

Risk Committee Characteristics and Risk Disclosure in Banks: Evidence from an Emerging Economy

Arshad Hasan (Lahore School of Economics, Pakistan)

Usman Sufi (Lahore School of Economics, Pakistan)

Khaled Hussainey (Portsmouth University, UK)

Abstract

Purpose: This study aims to investigate the impact of risk committee characteristics on the risk disclosure of banking institutions in an emerging economy, Pakistan.

Design/methodology/approach: The data are collected through a manual content analysis of 21 banks regulated by the State Bank of Pakistan over the period 2011-2020. The study utilizes the generalized least square (GLS) regression model as the method of analysis.

Findings: The study finds that risk committee size is positively associated with risk disclosure, which is in line with agency theory. However, risk committee independence and risk committee gender diversity are negatively associated with risk disclosure. This contradicts the theoretical perspective and is explained by the weak regulatory framework of Pakistan.

Research limitations/implications: This study was carried out in a single research setting, which limits the generalizability of its findings to other developed and emerging economies.

Practical implications: The results provide valuable insights for regulators by identifying the attributes that require regulatory focus to strengthen risk committees and enhance risk disclosure practices within the banking sector of Pakistan. The findings highlight the effectiveness of the risk committee size, call for fully independent risk committees and encourage greater representation of women in these committees.

Originality/value: This study contributes to the corporate governance literature by empirically examining the risk committee characteristics and their impact on the risk disclosure of banks

in an emerging economy. Moreover, this study contributes to theory by utilizing upper echelon theory in addition to agency theory as the motivation for the study.

Keywords: Corporate governance, Risk committee, Risk disclosure, Agency theory, Upper echelon theory, Emerging economy.

1. Introduction

The global financial crisis of 2008-09 was a major event in the history of global finance, as it led to financial institutions crashing like a house of cards (Grassa *et al.*, 2021). It is evident that the disastrous event was rooted in the excessive risk-taking activities promoted by banking institutions (Jones *et al.*, 2017). In addition, the failure to report these risks through a proper risk disclosure framework exacerbated the crisis and established the imperativeness of proper risk-related disclosures (Al-Hadi *et al.*, 2016). The global financial crisis halted the global economy and had devastating consequences beyond just the banks that failed (Grassa *et al.*, 2021; Nahar *et al.*, 2016). This led to the establishment of a myriad of risk reporting-related reforms, such as Basel II and International Financial Reporting Standards (IFRS) 7 (Tauringana and Chithambo, 2016; Jones *et al.*, 2018). In addition, the literature started seeking possible determinants of risk disclosure as demand for proper risk disclosure increased (Nahar *et al.*, 2016; Seta and Setyaningrum, 2017; Elamer *et al.*, 2019; Nahar *et al.*, 2020).

Al-maghzom *et al.* (2016) further add to the relevance of this claim by suggesting that the link between risk disclosure and its determinants lie in the roots of agency theory. In their review of agency theory, Fama and Jensen (1983) state that governance mechanisms reduce agency conflicts and promote transparency, which in turn enhance disclosure practices. Another theoretical perspective that links governance mechanisms with disclosure practices is upper echelon theory (Bryan and Mason, 2020; Khan *et al.*, 2022). Upper echelon theory states that different attributes of top management have an impact on organizational outcomes, such as disclosure. However, the inclusion of upper echelon theory has been relatively limited in the

literature regarding risk disclosure (Al-maghzom *et al.*, 2016; Bryan and Mason, 2020; Khan *et al.*, 2022). In addition to theoretical support, the notion that governance mechanisms, such as the characteristics of the board and its subcommittees, improve risk disclosure has also received sufficient support from empirical literature (Ntim *et al.*, 2013; Bufarwa *et al.*, 2020; Grassa *et al.*, 2021). However, Grassa *et al.* (2021) suggest that there is a dearth of studies focusing on investigating the determinants of risk disclosure in the context of emerging economies within the banking sector. This is startling, as the importance of risk disclosure practices specifically in the banking sector has been well established (Al-Hadi *et al.*, 2016; Al-maghzom *et al.*, 2016; Nahar *et al.*, 2016; Elamer *et al.*, 2019; Grassa *et al.*, 2021). In addition, there is limited focus on establishing a link between risk committee characteristics and risk disclosure within the overall corporate governance literature (Elamer *et al.*, 2019). This is even more concerning as the limited strand of literature that discusses the risk committee highlights its importance to risk disclosure as a crucial mechanism for risk oversight (Al-Hadi *et al.*, 2016; Jia *et al.*, 2019).

As such, Al-Hadi *et al.* (2016) and Jia *et al.* (2019) empirically investigated whether the existence of a separate risk committee and its respective characteristics improve risk disclosure in GCC countries and Australia, respectively. Both of these studies found similar results that a separate risk committee and a larger risk committee are associated with greater risk disclosure. In addition, risk committee independence was insignificant in both studies. Furthermore, Al-Hadi *et al.* (2016) posit that improving risk disclosure is beyond the scope of the audit committee alone, highlighting the need for a separate risk committee. However, Al-Hadi *et al.* (2016) state that their study is limited to GCC countries and is not generalizable to other countries, as the GCC provide a unique setting. Specifically, they cited a dominance of institutional setting and the region's weak regulatory framework as the contextual motivation of the study. In doing so, they identified the need for an extension of their results to other

emerging economies that have a unique setting such as the GCC (Al-Hadi *et al.*, 2016). In addition, one limitation of the analysis by Jia *et al.* (2019) is that they only focused on narrative disclosures while scoring their index. Furthermore, neither Al-Hadi *et al.* (2016) nor Jia *et al.* (2019) incorporated risk committee gender diversity into their analysis. In another comprehensive analysis of the London Stock Exchange, Malik *et al.* (2020) found that the risk committee has an imperative role in risk management, which consequently increases risk disclosures and firm performance. Nahar *et al.* (2020) also empirically found the existence of a risk management committee important to risk disclosure. However, neither of these studies addressed the specific risk committee characteristics and were only focused on its existence. Consequently, Nahar *et al.* (2020) suggested studying specific risk committee governance characteristics and their impact on risk disclosure, especially in developing economies.

Stemming from these concerns, this study seeks to fill this gap and address the aforementioned limitations by empirically investigating the impact of specific risk committee characteristics on risk disclosure in the banking sector of an emerging economy. In addition, we specifically cater to the limitations of the literature by including risk committee gender diversity as one of the characteristics investigated. This is especially important, as gender diversity in the board and other subcommittees has proven imperative to risk disclosure (Oradi and Izadi, 2019; Salem *et al.*, 2019; Bufarwa *et al.*, 2020). Interestingly, this study investigates whether these results also hold for risk committee gender diversity. Moreover, risk committee size and independence are also investigated in this study. Therefore, this study addresses the scarcity of research regarding these characteristics specific to the risk committee, despite their theoretical importance in the overall corporate governance literature. Furthermore, the study also addresses the limitation in the analysis of Jia *et al.* (2019) by considering both narrative and quantitative disclosures in the annual report as means for disclosure. Finally, following the

recommendation of Al-Hadi *et al.* (2016), this study is carried out in a unique emerging economy setting of Pakistan.

Pakistan provides us with the necessary contextual significance relevant to this study for the following reasons. First, Pakistan is an emerging economy, and research regarding risk disclosure and corporate governance mechanisms is scant in emerging economies (Elamer *et al.*, 2019; Elshandidy *et al.*, 2018). Consequently, Al-Hadi *et al.* (2016) advocate investigating the association between risk committee characteristics and risk disclosure from the perspective of emerging economies. Second, Al-Hadi *et al.* (2016) identify the need to investigate this association in emerging economies that have a unique setting in terms of their institutional dominance and weak enforcement of governance regulations, such as Pakistan. Accordingly, Saeed *et al.* (2022) question the genuineness of Pakistan's corporate governance mechanisms, as they deem Pakistan's regulatory framework to be relatively weaker than that of other emerging economies. In addition, Gull *et al.* (2022) suggest that risk disclosure in Pakistan is at a preliminary stage, which makes the investigation of its possible determinants interesting in the context of Pakistan. To the best of our knowledge, only Ashfaq *et al.* (2016) empirically studied risk disclosure of banking institutions in Pakistan. However, their study collected data spanning only seven years from 2008 to 2014 and did not focus on the risk committee. This study differs from Ashfaq *et al.* (2016) by focusing specifically on risk committee characteristics, being relatively recent and collecting data from the annual reports of 21 banks for a period of 10 years from 2011 to 2020.

