

How does Corporate and Shariah governance Influence the Default Risk: A Mediating Role of Risk Committee

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ARTICLE INFO	ABSTRACT
<p><i>Article History:</i> Received: 30 May, 2022 Revised: 16 Aug, 2022 Accepted: 21 Sep, 2022 Available Online: 10 Oct, 2022</p> <p>DOI: 10.56536/ijmres.v12i3.250</p> <hr/> <p><i>Keywords:</i></p> <p>Ownership structure, board structure, Shariah governance, risk committee, default risk.</p> <hr/> <p><i>JEL Classification:</i> G01, G18, and G21</p>	<p>The recent financial crises, corporate scandals, complexity of financial services offered by the banking industry, and growth rate of Islamic banking are steeply increasing in developed and developing economies like Pakistan. The present study proposed that ownership structure, board structure, and Shariah governance use the agency theory and Maqsidal-Shariah as underpinning theories. Moreover, the present study proposed the role risk committee as mediating between the association of ownership, board structure, Shariah governance, and default risk. The empirical findings of present study reveal that ownership structure and board structure are significantly linked with default risk. The findings also reveal that Shariah governance is significantly associated with the default risk of Islamic banks operating in Pakistan. Moreover, the risk committee is significantly linked with the default risk of Islamic bank of Pakistan. Furthermore, findings reveal that risk committee significance mediates the association between Shariah governance and default risk. However, the risk committee fails to mediate the association between ownership, board structure, and default risk of Islamic banks operating in Pakistan. The present study's findings will facilitate the managers, shareholders, investors, policymakers, and regulatory authorities in understanding the role of ownership, board structure, Shariah governance, risk committee, and default risk of Islamic banks operating in Pakistan. Future studies need to consider the role of leverage, bank size, CEO financial background, and audit committee to explain the model better.</p>

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1. INTRODUCTION

A sudden and widespread COVID-19 pandemic is threatening the global financial system. This pandemic's duration and ultimate impact are unknown (Goodell, 2020). So far, this pandemic's impact on the global economy has been devastating since the last global financial crisis a decade ago (Song & Zhou, 2020). Governments and central banks have responded by implementing stimulus packages and fiscal and monetary policy easing measures, respectively (Chugunov, Pasichnyi, Koroviy, Kaneva, & Nikitishin, 2021). Immediate and long-term financial vulnerability in Islamic-finance jurisdictions due to oil price volatility, exiting financial vulnerability and recent COVID-19 pandemic required investigation (Mansour, Ajmi, & Saci,

2022). In the contemporary global Islamic banking reports, a 12.7 percent growth rate was recorded for the Islamic banking segment in 2019, compared to just 0.9 percent in 2018 (Islamic financial industry sustainability report, 2020).

Islamic banking is emerging in Islamic countries; however, due to certain restrictions based on Shariah, the mainstream method becomes void based on the system of usury or Riba (Rahahleh, Bhatti, & Misman, 2019). In this essence, Islamic banking comes into play. However, the companies working in Pakistan and people are buying policies and Islamic products (musharkah, mudarbah, salam, and istisna) but dealing with risk related to default, the research in this domain is limited (Salman, 2014). As a result, the question of what elements contribute significantly to improving this business while reducing the risk of default emerges. Moreover, due to development in Islamic finance, the rules and regulations are yet to be standardized, which shifts the pressure on the corporations' governing bodies to act and decide smartly, reducing the uncertainty associated with it (Rahahleh et al., 2019). Hence, this research will address this problem while undertaking new variables that guide the governing bodies to devise policies accordingly.

