**“Corporate Governance, Financial Innovation and Bank Performance: The Moderating Role of Ownership Structure”**



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**“Chapter 1. Introduction”**

**1.1 Historical Perspective**

Over the past two decades, study on corporate governance of business enterprises has received an immense attention and growing research is also witnessing due to obligatory compliance (Li et al. 2020). A diligent, open, and transparent business culture is vitally influenced by corporate governance. Corporate governance is a mechanism that not only improves the relationships among several stakeholders (such as owners, executives, and financiers of a firm), but also ensures that resources are allocated fairly among conflicting users.

(Al-ahdal et al., 2020). “Corporate governance is the approach that will assist the company to succeed and provide a solution to the management's disappointment that results from the misappropriation of the CG codes. (Aslam, E., & Haron, R., 2021). Increased investor trust and economic efficiency are two main advantages of good corporate governance. (OECD, 2004). Corporate research still concentrates largely on practical and conceptual investigations into corporate governance and its link to firm performance. The management of corporate governance processes is crucial to enhancing business performance. Guluma, T. F. (2021).

Moreover, Corporate investors and other related parties have shown great deal of interest in the field of corporate governance (Nelson, J., 2005) and it is becoming a matter of argument particularly after the rise of financial crises such as Asian financial crises of 1997-1998 and World financial crises of 2007-2009 (Aslam, E., & Haron, R., 2021) which indicated the weak corporate governance practices (Khatib et al. 2022). Agency theory is most prevalent theoretical perspective in corporate governance and connected with the ownership and control (Warrad, L., & Khaddam, L., 2020). Agency theory suggests that a firm with better governance should achieve more and be worth more due to lower agency expenses. Resource dependence theory argues that the board of directors acts as a skilled entity for an organization’s viability. The board of directors gives the board significant resources, contributing their knowledge, skills, and expertise that they have gained from their training and professional experience as a result useful for the board's discussion of topics and decision-making (Almutairi and Quttainah, 2017; Farag et al., 2018). Stewardship theory describes the joint leadership structure at the board level may lower information cost, increase stability and improve organizational effectiveness besides effectiveness of management leadership. The stewardship theory sees directors as stewards who can enhance business performance. (Almutairi and Quttainah, 2020). Good corporate governance is essential for a business in a number of ways as it augments the company's image, mitigates risks, and inspires investor trust. In addition, excellent corporate governance establishes a variety of internal control systems, reliable procedures and external environments which efficiently contribute to the development of business companies as a unit in order to achieve good corporate governance. (OECD, 2005 & Guluma, T. F., 2021). Further, Corporate governance is a crucial pillar of transparent, flourishing, and sound banking system, and it continues to be a primary element in major policy decisions, given its crucial contribution to the growth of shareholder value and company performance. The Basel Committee on Banking Supervision (2006) urges banks to improve their governance systems. Banks play an important role in the nation's economic and financial systems and serve as the hub of its payment processes (Handa, R. 2018). Numerous researches debate the importance of CG to bank performance.

In the literature, researchers identify certain areas of corporate governance that need to be explored such as investigating direct connection between corporate governance and firm performance, however, corporate governance and firm performance may have indirect relationship too (Khatib et al. 2022), hence, this study will address this gap and explore the mediating role of financial innovation on the link between corporate governance and bank performance in addition to examining direct link between corporate governance and bank performance. Frame, W. S., & White, L. J. (2004) explain that a financial innovation means “something novel that lowers costs, lowers risks, or offers an enhanced product, service or instrument that effectively meets customer’s needs”. Tamara et.al (2019) mentioned that financial innovation has unique features which differentiate it from industry and technological innovation. Silber in 1983 presented advanced constraint-induced financial innovation theory. According to him the key motive behind financial innovation is profit maximization of financial firms. The constraint-induced financial innovation theory is pertinent to the current study as CEO who is a part of organizational management, look for the innovation as a means to attain goal of profit maximization. Juhakam (2003) defines the theory of cost reduction as a driver of financial innovation and revealed the respond to progression in technology, which results in the reduction in transaction cost, is the vital factor in financial innovation. Several studies explain the association between corporate governance and financial innovation regarding firm’s willingness to involve in financial innovation (Wang, L.-H., & Cao, X.-Y. 2022). Studies have also concluded that financial innovation and the performance of banks has positive correlation with each other (Wang, L.-H., & Cao, X.-Y. 2022; El-Chaarani, 2018). Shanmugam, K. R., & Nigam, R. Rare studies are found in literature where impact of financial innovation mediating variable is investigated in the link between corporate governance and bank performance especially with respect of Islamic banking. The research will also bridge this gap and will examine the mediating role of financial innovation.

Haniffa and Hudaib (2006) revealed that several governance mechanisms for ownership structures are introduced in the organizations to control and manage agency conflict and agency costs. Shawtari, F. A. M. (2018) found that numerous ownership types can have different effect on the performance of firms. Researchers have also studied the moderating role of ownership structure in context of corporate governance, innovation and performance separately. This research will examine the moderating role of ownership structure on the links between corporate governance and financial innovation, between financial innovation and bank performance and between corporate governance and bank performance in a single model.

**1.2 Limitation of the Study**

The outcomes of the study will provide insight into how corporate governance will impact bank’s performance through mediating role of financial innovation and will also analyze the moderating role of ownership structure. The study will be limited to the conventional and Islamic banks of emerging markets such Pakistan, Bangladesh, Malaysia, Indonesia and UAE due to data limitations and analysis will be based on the selected banks from each country. Data will be secondary in nature and will be comprised of financial year 2011-2021 and hence limiting the time frame to 10 years of recent past. The study will focus on four characteristics of corporate governance; “board size, board independence, gender diversity and CEO duality”. Further, Financial Innovation will be measured through ratio of ATM’s to number of branches as other data of other proxies such as patents or research and development expenditure measuring financial innovation is not available in developing countries. Measures of ownership structure will also be limited to foreign, domestic, family and government ownership because of availability of data. Moreover, study will consider only banking sector whereas, other sectors such as manufacturing can be explored for future research.