The study employed a content analysis approach to assess the level of risk disclosure through the development of a risk disclosure index after reviewing relevant literature. The findings suggest that risk committee size has a positive impact on risk disclosure. This is consistent with the agency theory perspective. However, we find that risk committee

independence and risk committee gender diversity are negatively linked to risk disclosure. These results provide several implications for theory and practice.

Our study seeks to contribute to the relevant literature in four ways. First, as suggested by Nahar *et al.* (2020), Al-Hadi *et al.* (2016) and Jia *et al.* (2019), there is an increasing need to incorporate the specific characteristics of the risk committee as possible determinants of risk disclosure in literature. This study addresses that gap and incorporates individual risk committee characteristics into its analysis as possible determinants of risk disclosure while also catering to the limitations of existing studies in this context. Second, there is a scarcity of empirical literature on risk disclosure and its possible determinants relevant to banks, whereas its importance in banks has been identified (Grassa *et al.*, 2021). This study adds to the cause by studying the impact of different risk committee characteristics on risk disclosure within the banking sector. Third, by including Pakistan as the country of analysis, the study responds to the call of Elamer *et al.* (2019) and Nahar *et al.* (2020) that few studies in the past have focused on risk disclosure in emerging economies. Furthermore, it also responds to the suggestion of Al-Hadi *et al.* (2016) by studying risk disclosure in a setting with institutional dominance and a weak regulatory framework. Finally, most prior studies have explained the determinants of risk disclosure through agency theory (Elamer *et al.*, 2019; Grassa *et al.*, 2021; Nahar *et al.*, 2016). However, few studies have employed alternate explanations in this context. This study contributes to theory by utilizing upper echelon theory as an alternative perspective. The results of the study contribute to both theories, as they identify that in settings where the enforcement of governance regulations is questionable, both agency and upper echelon perspectives do not always hold. Therefore, our study helps to identify gaps in these theoretical perspectives and suggests extending these theories to make them more relevant to unique settings, such as Pakistan.

This section is followed by a review of the literature, methodology and data collection. The paper then moves on to its results, discussion and conclusion.

2. Literature Review and Hypothesis Development

2.1 Theoretical Framework

Risk taking in banks is inevitable; therefore, proper risk disclosure practices in banks are important (Grassa *et al.*, 2020). There are different perspectives discussed in literature that give risk disclosure its potency. One prominent theoretical perspective relevant to risk disclosure is agency theory (Jensen and Meckling, 1976). In addition, agency theory also contributes to discern the determinants of risk disclosure (Salem *et al.*, 2019; Grassa *et al.*, 2021). Below, we delve further into the specifics of agency theory in the context of risk disclosure and its determinants.

Fama and Jensen (1983) suggest that informational asymmetries and conflicts of interest between shareholders and managers form the basis of agency theory. Jensen and Meckling (1976) elaborate that this gives rise to investor uncertainties and agency costs, as managers tend to maximize their own interests rather than the interests of the firm. In this context, Ntim *et al.* (2013) link this to the infamous global financial crisis and posit that there has been a lack of shareholder trust in all firms since the event. Consequently, Grassa *et al.* (2021) mention that regulatory requirements for minimum disclosure by firms have become stringent. Therefore, it is imperative to discern ways in which all financial institutions can improve risk disclosure practices. Utilizing agency theory, many studies have suggested that better corporate governance structures lead to reduced informational asymmetry and better risk disclosure (Ntim *et al.*, 2013; Bufarwa *et al.*, 2020; Grassa *et al.*, 2021). Specific to banks, several studies have established this link (Grassa *et al.*, 2021; Nahar *et al.*, 2016). For instance, Leventis and Dimitropoulos (2012) contend that banks in the US that are better governed are less likely to engage in fraud or inaccurate reporting. In addition, there have also been

recommendations that the behavioral traits and attributes of top governance individuals have an impact on risk disclosure (Al-maghzom *et al.*, 2016). These suggestions are supported by a theoretical concept called upper echelon theory.

This theory is an important step in justifying certain determinants of risk disclosure that are not relevant to agency theory. For instance, Al-maghzom *et al.* (2016) suggest that demographic characteristics such as gender have little to do with agency theory, yet there have been many studies that investigate gender diversity on boards relevant to risk disclosure (Bufarwa *et al.*, 2020; Salem *et al.*, 2019). Therefore, it is imperative to include upper echelon theory in the discussion related to corporate governance and its impact on risk disclosure. Upper echelon theory supports the notion that a gender diverse board has a myriad of different behavioral attributes that improve risk disclosure. In addition, this theory has also been linked to other determinants of risk disclosure. For instance, recently Khan *et al.* (2022) linked upper echelon theory with the independence of top management teams. Specifically, Khan *et al.* (2022) point out that independent directors usually have interpersonal skills and a variety of experience and knowledge that improve information disclosure. Adding to these theoretical explanations, Nahar *et al.* (2020) point out the need for a system explicitly devoted to proper risk reporting.

While there have been studies that link corporate governance structures of the board and audit committees to risk disclosure, the focus on risk committees has been limited (Jia *et al.* 2019). To address this gap, we utilize the agency and upper echelon framework to investigate the relationship between risk committee characteristics and risk disclosure.

2.2 Risk Committee Characteristics and Risk Disclosure

Strengthening overall corporate governance structures is imperative for proper risk disclosure (Ntim *et al.*, 2013; Salem *et al.*, 2019). This link between corporate governance structures and risk disclosure has been advocated by both agency and upper echelon perspectives, as discussed

above (Fama and Jensen, 1983; Al-maghzom *et al.*, 2016; Bufarwa *et al.*, 2020; Grassa *et al.*, 2020; Khan *et al.*, 2022). Gull *et al.* (2022) contend that effective risk disclosure through an improvement in the overall corporate governance structure is essential because it can prevent extravagant risk-taking activities that are at the root of financial collapses (Al-Hadi *et al.*, 2016). In addition, firms have other motivations to voluntarily disclose risk more accurately (Hassanein and Elsayed, 2021). For instance, Elmarzouky *et al.* (2022) utilize the egocentric theory to advocate that a manager's ego is the reason that they disclose risk before external auditors do. In addition, Hassanein and Elsayed (2021) contend that firms are more likely to disclose risk if they are subjected to high litigation risk. Therefore, it is recommended that a separate risk committee be established for proper risk oversight, management and reporting (Azim and Nahar, 2022; Nahar and Azim, 2022).

Azim and Nahar (2022) argue that the establishment of a risk committee is imperative for risk identification as banks that have a risk committee are more likely to be efficient with risk reporting. As suggested by Nahar *et al.* (2016), the risk committee finds its function in managing risk and disclosing it to the stakeholders of a firm. In addition, Al-Hadi *et al.* (2016) identify that proper accountability of risk reporting is beyond the scope of the audit committee, as the audit committee is concentrated more on financial reporting. Therefore, it is essential to complement the audit committee with a risk committee for effective disclosure of risk (Buckby *et al.*, 2015).

