108/SAMPJ-09-2016-0066

208. Winn, M., Pinkse, J., & Illge, L. (2012). Case studies on trade-offs in corporate sustainability. *Corporate Social Responsibility and Environmental Management, 19*(2), 63–68. https://doi.org/10.1002/csr.293 https://doi.org/10.1002/csr.293

209. Wu, M.-W., & Shen, C.-H. (2013). Corporate social responsibility in the banking industry: Motives and financial performance. *Journal of Banking & Finance, 37*(9), 3529–3547. https://doi.org/10.1016/j.jbankfin.2013.04.023

210. Yadav, M. S. (2011). Impact of non-performing assets on profitability and productivity of public sector banks in India. *AFBE Journal, 4*(1), 232–239.

211. Yip, A. W. H., & Bocken, N. M. P. (2018). Sustainable business model archetypes for the banking industry. *Journal of Cleaner Production, 174*, 150–169. https://doi.org/10.1016/j.jclepro.2017.10.190

212. Yuhasril, Y. (2019). The effect of capital adequacy ratio (CAR), non-performing loan (NPL), operational efficiency (BOPO), net interest margin (NIM), and loan to deposit ratio (LDR), on return on assets (ROA). *Research Journal of Finance and Accounting, 10*(10), 166–176. https://doi.org/10.7176/RJFA/10-10-19

213. Zeitun, R. (2012). Determinants of Islamic and conventional banks performance in GCC countries using panel data analysis. *Global Economy and Finance Journal, 5*(1), 53–72. https://pdfcoffee.com/determinants-of-islamic-and-conventional-banks-performance-in-gcc-countries-using-panel-data-analysis-pdf-free.html

214. Zhao, T., & Murinde, V. (2011). Bank deregulation and performance in Nigeria. *African Development Review, 23*(1), 30–43. https://doi.org/10.1111/j.1467-8268.2010.00270.x

215. Zheng, C., Rahman, M. M., Begum, M., & Ashraf, B. N. (2017). Capital regulation, the cost of financial intermediation and bank profitability: Evidence from Bangladesh. *Journal of Risk and Financial Management, 10*(2), Article 9. https://doi.org/10.3390/jrfm10020009

216. Zvezdov, D. (2012, April 26–27). *Stages of engaging with corporate sustainability accounting* [Conference presentation]. ICCSR 10th Anniversary Conference 2012. CSR futures: Knowledge & practice, Nottingham, United Kingdom.

217. Zyadat, A. A. H. (2017). The impact of sustainability on the financial performance of Jordanian Islamic banks. *International Journal of Economics and Finance, 9*(1), 55–63. https://doi.org/10.5539/ijef.v9n1p55