**1.3 Problem Statement**

Despite the growing interest in the association between corporate governance and bank performance, there is a lack of empirical evidence on how financial innovation through mediation and different types of ownership structure through moderation affect this relationship. The investigation of effect of financial innovation and ownership structure on the association between corporate governance and bank performance is seldom found in literature and this question is still unresolved. Ownership structure can have significant implications for the incentives, constraints and risks faced by the banks, which in turn can influence their decisions regarding governance practices and innovation strategies. Previous studies have not examined the moderating role of ownership structure and mediating role of financial innovation in a single study regarding emerging countries in this context. Hence, this study intends to explore the moderating role of ownership structure on the link between corporate governance, financial innovation and bank performance in emerging markets. Further, this study also aims to analyze the mediating role of financial innovation on the link between corporate governance and bank performance. This study addresses a number of important and unanswered questions concerning to bank performance.

1. How does corporate governance mechanism important to improve bank performance?
2. What are the important corporate governance attributes that may affect bank performance?
3. How do corporate governance attributes enhance financial innovation?
4. How do corporate governance attributes enhance bank’s performance?
5. Does financial innovation has mediating impact on the link between corporate governance and bank performance?
6. Does ownership structure has moderating impact on the relationships between corporate governance and financial innovation?
7. Does ownership structure has moderating impact on the relationships between corporate governance and bank’s performance?
8. Does ownership structure has moderating impact on the relationships between corporate financial innovation and bank’s performance?

**1.4 Objectives**

Corporate governance is among one of the most important pillars of transparent, vibrant and healthy banking system and remains in spot light of major policy decisions especially in the context of its vital role in increasing the shareholder’s worth and firm performance. The topic of corporate governance is now frequently discussed in both developed and developing nations and being an essential driver of firm performance (Warrad, L., & Khaddam, L., 2020). Further, sound governance mechanisms control and manage principal agent conflicts in the light of various management and economic theories such as agency theory, stewardship theory, resources dependencies theory and contingency theory.

Banking sector is an important component of financial system and has been remain in the focus of both academia and policymakers. For improving bank governance to enhance monitory efficiency and to ensure a sound banking system, Basel Committee on Banking Supervision (BCBS) issues various principals in this regard, which reflects the importance and vital role of corporate governance in banks (Ben Khediri, K., et al., 2021). Moreover, due to risk averse bank’s shareholders, prudent banking regulations from regulators and complexity of the banking business, governance of banks is different from non-financial firms (John et al., 2016). On one hand where bank performance is highly impacted by corporate governance (Ma’aji, 2021; Bhatia, M., & Gulati, R. 2021; Habtoor, O. S. 2021;) but on the other hand, bank performance could be improved by earning income in shape of bank fees by offering value added banking products and services through innovation to their customers (Wang, L.-H., & Cao, X.-Y. 2022).

Literature revealed that organization’s willingness to involve in financial innovation depends upon its corporate governance and effective corporate governance mechanisms enhances innovation performance (Chi 2017; Balsmeier et al. 2017; Xiao and Zhao 2012). Financial innovation fills the gaps exist in financial sector such as cutting marketing, transaction and research cost, controlling agency problems and information asymmetries, respond to regulation and taxation changes, completion of incomplete markets and connecting to globalization risks and technological shocks. Studies have concluded that financial innovation and the performance of banks has positive correlation with each other (Wang, L.-H., & Cao, X.-Y. 2022; El-Chaarani, 2018).

The ownership structure is one of the critical factor which governs the wealth of shareholders and performance of the firms (Al Farooque et al. 2020; Jenson, 2003). Academic researchers, regulatory bodies and market players show their considerable interest in the link between ownership structure and firm performance (Habtoor, O. S.,2021). Moreover, the effective ownership structure restricts the individual power to dominate the decision making of the firm’s activities as all the shareholders have the right to participate in the decision making according to their ownership which impact the firm performance (Al Farooque et al. 2020; Jenson, 2003).

In brief, this study will explore the effect of corporate governance on financial innovation and on bank performance. Study will also examine the mediating effect of financial innovation on bank performance and moderating role of ownership structure on the link between corporate governance and financial innovation, financial innovation and bank performance and corporate governance and bank performance of the chosen banks of developing countries.

The aims of the study are;

* To examine and study the specific attributes of corporate governance.
* To study the impact of corporate governance on performance of banks
* To study and examine the specific proxies of financial innovation and its impact of banks performance
* To study and examine the role of innovation on bank’s performance.
* To examine the mediating role of financial innovation in the link between corporate governance and bank’s performance.
* To analyze the moderating role of ownership structure in the link between corporate governance and financial innovation, between corporate governance and bank’s performance and between financial innovation and bank performance.

**“1.5 Significance of the study”**

This study will be a unique study which will investigate the direct link of corporate governance with bank performance and indirect link of corporate governance with bank performance having mediating effect of financial innovation. Whereas, on the other hand, moderating role of ownership structure on these links will also be examined in one research model by selecting Islamic and conventional banks of developing countries and it will also add novelty in the proposed research. The outcomes of the study will facilitate decision makers and bank authorities to adopt such corporate governance mechanism that will enhance bank’s performance through financial innovation and ownership structure. Research may help to understand how different types of ownership structure, such as state-owned, family-owned, foreign-owned or widely-held, affect the governance practices and innovation strategies of banks in emerging markets, and how these in turn affect their performance and efficiency. The study will further provide insights into the optimal ownership structure for banks in different contexts and countries, that influence the relationship between corporate governance, financial innovation and bank performance. Research may contribute to the literature on corporate governance, financial innovation and bank performance by testing and extending existing theories and frameworks, such as agency theory, stewardship theory and resource-based view.