Consequently, empirical literature has linked the existence of a risk committee to risk disclosure (Nahar *et al.*, 2020). For instance, Nahar *et al.* (2020) find a positive relationship between the existence of risk committees and risk disclosure. In addition, they suggest that risk committees can reduce the agency problem by increasing the flow of information and reducing uncertainty. Moreover, Al-Hadi *et al.* (2016) and Jia *et al.* (2019) also suggest that the existence of a risk committee is empirically associated with an improvement in risk disclosure. In

addition to the existence of a risk committee, the characteristics and expertise of its members are also equally imperative for its effectiveness (Azim and Nahar, 2022). However, Jia *et al.* (2019) suggest that there has been a dearth of studies that investigate specific risk committee characteristics with regard to risk disclosure. In the limited risk committee literature, characteristics such as risk committee size and independence are found to have both theoretical and empirical significance relevant to risk disclosure (Al-Hadi *et al.*, 2016; Jia, 2019; Jia *et al.*, 2019). Furthermore, Jia (2019) also links risk committee gender diversity to financial distress and suggests its imperativeness with regard to other risk-related activities. Despite this, research regarding specific risk committee characteristics is severely limited and presents us with an evident gap in literature (Al-Hadi *et al.*, 2016; Jia *et al.*, 2019; Nahar *et al.*, 2020; Azim and Nahar, 2022). Therefore, we respond to the call of Nahar *et al.* (2020), Jia *et al.* (2019) and Al-Hadi *et al.* (2016) in discerning these specific risk committee characteristics below.

2.2.1 Risk Committee Size and Risk Disclosure

In theory, there are varying perspectives with regard to risk committee size. However, from a strictly board's perspective, Raimo *et al.* (2022) utilize agency theory to suggest that a larger board improves risk disclosure. In synchronization with that, Grassa *et al.* (2021) extend this explanation to the board's subcommittees to advocate that committees larger in size have better monitoring capacity. They suggest that larger sized committees benefit from a diverse set of expertise and qualifications. Similarly, Al-Hadi *et al.* (2016) also identify this school of thought and corroborate the impact of risk committee size on risk disclosure through agency theory. Supporting this from empirical work, they find a positive relationship between risk committee size and risk disclosure. In addition, Jia *et al.* (2019) develop four dimensions of risk disclosure in terms of quantity, relevance, depth and width, finding a positive impact of risk committee size on all four dimensions. However, regarding board or committee size, there have been empirical results that are contrary to the expectations of agency theory. For instance, Wintoki

(2007) finds a negative link between board size and risk disclosure. In a possible explanation, Jensen (1993) contends that a larger board or committee size might impede its function as it breeds coordination problems and conflicts. Different schools of thought and theoretical perspectives make risk committee size an interesting variable. However, our general expectation is based on the agency theory perspective and most of the empirical literature, which suggests a positive impact of risk committee size on risk disclosure (Al-Hadi *et al.*, 2016; Grassa *et al.*, 2020; Jia, 2019). Thus, we hypothesize the following:

H1: There is a positive relationship between risk committee size and risk disclosure.

2.2.2 Risk Committee Independence and Risk Disclosure

The limited strand of literature that discusses risk committee characteristics also focuses on risk committee independence (Al-Hadi *et al.*, 2016; Jia *et al.*, 2019). From a theoretical perspective, Raimo *et al.* (2022) utilize agency theory to contend that independent directors are unbiased, have outstanding communication skills and have a better monitoring capacity. In addition, Salem *et al.* (2021) contend that independent directors are also imperative to constrain any earnings management or fraud practices. Accordingly, Al-Hadi *et al.* (2016) and Jia *et al.* (2019) use agency theory to suggest that the existence of independent directors on the committee or the board will improve risk disclosure. Furthermore, Al-Hadi *et al.* (2016) also suggest that independent directors on committees perform better, as they are unbiased and impartial. Moreover, Khan *et al.* (2022) utilize upper echelon theory to posit that independent directors in top management committees improve disclosure. Consistent with Raimo *et al.* (2022), they further explain that independent directors bring in interpersonal skills and a variety of experiences that help increase information disclosure. This is in synchronization with Azim and Nahar (2022) who posit that the effectiveness of the risk committee is directly associated with the expertise of its members. However, the result for a positive impact is not conclusive in empirical literature (Al-Hadi *et al.* 2016). For instance, Jia *et al.* (2019) find that risk

committee independence has an insignificant impact on risk disclosure. In addition, Al-Hadi *et al.* (2016) also find risk committee independence insignificant. In a possible explanation, Al-Hadi *et al.* (2016) suggest that independent directors on the risk committee may lack the institutional context that inside directors have. Furthermore, Al-Hadi *et al.* (2016) suggest that this is specific to the GCC because of its institutional dominance. However, we follow agency theory and upper echelon theory in forming our general expectation relevant to risk committee independence. Thus, we form the following hypothesis:

H2: There is a positive relationship between risk committee independence and risk disclosure.

2.2.3 Risk Committee Gender Diversity and Risk Disclosure

In terms of gender diversity, Jia *et al.* (2019) and Raimo *et al.* (2022) contend that including women on the board or risk committee helps monitor risk better. Accordingly, prior studies have provided evidence of women bringing a myriad of different perspectives regarding risk accountability and reporting (Jia, 2019; Raimo *et al.*, 2022). This diversity of perspectives helps put pressure on top management to further enhance disclosure (Bufarwa *et al.*, 2020; Raimo *et al.*, 2022). This is in line with upper echelon theory, as it posits that a diversity of behavioral traits is what makes gender diversity important (Al-maghzom *et al.* 2016). While Jia (2019) contends that a risk committee is imperative to the proper supervision of risk-related activities, the impact of gender diversity in risk committees has been relatively unexplored empirically. However, there has been empirical evidence suggesting that gender diversity in other committees and the overall board improves risk disclosure (Al-maghzom *et al.*, 2016; Raimo *et al.*, 2022).

For instance, Salem *et al.* (2019) and Raimo *et al.* (2022) both find empirical evidence of board gender diversity improving risk disclosure. Interestingly, there has also been empirical evidence of gender diversity being insignificant or even negatively impacting risk disclosure (Allini *et al.*, 2014; Nooret *et al.*, 2022). For instance, Noor *et al.* (2022) prove by an empirical

analysis of Pakistani firms that audit committee gender diversity is insignificant relevant to the efficient oversight of risk. Elaborating on this, Noor *et al.* (2022) contend that this is due to the minimal representation of women in the governing bodies of Pakistani firms. Specific to risk committee gender diversity, there has been empirical evidence of it reducing the likelihood of financial distress and improving risk accountability (Jia, 2019). Therefore, based on the empirical literature regarding the importance of including women on the board and its subcommittees, we can safely establish the imperativeness of risk committee gender diversity. Moreover, this notion is in line with upper echelon theory's suggestion that gender diversity in top management committees can improve disclosure. Therefore, we form our general expectation regarding risk committee gender diversity and the following hypothesis:

H3: There is a positive relationship between risk committee gender diversity and risk disclosure.

3. Methodology, Sample and Data Collection

3.1 Sample and Data

In our study, the sample is drawn from the population of banks operating in Pakistan, specifically those regulated by the State Bank of Pakistan. According to Jia *et al.* (2019), the proper accountability of risk disclosure by banks has become imperative, especially since the Global Financial Crisis of 2008-09. However, Barakat and Hussainey (2013) contend that studies examining the risk disclosure of banks are relatively scarce. Therefore, banks are exclusively included in the sample. In total, the number of banks that are regulated by the SBP as of 2022 is 33. However, 12 banks are excluded for the following reasons. Four foreign banks are excluded because their complete annual reports are not accessible and they were not listed on the Pakistan Stock Exchange. In addition, four specialized banks are also excluded due to their nonlisting status and unique regulatory requirements. Finally, four further listed banks are

excluded because of the lack of available data. Our final sample includes a total of 21 banks, out of which 19 are conventional banks and 2 are Islamic banks. The data are collected through the annual reports of each bank, which are downloaded from each bank's respective websites. The data are collected over the period of 2011-2020. As established above, the demand for proper risk disclosure by banks and proper accountability measures exponentially increased after the global financial crisis (Nahar *et al.*, 2016; Tauringana and Chithambo, 2016; Nahar *et al.*, 2020). Therefore, the chosen timeframe of our data is suitable as it constitutes the beginning of the post-global financial crisis period as the aftermath of the crisis lasted until the end of 2010 (Shahrokhi, 2011; Elbannan and Elbannan, 2015; Mehdi *et al.*, 2017). Secondly, at the time of data collection, the latest publicly available data were until 2020. Consequently, our final sample consists of 210 annual reports from 21 banks over the course of 10 years from 2011-2020.

3.2 Development of a Risk Disclosure Index

To score our dependent variable, a risk disclosure index is developed (Al-maghzom *et al.*, 2016; Grassa *et al.*, 2020, 2021). Following Grassa *et al.* (2021), we construct this index in multiple steps. In step one, we follow Salem *et al.* (2021) and perform a comprehensive analysis of literature. All studies consulted in the development of this index are studies that analysed the risk disclosure of banks (Al-maghzom *et al.*, 2016; Grassa *et al.*, 2020, 2021). As suggested by Salem *et al.* (2021), we identify the common items included in prior literature to ensure that our checklist of items is consistent with recent literature. This is especially important for establishing the validity of the instrument (Salem *et al.*, 2021). In the second step, we ensure that the said items are in compliance with regulatory requirements such as International Financial Reporting Standards 7 (IFRS 7) and Basel II. The Islamic Financial Services Board (IFSB) and the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) standards are also adopted for Islamic banks. After these two steps, we

have a collection of 68 items, 59 for conventional banks and 9 additional items relevant to Islamic banks. Finally, we amend the index following Elamer *et al.* (2019) based on the relevance of the items included to the country of analysis. Specifically, we follow Elamer *et al.* (2019) and Salem *et al.* (2021), and we read a random subsample of annual reports from our overall sample to identify the items that are typically disclosed by banks in Pakistan. The purpose of this is to make this index more relevant to the context of Pakistan. Consequently, the final index consists of 58 items for conventional banks and 9 additional items for Islamic banks. We divide the items relating to conventional banks into six categories of Capital Structure and Adequacy (CSA), Financial Risk (FR), Operational Risk (OR), Financial Instruments, Reserves and Segments (FIRS), Accounting and Presentation Policies (APP) and General Risk Information (GR). The category for Islamic Banks is separate. Finally, once our 67-item risk disclosure index is developed, we turn to the scoring approach.

3.3 Operationalization of the Dependent Variable

According to Krippendorff (1980), the content analysis approach for assessing disclosure is appropriate, as it is both repeatable and valid. As such, the content analysis approach to assess the level of risk disclosure is a widely popular approach and is used by many prior studies (Al-maghzom *et al.*, 2016; Grassa *et al.*, 2020, 2021). Al-maghzom *et al.* (2016) and Grassa *et al.* (2020) contend that one limitation of content analysis is that it is subjective. However, many researchers, such as Bowman (1984) and Beattie *et al.* (2004), posit that by reading textual content within annual reports, content analysis can reveal findings that other techniques cannot. Therefore, we use the content analysis approach to score our risk disclosure index, which forms the basis of our dependent variable. Another question that arises is the scoring technique to use (Grassa *et al.*, 2021).

For scoring purposes, we use the unweighted scoring technique (Grassa *et al.*, 2021). This is appropriate, as Al-maghzom *et al.* (2016) posit that if the analysis is not focusing on

any particular audience, it is appropriate to use an unweighted index. Accordingly, the presence of a disclosure item in the annual report represents a score of 1, and the complete absence of the disclosure item in the annual report represents a score of 0. The total score for a particular bank is summed for a particular year and is divided by the maximum possible score achievable for that particular bank (Amrin, 2019). The dependent variable is therefore a ratio. It is also important to note that the maximum score for Islamic banks is different from that of a conventional bank. Hence, using a ratio as our dependent variable is apt. The maximum possible score for Islamic Banks is 67, as we have 9 additional items in the index particular to Islamic Banks. The maximum possible score for conventional banks is 58. Below, we outline the ratio in its mathematical form:

$$RDI = \frac{\text{Total Score for a Bank}}{\text{Maximum Possible Score Relevant to that Bank}} \quad (1)$$

3.4 Reliability and Validity of the Index

According to Weber (1990), in a content analysis, reliability and validity of the coded instrument is imperative. Therefore, as suggested by Grassa *et al.* (2021), we ensure that the content analysis of the entire sample is performed by a single coder. As far as validity is concerned, Al-maghzom *et al.* (2016) suggest that an instrument is valid if it measures what it intends to measure. Accordingly, one other independent researcher reviewed the index for its validity in the Pakistani context. Upon modification of the index to incorporate the independent researchers' comments, a third additional experienced researcher reviewed the index. Eventually, it was unanimously decided that the index measures what it intends or claims to measure, rendering it valid. In terms of reliability, we follow Grassa *et al.* (2021) as they suggest that to ensure the reliability of the index, it is important that it is sourced from multiple sources. Accordingly, our index is sourced from multiple sources, including reporting standards and literature. For an instrument to be reliable, it is vital that it can replicate the same

results regardless of who coded it (Grassa *et al.*, 2021; Salem *et al.*, 2021). Therefore, to ensure the reliability of the instrument, we specifically follow Salem *et al.* (2021) and use multiple coders. Consequently, two independent researchers code a subsample of three randomly selected banks, and the differences are compared. Accordingly, we find that the differences between the scoring of both researchers are negligible, rendering the index reliable.

3.5 Independent Variables

Having discussed the dependent variable, its reliability, validity, source and operationalization in detail. Table 1 below summarizes the independent and control variables used in the study and their respective descriptions, operationalizations and sources.

[Insert Table 1 here]

3.6 Model Specification

To identify the appropriate regression model for our panel dataset, we run some preliminary statistical tests. First, we conduct a Lagrange multiplier test to understand whether our data are panel or pooled. The resultant p value is less than 0.05, and the null hypothesis is rejected. Therefore, we conclude that our data are panel data. Next, we conduct a Hausman test to determine whether the random effect model or the fixed effect model is appropriate. The results of the Hausman test favor a fixed effect model, as the p value is less than 0.05, and H₀ is rejected. However, upon conducting the Woolridge test for serial correlation, we conclude that there is a problem of first-order serial correlation with the data, as the p value is less than 0.05, and H₀ is rejected. Therefore, to better suit the problem of serial correlation in the dataset, our primary regression model is the generalized least square (GLS) random effect model, which is specified below:

$$RDI_{it} = \beta_0 + \beta_1RCS_{it} + \beta_2RCI_{it} + \beta_3RCGD_{it} + \beta_4BI_{it} + \beta_5BGD_{it} + \beta_6ACGD_{it} + \beta_7IOWN_{it} + \beta_8SIZE_{it} + \beta_9ROE_{it} + \beta_{10}LEV_{it} + \varepsilon_{it} \quad (2)$$

where RDI_{it} represents the risk disclosure index score of the i^{th} bank at time t , RCS is risk committee size, RCI refers to risk committee independence, $RCGD$ represents risk committee gender diversity, BI represents board independence, BGD refers to board gender diversity, $ACGD$ is audit committee gender diversity, $IOWN$ is institutional ownership, $SIZE$ represents bank size, ROE represents return on equity and LEV represents financial leverage. In addition, β represents the regression coefficient, and ε represents the error term.

4. Results and Discussion

4.1 Descriptive Statistics

The descriptive statistics of the study variables are presented in Table 2. The dependent variable, RDI, has a mean of 0.74 or 74%. The highest RDI score achieved by a bank is 93%, while the lowest is 48%, which indicates a large variation. Risk committee size has a mean of 3.44, which means, on average, risk committees in our sample have 3-4 members. The minimum size of the risk committee is 0, and the maximum is 6. RCI has a mean of 0.24 and has a large variation, with a minimum of 0 and a maximum of 1. Interestingly, the gender diversity variable, RCGD, averages 2%. Furthermore, RCGD has a minimum of 0% and a maximum of 33%.