Banks are required to be innovative and create new and adopt existing successful financial products for their survival and progress. This study will help governing body to initiate innovation culture in banks for developing new products and services that will meet the existing and future demands of customers as per market needs and will help banks to retain existing and attract new customers.

Moreover, research may have implications for various sustainable development goals, such as;

* to identify how banks can improve their access to finance and financial inclusion for the poor and marginalized groups, and how they can support poverty reduction and social welfare programs through their governance and innovation activities.
* to assess how banks can foster inclusive and sustainable economic growth and employment opportunities through their governance and innovation activities, and how they can cope with the challenges and opportunities of digitalization, globalization and diversification.
* to evaluate how banks can promote innovation and infrastructure development through their governance and innovation activities, and how they can leverage new technologies, products and services to enhance their competitiveness and resilience.
* to examine how banks can reduce inequalities within and among countries through their governance and innovation activities, and how they can ensure fair and transparent distribution of benefits and risks among their stakeholders.

Finally, this research will provide evidence based insights and recommendations for improving governance practices and innovation strategies of banks and to identify and evaluate the opportunities and challenges of new technologies, products and services for banks in order to develop novel financial instruments that will impact their performance.

**Chapter 2. Review of Literature**

**2.1 Corporate Governance**

Charreaux (1997, p. 421) explains Corporate governance as “the set of mechanism that define powers and influence decisions of the chief executive” and therefore includes corporate boards, shareholders, and top management teams. The Securities Commission Malaysia has described corporate governance (CG) as “the process and structure used to guide and manage the business and affairs of the company towards promoting business success and corporate responsibility with the ultimate goal of realising long-term shareholder value while considering the interest of other stakeholders” (MCCG, 2017). Li et al. (2020) has borrowed the definition of corporate governance from Monks & Minow, 2012 which explains that there are 3 primary forces that influence the direction and conduct of a corporation are shareholders, directors, and executives.

Shleifer and Vishny explains corporate governance that“Corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment. Corporate governance deals with the agency problem: the separation of management and finance, the fundamental question of corporate governance is how to assure financiers that they get a return on their financial investment”. The owners (principal) and managers (agent) are two main pillars of corporate governance and relationship between both drives corporate governance of the firm. This relationship has clear domains for principal and agent for ownership and control as defined by agency theory which holds that owners or principals of the company are shareholders who engage agents-executive and managers and delegate authority to run the business on behalf of the principal.

In literature various proxies are used for the determinants of corporate governance and its measurement. Li et al. (2020) has examined corporate governance characteristics and grouped into four main clusters such as top management characteristics, board characteristics, ownership structure and other constructs to measure corporate governance. Tran (2020) measured corporate governance by taking board size, board remuneration and CEO duality as proxy. Further, Ma’aji (2021) explored the impact of good corporate governance practices on bank performance by taking corporate governance attributes such as board size, board members working experience, board member’s educational level and board committees. Bhatia, M., & Gulati, R. (2021) investigated the effect of various corporate governance such as board size, women directors on board, CEO duality and outside directors on bank performance. Nawaz et al. (2019) measured the influence of corporate governance on organizational performance through board independence, board diversity, board size and board meetings. Whereas, Busru, S. A., & Shanmugasundaram, G. (2017) measured corporate governance in terms of board size, board independence, family ownership and foreign and institutional ownership.

Board size reflects the total number of directors on the board (Ma’aji, et.al 2021; Habtoor, O. S. 2021) and it is measured through the natural log of total of directors on the board (Gerged 2021; Rashid, A. 2018; Sheikh, N. A., & Kareem, S. 2015). The size of board members predicts performance of the firms (Ma’aji, et.al 2021) as big board provide CEOs with high-quality recommendations and helps in improving performance. Further, a large board also has a diversity of talents, proficiency, and experience to advise the CEO on investment and business improvement (Eisenberg, Sundgren, & Wells, 1998) and also helps companies to benefit from diversified resources and information. Moreover, board size affects monitoring and transparency (Harun et al. 2020). Baysinger, B.D. and Butler, H.N. (1985) and Yermack, D. (1996) applied board size as corporate governance measure to measure the effect of board size on performance and valuation of firms.

Board independence represents the existence of those board members in the board who are not the part of primary stakeholders of the company (Mansoor et al. 2020). Moreover, according to agency theory independent directors can effectively supervise a board and in contrast, resource dependency theory also states that outside professional independent directors have better ties with external resources and will eventually increase firm performance ( Mansoor et al. 2020). In addition, agency theory postulates that a board with a high proportion of independent directors improves performance and advantageous for the firms (Nawaz et al. 2019). Board independence is required to **increase the quality of board decisions**and**increase corporate performance** by reducing conflicts of interest and enhancing accountability. **Fama and Jensen (1983),** who suggested separating decision management and decision control as a means of reducing agency issues in businesses. They made the case that independent directors can effectively supervise and oversee managers, increasing the value of the company. Board independence is the percentage of independent directors or non-executive members on the board (Chijoke-Mgbame et al. 2020; Mohamed, 2013).

Board gender diversity has attracted visible attention from academics and policymakers during recent few years (Arnaboldi et al., 2018). Author further revealed that improvement in financial performance is anticipated when more gender diverse BOD exists as his study conducted on Islamic banks of Malaysia and Indonesia. Unlike European countries, representation of females in corporate boards of Asian countries appears limited due to local traditions and cultural differences (Jabari, H. N., & Muhamad, R. 2020). However, it is still to be explored weather board diversity increases firm performance. In several empirical and theoretical studies, mixed findings regarding association between gender diversity and financial performance are revealed (Bhatia, M., & Gulati, R. 2021). Zelechowski and Bilimoria (2004) and Bart and McQueen (2013) explored that female directors perform their duties with more dedication and commitment. Further, they document that female directors have efficient decision making and efficient managerial skills as compare to the male directors. **Carter et al. (2003),** analyzed the association between board gender diversity and firm value in a sample of Fortune 1000 firms and revealed that firms with more women directors in the board had greater Tobin’s Q ratios, a measure of market valuation, as compare to the firms with lesser or no women directors.