[Insert Table 2 here]

For the descriptive statistics of the control variables, BI has a mean of 33%, with a minimum of 0% and a maximum of 83%. The statistics of BGD and ACGD are similar to those of RCGD. Furthermore, institutional ownership varies by 18% across the sample, with a mean

of 77%, a maximum of 100% and a minimum of 25%. ROE has a mean of 10.8, with a sizeable deviation of 34.1. Finally, LEV has a mean of 7.4, a minimum of -7.4 and a maximum of 26.1. In addition to these statistics, the results indicate no multicollinearity, as all the VIF values are below 10.

4.2 Correlation Analysis

Table 3 below shows the Pearson correlation matrix and the Spearman rank correlation matrix. As suggested by Al-maghzom et al. (2016), Pearson correlation matrix is utilized to measure the strength and significance of the linear relationship between any two variables. It is also used to detect multicollinearity between two variables and determine the overall soundness of the model (Elamer *et al.*, 2020; Ntim *et al.*, 2013). The Pearson's correlation shows that RCS is positive and highly significant with a coefficient of 0.278 with RDI. Moreover, according to the Pearson's correlation matrix, BGD and SIZE have a similar result, as they also have positive and significant correlations with RDI. RCI is the only variable that has a negative and significant relationship with RDI. The result of the Spearman's rank correlation matrix mirror that of Pearson's correlation matrix, barring a few exceptions.

[Insert Table 3 here]

Specifically, Spearman's rank correlation matrix is employed to show the monotonic relationship between any two variables only and is specifically used to produce nonparametric coefficients. Similar to Pearson's correlation matrix, it can also be used to determine multicollinearity and the soundness of the overall model (Elamer *et al.*, 2020). Spearman's correlation matrix produces similar results. One difference in Spearman's rank correlation matrix is that, in addition to RCI, BI is also negative and statistically significant, and ROE is positively significant. Therefore, the results of Pearson's and Spearman's rank correlation matrices largely mirror each other. Table 3 signifies that no major problems related to

nonnormality exist. In addition, neither matrix shows any significant signs of multicollinearity, as the coefficients between our independent variables are largely on the lower side. In addition, as mentioned above, the variance inflation factor values of all our variables are lower than 10 (refer to table 2). Therefore, before proceeding with the empirical model analysis, we can safely conclude that there are no significant nonnormality or multicollinearity problems in our data.

4.3 Regression Results

Table 4 below shows the regression results of our random effect model. First, the coefficient of RCS is positive and significant, indicating that banks with a larger risk committee promote risk disclosure. This is consistent with H1. This is justified according to an agency theory perspective. As previously discussed, agency theorists suggest that a larger risk committee helps reduce informational asymmetry (Al-Hadi *et al.*, 2016; Jia *et al.*, 2019). This result is also in line with empirical literature relevant to risk committee size (Al-Hadi *et al.*, 2016; Jia *et al.*, 2019). For instance, Jia *et al.* (2019) find that risk committee size has a positive impact on risk disclosure. In addition, Jia *et al.* (2019) analyse risk committee size in relation to four dimensions of risk disclosure and conclude that risk committee size is positively associated with all facets of risk disclosure. Furthermore, Jia *et al.* (2019) contend that their results are supported by agency and resource dependent theory. Similarly, Al-Hadi *et al.* (2016) also find a positive association of risk committee size with market risk disclosures. Al-Hadi *et al.* (2016) also support their results with agency theory and resource-based theory. Although there is a dearth of studies that empirically focus on risk committee size, there has been ample evidence that supports the notion of a larger board or audit committee relevant to risk disclosure (Ntim *et al.*, 2013; Darussamin *et al.*, 2018; Raimo *et al.*, 2022). For instance, Raimo *et al.* (2022) empirically prove that a larger board improves risk disclosure. In contrast, some studies have found an insignificant or negative impact of board or audit committee size on risk disclosure (Wintoki, 2007; Elzahar and Hussainey, 2012; Allini *et al.*, 2016). However, it is important to

note that none of these studies are specific to risk committee size. The limited strand of literature that focuses on risk committee size is in line with our results (Al-Hadi *et al.*, 2016; Jia *et al.*, 2019). Therefore, we can safely conclude that our results regarding risk committee size are in line with both empirical literature and agency theory..

[Insert Table 4 here]

Regarding RCI, its coefficient is negative and significant. Therefore, H2 is not supported. This is also contrary to both theoretical perspectives discussed in the study, namely, upper echelon theory and agency theory. According to the agency theory perspective, Fama and Jensen (1983) suggest that independent directors help improve the efficiency of the board, as they help reduce informational asymmetry and agency conflicts. Regarding the upper echelon theory's stance, Bryan and Mason (2020) suggest that independent directors usually have reputational concerns, which is why they ultimately help improve the disclosure of information. In addition, Khan *et al.* (2022) also add to that and state that they have interpersonal skills that help bring efficiency and transparency to the board. However, the few studies that have investigated RCI with respect to risk disclosure have found it to be statistically insignificant (Al-Hadi *et al.*, 2016; Jia *et al.*, 2019). Al-Hadi *et al.* (2016) explain their results regarding RCI with regard to the institutional setting of their sample. Elaborating this, Al-Hadi *et al.* (2016) point out that the institutional dominance in their sample hinders the functioning of the independent directors on the risk committee. Interestingly, our sample has, on average, 77% institutional ownership (refer to Table 2). Therefore, these descriptive statistics imply the extravagant role of institutional setting in our sample. Accordingly, our results are in tandem with the explanation of Al-Hadi *et al.* (2016) that a sample dominated by institutional setting significantly impedes the impact of RCI. A possible explanation relevant to Pakistan was also suggested by Saeed *et al.* (2022), who discuss a difference between procedural independence

and substantive independence. Although this explanation was relevant to the audit committee, it can be applied to independent directors in general, relevant to the Pakistani context. Saeed *et al.* (2022) further state that there are many legal regulatory requirements for a certain proportion of committee members to be independent. For that reason, companies place independent members in the board committees to fulfil that procedural requirement. Saeed *et al.* (2022) claim that this is merely a procedural independence and that it is even counterproductive. Moreover, they suggest that Pakistan is different from the developed world, as it has a weak regulatory framework and poor enforcement of regulations. Therefore, it is possible and likely that companies in Pakistan tweek the legal system by keeping independent directors as a mere formality and providing them with a stake in their company. Al-Hadrami *et al.* (2020) further suggest that this might encourage independent auditors to present more profitable results and hinder proper disclosure. Interestingly, this is in complete contrast with Raimo *et al.* (2022) and Salem *et al.* (2021)'s suggestions, which contend that independent directors are unbiased and are not engaged in earnings management. Consequently, Saeed *et al.* (2022) question the genuineness of independent directors in the context of Pakistan.

Specific to the presence of women on the risk committee, the coefficient of RCGD is negative and statistically significant. This gives us enough evidence that H3 is not supported. While Jia (2019) contends that risk committee gender diversity has rarely been examined empirically, our results contradict empirically proven notions regarding overall gender diversity as well (Salem *et al.*, 2021; Raimo *et al.*, 2022). More specific to the risk committee, empirical literature has only indirectly linked risk committee gender diversity with risk disclosure (Jia, 2019). Interestingly, the results of RCGD in our study contradict upper echelon theory (Al-maghzom *et al.*, 2016). As mentioned above, upper echelon theory states that the diversity of perspectives women bring helps improve risk disclosure (Al-maghzom *et al.*, 2016). However, one explanation of the different nature of our result is provided by Oyenike *et al.* (2016), who

suggest that gender diversity in the subcommittees may also be a formality. In addition, Noor *et al.* (2022) contend that minimal representation of women, especially in subcommittees, makes gender diversity insignificant or even negative relevant to disclosure. This minimal representation of women, especially in subcommittees, can be clearly seen in the descriptive statistics of our sample (refer to Table 2). Interestingly, this result is contrary to the positive and significant coefficient of board gender diversity. One possible explanation can be derived from the suggestion of Chijoke-Mgbame *et al.* (2020) that for female members on the board and subcommittees to effectively contribute, there must be at least 2 or more female members present on each. This is an apt explanation for the conflicting results of BGD and RCGD, considering our sample. In our sample, the representation of female members on the board in absolute terms is more than that of female members on the subcommittees, with the latter reaching a maximum of 1. To be specific, no bank in our sample has a representation of more than one female member in either of the board committees studied. In contrast, there have been banks that have had more than one female member on the overall board. Therefore, the explanations of Noor *et al.* (2022) and Chijoke-Mgbame *et al.* (2020) are in perfect synchronization with our results. In addition, Allini *et al.* (2014) also find a negative and statistically significant impact of gender diversity on disclosure practices. Consistent with our explanation, Allini *et al.* (2014) explain their results by stating that their sample is predominantly male dominated. They further elaborate that the impact of women decreases on disclosure and infact becomes counterproductive when they have minimal representation on the board or a committee.

Our results provide some valuable contributions to literature. First, this study fills a relatively unexplored gap by establishing an empirical link between risk committee characteristics and risk disclosure (Al-Hadi *et al.*, 2016). In addition, our results regarding risk committee size further validate agency theory's perspective about size, especially relevant to

the risk committee in a developing economy. Second, the results of our study further contribute by investigating risk committee independence and gender diversity. These characteristics are also scarcely researched in literature, despite their theoretical importance. Interestingly, our results regarding these variables contribute as they present contrasting perspectives to theory and offer implications for research, especially in Pakistan and other developing nations.

Elaborating this from a strictly academic standpoint, the study has implications for both agency theory and upper echelon theory. Specifically in a country with weak regulatory enforcement, such as Pakistan, our study provides evidence that agency and upper echelon perspectives do not always hold true. This is especially relevant to the results identified in the case of risk committee independence and gender diversity. Therefore, researchers are encouraged to further validate these theories with regard to risk committee characteristics and risk disclosure in the context of emerging economies with a unique setting. Furthermore, our results also have practical implications for regulators and policymakers in terms of ensuring that the inclusion of independent directors in a bank's risk committee is not a mere formality. In addition, our results also identify the need to reduce institutional dominance within the ownership structure of Pakistani banks as it hinders the proper functioning of independent directors. Adding to that, our results point out the minimal representation of women in the risk committee and the overall board. As such, the minimal representation of women makes a negligible difference in making the risk committee effective. Therefore, banks, regulators and policymakers in Pakistan are encouraged to ensure greater representation of women in the governance of a bank. Finally, as mentioned above, a bank's mismanagement of risk and its inadequate disclosure can have devastating consequences for the economy (Al-Hadi *et al.*, 2016; Jones *et al.*, 2018; Grassa *et al.*, 2021). In this regard, our results provide valuable evidence that the risk committees in Pakistani banks are not effectively performing their function. Accordingly, the results of the study also suggest possible reasons for the risk

committee's ineffectiveness in improving risk disclosure. Therefore, the results of the study can prove useful for policymakers and regulators in terms of ensuring proper disclosure of a bank's risk by increasing the effectiveness of a bank's risk committee.

In this regression, we also control for other corporate governance variables such as board independence, board gender diversity and audit committee gender diversity. Of these, BGD is positively significant, while BI and ACGD are insignificant. Our results regarding corporate governance-related control variables are supported empirically in the literature. For instance, studies such as Bugarwa *et al.* (2020) and Salem *et al.* (2019) find BGD to be positively associated with risk disclosure. In addition, many studies in the past have found independent members on the board to be insignificant with regard to voluntary disclosure (Abraham and Cox, 2007; Elzahar and Hussainey, 2012). Furthermore, institutional ownership, bank size, return on equity and financial leverage have also been used as controls. Bank size is positive and statistically significant, while IOWN, ROE and LEV are insignificant, which is in line with most of the empirical literature (Al-Hadi *et al.*, 2016).

4.4 Additional Analysis – Categorywise results

As an additional analysis, we performed a GLS random effect regression with respect to each of the 6 categories of the risk disclosure index. The category especially made for Islamic banks is excluded, as there are only two Islamic banks used in the study; therefore, we did not have enough observations for the model to be significant. The results are shown in Table 5. As far as RCS is concerned, its coefficient is only statistically significant in the operational risks category, which means that a larger risk committee only helps improve the disclosure of operational risks. In addition, RCI is also negative and highly significant only with regard to the operational risks category. This implies that the negative impact RCI is concentrated more on operational risks than any other type of risk. The negative coefficient of RCGD relevant to the capital structure and adequacy category implies that risk committee gender diversity

reduces the disclosure of capital structure and adequacy risks. In addition, the overall negative impact of RCGD on risk disclosure is solely due to the reduction in the disclosure of capital structure and adequacy risks. This analysis of risk committee characteristics with respect to different categories of risk becomes interesting when we incorporate control variables into the discussion.

[Insert Table 5 here]

For instance, all gender diversity variables are relevant to the capital structure and adequacy category. Specifically, board and risk committee gender diversity reduce capital structure and adequacy risks disclosure, while audit committee gender diversity enhances it. This implies that in regard to CSA risks, gender diversity in the audit committee is more effective for increased disclosure than in the risk committee. We also find that the disclosure of financial risks is improved by a higher percentage of institutional ownership. In addition, operational risks are enhanced by board gender diversity and board independence, whereas risk committee independence significantly reduces their disclosure. This is interesting, as it shows that independent directors on the risk committee are also less effective relative to independent directors on the overall board relevant to risk disclosure. The disclosure of financial instruments, reserves and segments is concerned, it is also enhanced by gender diversity in the audit committee and bank size. In addition, only institutional ownership is relevant to the accounting presentation and policies category. Finally, the general risks category is improved by board gender diversity and bank size. This analysis has implications for policymakers and banks in terms of prioritizing which category of risk is important to them in the overall disclosure of information and altering the composition of the board and its subcommittees accordingly. In addition, it also implies that the overall risk disclosure with relevance to the risk committee is concentrated in two categories, namely, capital structure and adequacy and

operational risks. This indicates that the risk committee is not as effective as the board in improving overall risk disclosure. Consequently, this has important implications for banks, regulators and policymakers to improve the effectiveness of the risk committee in the Pakistani context through proper monitoring.

4.5 Robustness Tests

As a first robustness check, following Salem *et al.* (2019) we perform a log transformation of the RDI score and rerun the GLS random effect regression. Following that, in our second robustness check, we perform another GLS random effect regression, this time replacing the dependent variable with a weighted RDI score. The weighted RDI score was prepared following a combination of Ntim *et al.* (2013) and Elamer *et al.* (2020). Finally, as a last robustness check we follow Ntim *et al.* (2013) and Nahar *et al.* (2016) and perform a two-stage least square regression (2SLS). Accordingly, we employ lagged values of endogenous variables, specifically relevant to the risk committee as instruments (Coles *et al.*, 2008; McKnight and Weir, 2009). We then compare the results of all three robustness checks to our primary model in Table 6.

[Insert Table 6 here]

Regarding the results of the first robustness check, our results in the primary model appear to be robust. RCS is positive and significant, while RCI and RCGD are negative and significant, matching the primary model.