CEO duality refers that a person holds both the Chief Executive Officer’s position and board’s chairman position at the same time. The relationship between duality of CEO and firm performance remains a debating issue in academia and the relationship is measured under both theoretical perspective of agency theory and stewardship theory ( Duru, 2016; Naseem, 2020; Bhatia, M., & Gulati, R. 2021) and argue that board should be separate from management under agency theory for effective monitoring of management but on the other hand, according to stewardship theory by assigning both roles to a single person leads to better firm performance. Rechner & Dalton (1989) studied the link between duality of CEO and performance of firm and showed that CEO duality may reduce the ROA (return on assets) and ROE (return on equity) as compared to the firms without CEO duality.

**2.1.1 *Theoretical Perspective of Corporate Governance***

The theoretical framework is crucial for research because it offers a context for understanding the relationship between two or more constructs. Khatib et al. (2022), has carried out a thorough analysis of the literature on Malaysia's corporate governance evolution and found that agency theory is the majority of the researchers have employed agency theory as theoretical perspective in their studies followed by resourced based theory and stewardship theory, which highlights the significance of theoretical view point in describing governance function in the organizations. Li et al. (2020) has also revealed the same findings that agency theory and resource based theory are most frequently applied theories in the body of existing literature on corporate governance.

Thus, agency theory is most prevalent theoretical perspective in corporate governance and connected with the ownership and control (Warrad, L., & Khaddam, L., 2020). Agency theory states that a corporation with superior governance should perform better and be valued higher due to lower agency costs.

Further, Eisenhardt, K. M. (1989) reported that agency theory addresses two main issues that arise is agency relationship; agency problem and risk sharing. Agency problem arises when the principle and agent have divergent interests or desires and when the principal finds it hard or costly to verify the agent’s actions which prevent the principal to confirm that agent is acted suitably. The another issue is the risk-sharing that emerges when the principal and agent have divergent perspectives on risk. The point of concern is that due to varying risk preferences, the principal and the agent may prefer different behaviors. Fanta, A. B. (2013) has also addressed the agency dilemma that it arises when agents take decisions which are not beneficial for the principal or when they take steps for their self-interest at the cost of shareholder interest.

Resource dependence theory describes that the board of directors serves as a competent body for an organization's sustainability. The board of directors gives the board significant resources, contributing their knowledge, skills, and expertise that they have gained from their training and professional experience as a result useful for the board's discussion of topics and decision-making (Almutairi and Quttainah, 2017; Farag et al., 2018). Boards are regarded under resource-dependency theory as a source of social and professional networks that might have an impact on corporate settings (Almutairi and Quttainah, 2020).

Stewardship theory describes the joint leadership structure at the board level may lower information cost, increase stability and improve organizational effectiveness besides effectiveness of management leadership. The stewardship theory sees directors as stewards who can enhance business performance. (Almutairi and Quttainah, 2020). It highlights an important feature of the board regarding CEO duality (Aslam, E., & Haron, R., 2021). Muth, M. M., & Donaldson, L. (1998) disclosed in his study regarding Stewardship Theory and Board Structure that stewardship theory is in contrast to agency theory with respect to board independence structure and treated managers as stewards with goals and motivations that go beyond personal gain.

To sum up, agency theory which is leading theory in the study of corporate governance indicated that perfect governance is a blend of methods and designs that supports the interest of all stakeholders and it is complemented with resource dependency theory which arranges resources by the board directors for the board for decision making. Stewardship theory identifies the structures and methods which are required to push all related parties to join hands towards a joint goal.

**2.1.2 Empirical Perspective of Corporate Governance**

Khatib et al. (2021) investigated the effect of corporate governance on performance of firms. Furthermore, Khatib et al. (2022) revealed that existing work has primarily focused on non-financial datasets, and very few empirical investigations on a single business, including the financial sector, have been conducted.

Before and during the era of world financial and banking crisis (2007–2008), a large number of studies have been done to improve the understanding of bank governance and to examine the effect of key element of corporate governance on the bank performance of both conventional and Islamic banks. Moreover, the majority of the extant research seeks evidence mostly from wealthy nations. Therefore, there is still opportunity for evidence from developing nations to contribute to the literature on the efficiency of corporate governance procedures in the banking industry (Ma’aji, 2021). Nguyen, T. L. A., ; Vo, X. V. (2020) explores the influence of corporate governance on the efficiency of banks of ASEAN countries between 2007 and 2014. Chazi et al. (2018) determine the relationship between the relative performance and risk-taking behavior of Islamic and non-Islamic (conventional) banks in the GCC region during the global financial crisis, and the corporate governance characteristics of the sample banks.

**2.2 Financial Innovation**

***2.2.1 Innovation***

Innovation is defined as “the introduction of new things, ideas or ways of doing something” (Oxford learners dictionary), “to bring in novelties or make changes” (Concise Oxford Dictionary: 1954). Schumpeter, in 1934 defined innovation, or development, as “new combinations of new or existing knowledge, resources, equipment, and other factors”. He highlighted that innovation required to be treated different from invention. Peter Drucker (1985) defines innovation as: “Innovation is the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for a different business or a different service”. According to the Manual (OECD, 2005, p.55), innovation is either the “implementation of a new significantly improved product (goods or services) or process, or a new marketing method, or a new organizational method in business practices, local workplace organization or external relations.”

***2.2.2 Financial Innovation***

Financial innovation is essentially an organizational and product innovation that induced risk and cost reduction for banks and service enhancement for the financial sector as a whole (ECB 2003). According to Tufano (2003) “financial innovation is the act of creating and then popularizing new financial instruments as well as new financial technologies, institutions and markets”. Financial innovation is an act of producing and promoting new financial instruments by using financial technology facilities which create a positive impact on financial markets and financial organizations. Financial innovation fills the gaps exist in financial sector such as cutting marketing, transaction and research cost, controlling agency problems and information asymmetries, respond to regulation and taxation changes, completion of incomplete markets and connecting to globalization risks and technological shocks.

***2.2.3 Financial Innovation Theories***

Silber in 1983 presented advanced constraint-induced financial innovation theory. According to him the key motive behind financial innovation is profit maximization of financial firms. The leadership style and organizational management are key ingredients behind realization of profits besides other external factors and these restraints restrict the stability and efficiency of financial institutions to achieve their targets of earning profits (Mugane & Ondigo, 2016). The constraint-induced financial innovation theory is pertinent to the current study as CEO who is a part of organizational management, look for the innovation as a means to attain goal of profit maximization. Transactional cost innovation theory mainly advocated by Hicks and Niehans (1983) also relevant to this study as the theory elaborates the relationship between the reduction in transaction cost and technological advancement. Theory further revealed that the respond to progression in technology, which results in the reduction in transaction cost, is the vital factor in financial innovation. Juhakam (2003) defines the theory of cost reduction as a driver of financial innovation. Regulation innovation theory presented by Scylla (1982) holds that any change introduced by regulators in the financial system is considered as financial innovation and in the presence of strict regulatory control, room for further financial innovation is quite difficult. Financial control by regulators is disruptive force of financial innovation and rules and regulations in this regard is considered as the guidelines of financial reforms and innovation.

***2.2.4 Financial Innovation proxies***

In literature, proxies used to measure financial innovation are; Technology Gap Ratio which is “the gap between individual and global (or meta) cost frontier reflects technology gap or relative overall innovation” (Fontin & Lin, 2019), Financial R&D Intensity-Cost measured through Banking industry’s business enterprise research and development expenditure scaled by banking sector’s total Operating Cost in each country each year (Beck et al., 2016), Research & Development Expenditure - Bank wise (Chen & Pend, 2019) which provides estimates of overall innovation to gain a broader perspective on its potential effects, Financial Patents which is measured by number count of patents (Chen & Pend, 2019), Intention Level which reflects the financial news concerning fintech to predict the intention of banks to adopt financial innovation services (Chen & Pend, 2019), Domestic Credit to the Private Sector (DCB) which refers to the “ratio of the number of credit facilities to the private sector for investment in the form of securities, loan, and other accounts receivable” (Qamruzzaman & Jianguo, 2017), Broad-to-Narrow Money (M2/M1) which Measures the demand for real cash balance as well as interest and income elasticity of money demand as a percentage of GDP (Qamruzzaman & Jianguo, 2017) and Off-Balance-Sheet Items/Total Assets which is measured through the total value of off-balance-sheet items divided by total assets for all the individual banks and the measure is at bank level for bank-level analysis (Beck et al., 2016; Lee et al,. 2020).

The proxies of financial innovation measures the financial innovation in developed countries where banks exercise these determinants to reflect financial innovation (Fontin & Lin, 2019; Chen & Pend, 2019; Beck et al., 2016) and on the other hand some authors use proxies on macro level of economy or industry to measure financial innovation ( Qamruzzaman & Jianguo, 2017). Whereas, Arthur, K. N. A. (2017) explored that automated teller machines (ATMs) is considered as major and specific financial innovation (Barman et. Al 2022; Arthur, K. N. A. 2017) widely used by financial institutions for its two main functionalities such as to dispense cash from account of depositors and transfer of funds from one account to another account within and between financial institutions. The ATM, which is one of the process innovations in payment system technologies with focus on reducing transaction expenses (Chipeta, C., & Muthinja, M. M. 2018; Arthur, K. N. A. 2017; Tufano, P. 2003), is selected as proxy to measure financial innovation as significant innovation in financial service industry. Further, Nazaritehrani, A., & Mashali, B. (2020) has studied automated teller machines (ATM’s) as innovative channel and its impact on development of E-Banking in developing countries. Akhisar et al (2015) measured the impact of ratio of ATM’s to the number of branches on the profitability of bank of developing and developed countries and found the impact highly significant.

***2.2.5 Mediating Role of Financial Innovation***

Innovation has also considered as mediator in relationships that effect financial performance. Oláh, J., et al (2021) proposed innovation as a mediating variable, improving a positive correlation between inter-organizational trust and financial performance. R.Sari et al (2020) measured the mediating effect of process innovation on the relationship between environmental management accounting and organizational performance. Hu, T. and Xie, C. (2016) revealed that Innovation plays a mediating role in the relationship between competition and risk-taking in Chinese banking industry.

***2.2.6 Corporate Governance and Financial Innovation***

Several studies explain the relationship between corporate governance and financial innovation regarding firm’s willingness to involve in financial innovation (Wang, L.-H., & Cao, X.-Y. 2022). For instance, the high shareholding ratio of directors accelerates investment in financial innovation (Chi 2017). Further, the more the independent directors are in board, higher the influence on innovation activates they have(Balsmeier et al. 2017).

***2.2.7 Financial Innovation and Bank’s Performance***

Studies have concluded that financial innovation and the performance of banks has positive correlation with each other (Wang, L.-H., & Cao, X.-Y. 2022; El-Chaarani, 2018). Shanmugam, K. R., & Nigam, R. (2019) has studied the effect of technology such as ATM on the financial performance of Indian commercial banks and revealed a positive impact of technology on the performance of banks. Ardizzi et al.(2019) has discovered the positive link between innovation and cost efficiency in the banking industry of Italy and found that IT innovation is useful in improving cost efficiency which drives the change in using banking service from traditional payment channels to electronic means of banking service including ATM.