In our GLS model with the weighted RDI score as our dependent variable, we notice slightly more deviations from the primary model. For instance, RCS and RCI both become insignificant, despite their coefficients following the same direction. Nevertheless, RCGD still appears to be robust, as it is negatively significant with the weighted RDI score. Finally, the results of the 2SLS model also mirror our primary analysis as all three variables follow the

same direction and our significant. Overall, the results of all three robustness checks provide evidence that our primary model is robust to alternate measurements and model specifications.

5. Conclusion

This paper seeks to identify the impact of specific risk committee governance characteristics on risk disclosure in Pakistani banks. The sample consists of 21 Pakistani banks regulated by the SBP and is analysed for a period of 10 years from 2011-2020. Data are collected from the annual reports of the banks present in the sample. A risk disclosure index is developed after reviewing past literature and is used to measure the level of risk disclosure. A manual content analysis approach is used to score the risk disclosure of the said banks. The findings reveal that banks that have a large risk committee tend to disclose more risk. However, risk committee independence and risk committee gender diversity are associated with a decrease in risk disclosure. This paper utilized two theoretical perspectives, namely, agency theory and upper echelon theory. The contributions of this paper to extant literature are as follows:

First, this paper is one of the few studies that answer the call of Nahar *et al.* (2020) and examine the impact of risk committees' individual characteristics on risk disclosure. While there has been an ample amount of literature relevant to risk disclosure discussing the impact of the board and audit committees' characteristics, the examination of risk committee specific characteristics has been scant (Al-Hadi *et al.*, 2016; Jia *et al.*, 2019). Therefore, this study addresses that gap in literature by focusing on risk committee characteristics. Second, this study makes a contribution by studying risk disclosure in the context of banks themselves. Elamer *et al.* (2019) suggests that studying risk disclosure practices in banks has become imperative, especially since the global financial crisis. They further suggest that studying risk disclosure from a banking perspective in an emerging economy has been rare in literature. Therefore, our third contribution stems directly from Elamer *et al.* (2019)'s suggestion, as we study risk

disclosure in an emerging economy, such as Pakistan. Furthermore, we also respond to Al-Hadi *et al.* (2016) by carrying this study out within the unique setting of Pakistan, which is characterized by institutional dominance and a weak regulatory framework. To the best of our knowledge, only Ashfaq *et al.* (2016) examined banks in Pakistan for risk disclosure. However, their study was limited to only seven years, whereas our study comprises 10 years worth of analysis and is more recent. Finally, this paper contributes to the upper echelon theory literature, as Al-maghzom *et al.* (2016) state that it has rarely been examined in the context of risk disclosure. We explain the inclusion of risk committee gender diversity in this study through upper echelon theory. In addition, we also link upper echelon theory with the notion that the presence of independent directors on risk committees improves risk disclosure (Bryan and Mason, 2020; Khan *et al.*, 2022). In doing so, we add to the relevance of the theory. To the best of our knowledge, Al-maghzom *et al.* (2016) is the only study that uses upper echelon theory in relation to risk disclosure.

This study provides practical implications, especially in the context of Pakistan. The results of two of our variables, risk committee independence and risk committee gender diversity, are contrary to the general expectations of the literature. This is explained by the unique setting and weak enforcement of the regulatory requirements in Pakistan. These requirements require banks to have independent directors on the board. In Pakistan, the inclusion of independent directors on the board, and hence its subcommittees, is a mere formality that questions the genuineness of the variable (Saeed *et al.*, 2022). Therefore, this study provides some important implications for regulatory bodies in Pakistan in terms of re-establishing the potency of these regulatory requirements. Another possible explanation identified is the institutional setting of our sample (Al-Hadi *et al.*, 2016). Al-Hadi *et al.* (2016) contend that a sample dominated by an institutional setting hinders the impact of independent directors on the risk committee. This is in complete synchronization with the results of the

study, as on average, 77% of our sample is owned by institutions. Therefore, one implication of our study for banks, regulators and policymakers is to reduce the dominance of institutions in the ownership structure of banks. In addition, our sample suggests minimal representation of women on the board and on the subcommittees. Not surprisingly, literature suggests that the representation of women in our sample is not enough for gender diversity to help significantly improve the committees' function and may even turn out counterproductive (Allini *et al.*, 2014; Chijoke-Mgbame *et al.*, 2020; Noor *et al.*, 2022). Accordingly, this study also has implications for banks to encourage greater representation of women on their subcommittees and for regulatory bodies to oversee this.

From a theoretical perspective, this study also has several implications for theory; specifically, upper echelon theory needs to be validated further in the context of settings such as that of Pakistan. This study, specifically, provides evidence for its validation only by the results relevant to board gender diversity, which is used as a control. However, the hypothesis relevant to independent directors on the risk committee is rejected. In addition, the result of the risk committee gender diversity variable also contradicts the expectation of the upper echelon theory. Therefore, further validations are needed, specifically in countries that have similar contexts to Pakistan, in terms of its weak regulatory enforcement, paired with institutional dominance and minimal representation of women. Second, in the context of Pakistan, agency theory is challenged by the results of risk committee independence, which has implications for research and agency theory in the context of Pakistan.

Although this research has made some important contributions, it does suffer from some limitations. First, the annual reports are coded manually. Therefore, this brings about subjectivity bias due to the subjective nature of manual coding. Second, this study was carried out in a single setting, Pakistan, which makes it specific to the Pakistani context. It is recommended that it be extended and compared to other emerging economies with a similar

setting. Third, this study is limited to data collection through banks' annual reports, whereas they are not the only medium banks disclose risk through.

However, this study provides a myriad of avenues for future research. First, this study should be extended to countries that have a similar setting in a cross-country examination. This would be interesting, as it would help identify whether countries that have weak regulatory enforcements and minimal representation of women achieve similar results. Second, future studies should incorporate other mediums of risk disclosure, such as the internet and earnings press releases, into their analysis (Davis and Tama-Sweet, 2012; Dumay and Hossain, 2019). Finally, future studies could incorporate additional dimensions of upper echelon theory in this study, such as tenure and education, to further validate it (Al-maghzom et al., 2016).

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TABLES

Table 1: Description and Operationalization of Variables

Variable	Description	Operationalization	Source
<u>Independent Variables</u>			
RCS	Risk Committee Size	Total number of members on the risk committee	Annual Reports

RCI	Risk Committee Independence	Number of independent members on the risk committee/Total members of the risk committee	Annual Reports
RCGD	Risk Committee Gender Diveristy	Number of female members on the risk committee/Total members of the risk committee	Annual Reports
<u>Control Variables</u>			
BI	Board Independence	Number of independent members on the board/Total members of the board	Annual Reports
BGD	BoardGender Diversity	Number of female members on the Board/Total members on the board	Annual Reports
ACGD	Audit Committee Gender Diversity	Number of female members on the audit committee/Total members of the audit committee	Annual Reports
IOWN	Institutional Ownership	Proportion of the overall shares held by institutions	Annual Reports
SIZE	Bank Size	Log of total revenue	Annual Reports
ROE	Return on Equity	Net income/Total equity	Annual Reports
LEV	Leverage	Total debt/Total equity	Annual Reports

Table 2: Descriptive statistics

Variables	Obs	Mean	Std. Dev	Min	Max	VIF
RDI	210	0.74	0.09	0.48	0.93	-
RCS	210	3.44	1.4	0	6	1.17
RCI	210	0.24	0.22	0	1	1.73
RCGD	210	0.02	0.08	0	0.33	1.37
BI	210	0.33	0.14	0	0.83	1.65
BGD	210	0.03	0.05	0	0.17	1.74
ACGD	210	0.02	0.08	0	0.33	1.50
IOWN	210	0.77	0.18	0.25	1	1.29