**2.3 Ownership Structure**

The ownership structure is one of the critical factor which governs the wealth of shareholders and performance of the firms (Al Farooque et al. 2020; Jenson, 2003). Academic researchers, regulatory bodies and market players show their considerable interest on the link between ownership structure and firm performance (Habtoor, O. S.,2021). Moreover, the effective ownership structure restricts the individual power to dominate the decision making of the firm’s activities as all the shareholders have the right to participate in the decision making according to their ownership which impact the firm performance (Al Farooque et al. 2020; Jenson, 2003). Further, according to the agency theory, type and size of ownership structure may considerably affect agency conflicts and onward firm performance (Habtoor, O. S.,2021).

Haniffa and Hudaib (2006) revealed that several governance mechanisms for ownership structures are introduced in the organizations to control and manage agency conflict and agency costs. These ownership structures are comprised of executive ownership, non-executive ownership, family ownership, foreign ownership, institutional ownership, CEO ownership, independent board member’s ownership and chairman ownership. Shawtari, F. A. M. (2018) found that numerous ownership types can have different effect on the performance of firms.

Ownership types are mainly divided into four different types (Thomsen and Pedersen, 2000) i.e. the government, institutions, family and foreign. Government ownership refers that where majority shares are held by government or government agency (Zeitun and Tian, 2007). Institution owner ship comes where company’s shares are owned by the other institutions which includes pension funds, insurance companies and commercial banks (Veronica and Bachtiar, 2005; Tarjo, 2008). Family ownership (Rebecca and Siregar, 2013) exists where ownership is in the hands of individuals and the ownership of the closed companies (above 5%) that are not financial institution, state or public company. On the other hand, foreign ownership refers to the ownership where shares are owned by multinational companies or the individual or entities that do not belong to the domestic country (Machmud and Djakman, 2008). Berger, A. N., (2005) reported various kinds of ownership structures like foreign ownership, domestic ownership and state ownership in banks as tools of governance and to decrease the managerial cost. Owusu-Antwi, G., et al. 2018 found that that ownership structure is a driver of banks performance.

Phung and Mishra (2016) studied foreign and domestic ownership of banks in diverse focus and context and revealed that foreign ownership positively influences the bank performance to the extent of certain level and after which it impacts negatively. Doan, A. T. et al. (2018) examined the link between ownership structure and cost efficiency of banks and discovered that with increased foreign ownership in governance, banks in developing countries are more efficient as compared to banks in developed countries. Minetti, R., et al. 2015, explored the link between ownership structure and innovation and concluded that ownership concentration may put negative effect on innovation as it curtails R&D efforts.

Further, Zhou, K. Z.Musacchio, 2017 and Lazzarini, 2014, stated that for innovation, extensive resources are required and government controls the access to financial resources in emerging economics therefore, state ownership allows the firms to invest in R&D activities.

Researchers have also studied the moderating role of ownership structure in context of corporate governance, innovation and performance separately. Wu, S., et. al (2022) studied the moderating role of ownership structures on the link between ESG performance and firm value and revealed that institutional and executive ownership moderate the link between ESG performance and firm value. Further, Song, J., et. al (2015) analyzed the moderating role of ownership structures and confirmed the moderation role of ownership structures in the relationship between market orientation and firm innovation performance.

**2.4 Bank Performance**

The consistent use of performance as a response variable in most management studies shows its significance as a vital evaluation criterion (Richard et al., 2009). Studies have applied several measures of bank performance in financial terms such as accounting performance measured through ROA and ROE, market performance which is measured through Tobin’s Q ratio and efficiency performance through cost efficiency, profit efficiency and technical efficiency. (Thaker, K., et al. 2022).

Venkatraman and Ramanujam (1986, p. 803) define firm financial performance as “...the use of simple outcome based financial indicators that are assumed to reflect the fulfilment of economic goals of the firm.”. Anthony & Govindarajan, 2004 explained that the selection of accounting performance measures is mainly because of their capacity to calculate economic value generated by particular firm resources, which considers them reasonable and appropriate proxies for a firm’s value creation. Accounting system provides various performance ratios for the measurement of financial performance.

Moreover, Bank performance is widely measured through their financial ratios. Return of Assets (ROA) is one the financial ratio commonly used to measure the bank performance (Chen, N. et al. 2018; Chalabi, F. 2020; Bhatia, M., & Gulati, R. 2021; Beccalli 2007; Adam, 2014) and is measured as “ratio of Net Income to Total Assets” and describes how efficient is a bank to utilize its assets for generation of income. Return on equity (ROE) is another most standard measure to assess the financial health of banks (Heffernan, S. A., & Fu, M. 2011; Beccalli, 2007; Adam, 2014; Akhisar,2015; You, Y.,2020). Return on Equity measures the rate of return on resources provided by shareholders. It gives the rate of return on resources provided by shareholders (Gupta, N., & Mahakud, J. 2020). A higher ration is beneficial for shareholders.

Second, Tobin’s Q is a market based performance indicator to measure firm value deployed by various researchers (Khamees, B. A., 2023; El Khoury, R., 2023; Wu, S., et al., 2022;) and widely accepted in research scholars as performance metric because it is considered to be comparable among industries and forward looking (Butt, M. N., 2021). The Tobin’s Q is a ratio of firm’s market value to its book value (Sakawa, H., & Watanabel, N. 2018) and used to measure the bank performance in relationship with board structures of Japanese banking industry (Sakawa, H., & Watanabel, N. 2018) female board directorship of French firms (Bennouri, M., et al. 2018) and governance (Khamees, B. A., 2023).

Third important indicator that will be applied to measure bank performance is economic efficiency, which gives important information to decision makers especially related to the bank governance (Thaker, K., et al. 2022; Phung, Q. T., et al. 2022). Bank efficiency is studied as response variable in relationship with corporate governance (Al-ahdal, 2020), financial innovation (Lee, C. C., et al. 2020) and ownership structure (Doan, A. T., et al. 2018). The efficiency will be calculated through intermediate approach by applying DEA.

**2.5 Control Variables**

To fulfil the purpose of this study, control / extraneous variable is introduced. Extraneous variables are also called nuisance variables or confounding variables that can obscure the link between the independent variable and dependent variable or highlight that there is a causal link between them when none exists (Flannelly et al., 2014). In order to keep the study variables as constant as possible, researchers try to control the extraneous variables by controlling the conditions of the experiment environment (Johnson & Christensen, 2014; Mugizi, W. (2022). Liquidity, Capitalization, Asset quality and Bank Size are used as bank specific control variables that have already been used in researches (Chalabi, F. 2020).

**“Chapter 3. Materials and methods”**

**“3.1 Proposed Place of Work and Facilities Available”**

It is a quantitative research and analysis will be done by taking secondary data and research will be conducted in Research Centre at Lahore Business School, The University of Lahore. The research center is equipped with all facilities required to work on the proposed study.

**3.1 Plan of Work and Methodology Adopted**

The quantitative research approach and positivist paradigm will be applied which is most likely used in finance studies to verify the theories by developing and testing hypothesis. The study will adopt a descriptive and analytical research design which involves gathering of data. The descriptive statistics explore and measure the link of cause and effect among variables (Cooper and Schindler, 2000). The study will aim to implement deductive approach rather than inductive.

Further, correlational research design will be adopted to tests the relationships between variables (Cresswell, 2008). The proposed research will study the effect of independent variable (corporate governance) on the dependent variable (bank performance) and also investigate the mediating effect of financial innovation along with moderation effect of ownership structure.

**3.3 Treatments to be Studied**

The proposed research will study the mediating effect of financial innovation on the relationship between corporate governance and banks performance. Further, study will also investigate moderating effect of ownership structure on the link between corporate governance and bank performance, link between corporate governance and financial innovation and link between financial innovation and bank performance.

**“3.4 Parameters / Variables to be Studies”**

Following variables will be studied in the research

|  |  |
| --- | --- |
| **Construct / Variable** | **Dimensions / proxies to be studied** |
| Corporate Governance | “Board Size”  “Board Independence”  “Board Gender Diversity”  “CEO Duality” |
| “Financial Innovation” | No of ATMs / No of Branches |
| Ownership Structure | Foreign Ownership  Domestic Ownership  Family Ownership  Government Ownership |
| Bank’s Performance | ROA and ROE  Tobin’s Q  Efficiency ( Intermediate Approach) |
| Control Variables | Liquidity  Capitalization  Asset Quality  Bank Size |

**Measures of Corporate Governance**

|  |  |  |
| --- | --- | --- |
| **Dimension** | **Measure** | **Authors** |
| “Board Size” | “Number of board of directors on company’s board.” | Baysinger, B.D. and Butler, H.N. (1985); Yermack, D. (1996); Eisenberg. (1998); Busru, S. A., & Shanmugasundaram, G. (2017); Jizi, M., & Nehme, R. (2018); Nawaz et al. (2019); Tran (2020); Soud, N. S., & Aypek, N. (2020); Chou, T. K., & Johennesse, L. A. (2021); Ma’aji (2021); Gulati, R. (2021); Thaker, (2022); Wang, L.-H., & Cao, X.-Y. (2022); |
| “Board Independence” | “The number of independent directors to the total number of board members”  “Number of independent board / Total number of board of directors × 100” | Mohamed, (2013); Busru, S. A., & Shanmugasundaram, G. (2017); Jizi, M., & Nehme, R. (2018); Nawaz et al. (2019); Mansoor et al. (2020); Chijoke-Mgbame et al. (2020); Gulati, R. (2021); Wang, L.-H., & Cao, X.-Y. (2022); |
| “Board Gender Diversity” | “The absolute number of female director in board” | **Carter et al. (2003);** Bart, C., McQueen, G., (2013); Arnaboldi et al., (2018); Nawaz et al. (2019); Jabari, H. N., & Muhamad, R. (2020); Gulati, R. (2021); Thaker, (2022); |
| “CEO Duality” | “Function of chairperson combined with CEO”.  0 if the CEO does not act as chair of the board of directors and 1 otherwise | Rechner & Dalton (1989); Duru, (2016); Jizi, M., & Nehme, R. (2018); Ben Zeineb, G., & Mensi, S. (2018); Naseem, (2020); Tran (2020); Chou, T. K., & Johennesse, L. A. (2021); Gulati, R. (2021); Bhatia, M., & Gulati, R. 2021; Thaker, (2022). |

**Measures of Financial Innovation**

|  |  |  |
| --- | --- | --- |
| **Dimension** | **Measure** | **Authors** |
| “Financial Innovation” | “Ratio of ATM’s to the number of branches” | Tufano, P. 2003; Akhisar et al (2015); Arthur, K. N. A. (2017); Barman et. Al 2022; Arthur, K. N. A. 2017; Chipeta, C., & Muthinja, M. M. 2018; Nazaritehrani, A., & Mashali, B. (2020); Shanmugam, K. R., & Nigam, R. (2019); |