SIZE	210	10.2	0.61	7.04	11.2	1.37
ROE	210	10.8	34.1	-318	234	1.12
LEV	210	7.41	4.71	-14.9	26.1	1.21

Table 3: Pearson's and Spearman's Correlation Matrices

	RDI	RCS	RCI	RCGD	BI	BGD	ACGD	IOWN	SIZE	ROE	LEV
RDI	1	0.296***	-0.230***	-0.059	-0.158**	0.262***	0.106	-0.054	0.353***	0.156**	-0.093
RCS	0.278***	1	-0.029	-0.004	-0.010	0.033	0.103	-0.163**	0.286***	0.068	-0.068
RCI	-0.211***	0.214***	1	-0.003	0.407***	-0.112	0.090	0.075	-0.302***	-0.237***	-0.051
RCGD	-0.091	0.026	-0.020	1	-0.012	0.427***	0.341***	0.096	0.053	-0.095	-0.146**
BI	-0.111	0.055	0.517***	-0.014	1	0.147**	0.146**	0.386***	-0.051	-0.125*	0.163**
BGD	0.197***	-0.001	-0.101	0.439***	0.162**	1	0.445***	0.271***	0.276***	-0.023	0.028
ACGD	0.051	0.106	0.072	0.360***	0.100	0.458***	1	0.069	-0.095	-0.257***	-0.007
IOWN	-0.076	-0.066	0.095	0.112	0.321***	0.257***	0.093	1	0.113	-0.032	0.369***
SIZE	0.300***	0.187***	-0.200***	-0.055	-0.000	0.154**	-0.208***	0.020	1	0.633***	-0.111
ROE	0.051	0.022	-0.194***	-0.096	-0.063	-0.012	-0.115*	-0.053	0.277***	1	-0.152**
LEV	-0.064	-0.067	-0.097	-0.190***	0.121*	-0.061	-0.076	0.273***	-0.047	0.031	1
Lower-triangular cells report Pearson's correlation coefficients, upper-triangular cells are Spearman's rank correlation											
*** p<0.01, ** p<0.05, * p<0.1											

Table 4: GLS Regression Results

Variables	RDI	p-value	Standard Error
RCS	0.01**	0.04	0.01
RCI	-0.05*	0.10	0.03
RCGD	-0.15**	0.03	0.07
BI	0.05	0.26	0.05
BGD	0.27**	0.02	0.11
ACGD	0.06	0.36	0.07
IOWN	-0.03	0.5	0.04
SIZE	0.03***	0.01	0.01
ROE	0.01	0.93	0.01
LEV	-0.01	0.83	0.01
constant	0.44***	0	0.11
R ²	0.21		
Wald chi ²	31.4***		
N	210		
n	21		
T	10		

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

Table 5: Categorywise Regression Results

Variables	CSA	FR	OR	FIRS	APP	GR
RCS	-0.01 (0.01)	0.01 (0.01)	0.03*** (0.01)	-0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
RCI	0.01 (0.08)	0.01 (0.03)	-0.19*** (0.06)	-0.01 (0.04)	-0.01 (0.04)	-0.05 (0.07)
RCGD	-0.72*** (0.20)	-0.04 (0.06)	-0.07 (0.14)	-0.06 (0.10)	0.11 (0.1)	-0.23 (0.16)
BI	-0.01 (0.13)	-0.03 (0.04)	0.23*** (0.09)	0.07 (0.06)	0.02 (0.06)	-0.05 (0.1)
BGD	-1.03*** (0.33)	0.17 (0.11)	0.99*** (0.22)	-0.16 (0.16)	0.19 (0.16)	1.07*** (0.26)
ACGD	0.54*** (0.19)	-0.07 (0.06)	-0.15 (0.13)	0.22** (0.09)	0.13 (0.09)	0.07 (0.15)
IOWN	0.07 (0.11)	0.10** (0.04)	0.04 (0.1)	-0.01 (0.06)	-0.11** (0.06)	-0.06 (0.09)
SIZE	0.02 (0.03)	-0.01 (0.01)	0.05** (0.02)	0.05*** (0.02)	0.01 (0.01)	0.05** (0.02)
ROE	0.01* (0.01)	-0.01* (0.01)	-0.01 (0.01)	0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)
LEV	0.01 (0.01)	-0.01 (0.01)	0.01* (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Constant	0.51* (0.31)	0.91*** (0.11)	-0.08 (0.25)	0.27* (0.16)	0.9*** (0.15)	0.08 (0.25)
R ²	0.14	0.02	0.08	0.22	0.06	0.24
Wald chi ²	40.6***	15.8	69.2***	18.1**	11.1	39.9***
N	210	210	210	210	210	210
n	21	21	21	21	21	21
T	10	10	10	10	10	10

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

Table 6: Robustness Tests

Variable(s)	GLS with Log RDI	GLS with Weighted RDI	2SLS with RDI
RCS	0.01**	0.01	0.02***
RCI	-0.08*	-0.01	-0.09***
RCGD	-0.25***	-0.11*	-0.27***
BI	0.08	0.01	-0.03
BGD	0.38**	0.29***	0.41***
ACGD	0.07	0.08	0.04
IOWN	-0.04	-0.05	-0.03
SIZE	0.04**	0.05***	0.03**
ROE	0.01	0.01	-0.01
LEV	-0.01	-0.01	-0.01
constant	-0.7***	0.03	0.46***
R ²	0.22	0.36	0.26
Wald chi ²	33.1***	66.9***	73.1***
N	210	210	210
n	21	21	21
T	10	10	10

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

Appendix A: List of Sample Banks

PANEL A: Conventional Banks

1. Allied Bank Limited
2. Bank Alfalah
3. Askari Bank Ltd.
4. Standard Chartered Pakistan
5. Habib Bank Limited
6. JS Bank Limited
7. United Bank Limited
8. Bank AL Habib Limited
9. The Bank of Punjab
10. Habib Metropolitan Bank
11. Soneri Bank Limited
12. MCB Bank Limited
13. Summit Bank
14. Faysal Bank Limited
15. The Bank of Khyber
16. National Bank of Pakistan
17. Silkbank Limited
18. Samba Bank
19. The Sindh Bank Limited

PANEL B: Islamic Banks

20. BankIslami Pakistan LTD.

Appendix B: Risk Disclosure Index

Capital Structure and Adequacy	
1.	Capital structure
2.	Changes in capital structure
3.	Capital instruments
4.	Capital adequacy
5.	Equity risk
6.	Contingency planning
7.	Capital management strategy
8.	Future capital plans

Financial Risk	
9.	Pricing risk
10.	Liquidity risk
11.	Credit risk
12.	Changes in interest rates
13.	Credit risk exposure
14.	Insurance risk
15.	Market risk
16.	Interest rate
17.	Exchange rate
18.	Sensitivity analysis

Operational Risk	
19.	Operational risk management
20.	Operational VaR
21.	Internal audit function
22.	Internal control system
23.	Business disruption
24.	Legal risk
25.	Fraud risk
26.	Compliance risk
27.	Damage to physical assets

28.	Workforce safety
Financial Instruments, Reserves and Segments	
29.	Derivatives
30.	Fair value
31.	Cumulative change in fair value
32.	Hedging Description
33.	Cash flow hedge
34.	Statutory reserves
35.	Legal reserves
36.	Customer concentration
37.	Geographical concentration
Accounting and Presentation Policies	
38.	Risk management
39.	Objectives of holding derivatives
40.	Estimates
41.	Collateral assets
42.	Financial assets impairment
43.	Assets impairment
44.	Contingent liabilities
45.	Contingent assets
46.	Lower of cost or market
47.	Contingency
General Risks Information	
48.	Concentration of credit risk
49.	Customer satisfaction
50.	High competition
51.	Commodity
52.	Natural disasters
53.	Communications
54.	Outsourcing
55.	Competition
56.	Reputation
57.	Weather conditions
58.	Changes in technology
Extra Risks specific for Islamic Banks	
59.	Rate of return risk
60.	Shariah non-compliance risk
61.	Displaced commercial risk
62.	Equity investment risk
63.	Inventory risk
64.	Market risk
65.	Fiduciary risk
66.	IRR
67.	PER