**Measures of Ownership Structure**

|  |  |  |
| --- | --- | --- |
| **Dimension** | **Measure** | **Authors** |
| Foreign Ownership | If foreign ownership exists, then marked 0 otherwise 1. | Berger, A. N., (2005); Haniffa and Hudaib (2006); Phung and Mishra (2016); Busru, S. A., & Shanmugasundaram, G. (2017); A. T. et al. (2018); Santoso, A. L., & Santasyacitta, I. G. (2020); Amidjaya, P. G., & Widagdo, A. K. (2020); Oudat, M. S. (2021); Ali et al, (2022); |
| Domestic Ownership | If Domestic ownership exists, then marked 0 otherwise 1. | Haniffa and Hudaib (2006); Berger, A. N., (2005); Phung and Mishra (2016); Santoso, A. L., & Santasyacitta, I. G. (2020); Oudat, M. S. 2021; Ali et al, 2022 |
| Family Ownership | If Family ownership exists, then marked 0 otherwise 1. | Haniffa and Hudaib (2006); Rebecca and Siregar, (2013); Busru, S. A., & Shanmugasundaram, G. (2017); Santoso, A. L., & Santasyacitta, I. G. (2020); A. K. (2020) ; Oudat, M. S. 2021; Ali et al, (2022). |
| Government Ownership | If Government ownership exists, then marked 0 otherwise 1. | Haniffa and Hudaib (2006); Zeitun and Tian, 2007; Berger, A. N., (2005); Santoso, A. L., & Santasyacitta, I. G. (2020); Oudat, M. S. 2021; Ali et al, 2022; |

**Measures of Bank’s Performance**

|  |  |  |
| --- | --- | --- |
| **Dimension** | **Measure** | **Authors** |
| “Return on Assets” | “Calculated as a ratio of Net Income to Total Assets” | Anthony & Govindarajan, (2004); Beccalli (2007); Richard et al., (2009); Adam, (2014);Chen, N. et al. (2018); Chalabi, F. (2020); Bhatia, M., & Gulati, R. (2021) |
| “Return on Equity” | “ROE is calculated by profit after tax divided by total equity shares at the end of the year” | Anthony & Govindarajan, (2004); Beccalli, (2007); Heffernan, S. A., & Fu, M. (2011); Adam, (2014); Akhisar,(2015); You, Y.,(2020); Gupta, N., & Mahakud, J. (2020); Thaker, K., et al. (2022); |
| “Tobin’s Q  Efficiency”” | It can be calculated as “the ratio of the market capitalization plus total debt divided by total assets of the company”. | Anthony & Govindarajan, (2004); Sakawa, H., & Watanabel, N. (2018); Bennouri, M., et al. (2018); Butt, M. N., (2021); Thaker, K., et al. (2022); Wu, S., et al., (2022); El Khoury, R., (2023); Khamees, B. A., (2023); Khamees, B. A., (2023); |
| “Efficiency” | “Efficiency of the banks will be measured through DAE analysis by applying intermediate approach” | Anthony & Govindarajan, 2004; Doan, A. T., et al. 2018; Al-ahdal, 2020; Lee, C. C., et al. 2020; Thaker, K., et al. 2022; Thaker, K., et al. 2022; Phung, Q. T., et al. 2022. |

**Control Variables**

|  |  |  |
| --- | --- | --- |
| **Dimension** | **Measure** | **Authors** |
| “Capitalization” | “Ratio (CAR) of total equity / total assets” and high CAR reflects higher bank’s capitalization. | Amidu, M., & Wolfe, S. (2013); Chalabi, F. 2020. |
| “Liquidity” | “Ratio of total loans / total assets” and high ratio indicates lower liquidity. | Islam, M. A., & Rana, R. H. (2017); Chalabi, F. 2020. |
| “Asset quality” | “Ratio of non-performing loans / total assets” high ration shows lower asset quality. | Islam, M. A., & Rana, R. H. (2017); Chalabi, F. 2020. |
| “Bank Size” | “Total assets of bank and higher total assets indicates higher bank size.” | Amidu, M., & Wolfe, S. (2013); Chalabi, F. 2020. |

* 1. **Methods of Data Collection**

Secondary data will be used for the study. Data will be collected from data repositories of central banks of the respective countries, from Bloomberg data stream & Banscoupe through refinitive interface and from the audited annual reports from the respective banks of the same time frame. Proposed time horizon for collection of data is last 10 years i.e. from 2011 to 2021.

**3.7 Sampling Technique and Procedure**

Non-probability sampling method will be applied which involves non-random selection based on the availability of data for the proposed time frame of the banks belongs to selected developing countries.

**3.8 Sample Size**

Samples of Banks from 5 developing countries such as Pakistan, Bangladesh, Malaysia, Indonesia and UAE will be collected. Further, banks will be divided into conventional banks and Islamic banks. 5 banks from each country of each type will be selected as sample. Total data of 50 banks from 2011 to 2021 will be collected from each city for analysis.

**3.9 Research Model / Frame Work to be used**

Mediator (M)

**Financial Innovation**

* ATM’s / No of Branches

Predictor / IV

Outcome / DV

**Bank Performance**

* ROA / ROE
* Tobin’s Q
* Efficiency

**Corporate Governance**

* Board Size
* Board Independence
* Gender Diversity
* CEO Duality

**Ownership Structure**

* Foreign Ownership
* Domestic Ownership
* Family Ownership
* Government Ownership

**Control Variables**

* Liquidity
* Capitalization
* Bank Size
* Asset Quality

Moderator (MO)

**3.10 Hypotheses**

* Corporate Governance has a positive and significant impact on bank performance.
* Corporate Governance has a positive and significant impact on financial innovation.
* Financial Innovation has a positive and significant impact on bank performance.
* Financial Innovation has a mediating effect on the relationship between corporate governance and bank performance.
* Ownership structure moderates the relationship between corporate governance and financial innovation.
* Ownership structure moderates the relationship between corporate governance and bank performance.
* Ownership structure moderates the relationship between financial innovation and bank performance.

**3.11 Statistical Analysis / Test to be used**

Several statistical testes and models will be applied to analyze the data such as Generalized Method of Moment (GMM) model, Multiple Liner Regression Model, Unit Root Test, Two-way Panel Data Random Effect Model, Moderating Regression Analysis, Fixed Effects model. The Stata and Python will be used for data analysis.