Default risk is one of the most general concepts in the banking industry regardless of banks' nature, whether Islamic or conventional. Most studies usually focus on conventional banking-related determinants affecting credit risk (Pambekti, 2020). In this concern, certain studies attempted to evaluate whether corporate governance contributes significantly to mitigating the default risk of banks. For instance, the research conducted in North America, Canada, and GCC reveals that the corporate governance code significantly reduces the risk and improves the banking industry's efficiency (Tu, 2015; Switzer, Tu, & Wang, 2018; Zeineb & Mensi, 2018). During post-crisis periods, ownership structure and board size have a significant positive impact on the default risk of Canadian financial firms (Switzer, Wang, & Zhang, 2018). According to (Lu & Boateng, 2018) a negative relationship exists between board size and a bank's credit risk level.

However, relatively little literature has been published on the effect of firm size on the financial sector's profitability. Another study concluded that the firm's size moderate growth and profitability (Hasan, Manurung, & Usman, 2020). Previous studies have only focused on the relationship between firm size and profitability. The literature has found nothing regarding the moderating effect of firm size between governance and default risk. However, there is also research conducted in Pakistan; for instance, the research was conducted on banks and non-financial institutions (Hassan, Shah, Khan, Farhan, & Basheer, 2018; Honey, Tashfeen, & Farid, 2019). Moreover, the literature indicates that along with corporate governance, other factors also significantly mitigate the default risk of banks, particularly Islamic banks. Given this, the research evaluated the mediated role of debt between default risk and corporate governance and Shariah governance in the case of the Australian debt market (Wu, Peng, Shan, & Zhang, 2020).

Furthermore, the literature indicates the significance of Shariah governance towards mitigating risk in the banking industry. Like that, very few studies focused on Shariah governance's impact

on Islamic banks' financial performance and default risk (Safiullah & Shamsuddin, 2018; Najwa, Ramly, & Haron, 2020). So, it can be evidenced that researchers have ambiguity about the exact relationship of governance, profitability, and default risk. The Shariah supervisory board (SSB) attributes have no significant association with default or credit risk (Safiullah & Shamsuddin, 2018). Detailed examination of previous studies indicates their mixed results of Shariah Governance on the default risk of banks generates a research gap. The researcher is motivated to introduce moderating and mediating variables to explore the relationship between Shariah governance and default risk.

The role of the risk committee has been documented in the recent literature, which affirms that the risk committee, along with the capital structure, significantly influences the large-scale banks operating in developing countries (Najwa, Ramly, & Haron, 2020). Given the recent financial crisis, research suggests that financial institutions should have constituted an individual risk committee at the board level to comprehend various risks and prevent excessive risk taking (Elamer & Benyazid, 2018). The negative relationship among risk committees features meeting frequency, independence, size, and existence with default risk of banks (Bhuiyan, Salma, Roudaki, & Tavite, 2020). The risk committee was higher to decline the risk of credit, whereas Shariah supervision boards have consisted of Shariah consultants with high skills in banking and shariah governance (Najwa et al., 2020). The diminishing effect of the risk committee on credit risk was fundamental to the appropriate contribution of female shariah consultants in the Shariah supervision board (Nugraheni & Muhammad, 2019).

Therefore, the following study will address this gap and consider Islamic banks operating in Pakistan. Therefore, this research will attempt to fill this gap by considering leverage as a mediating variable in Pakistan and its Islamic banks. The study, therefore, will assist in narrowing down the gap and evaluate whether leverage reflects the profile of association between risk and corporate governance. Hence, this researcher will undertake other variable risk committees that might mediate the risk-corporate governance relationship to widen the scope further. However, literature from developing countries and previous corporate scandals call for an assessment of possible factors influencing the default risk of the banking sector, particularly the Islamic banking sector, because there is limited literature in this domain, particularly evidence from developing countries (Rahahleh et al., 2019).

2. LITERATURE REVIEW

In the 1990s, when corporate scandals (Enron, WorldCom, Parmalat, and Taj Company) affected the economies around the global corporate governance became a crucial issue for governments, policymakers, and practitioners. These corporate scandals occurred due to the dishonesties and misconducts of auditors, directors, management, and controller of financial markets (Code of Corporate Governance 2002, 2002).

Corporate Governance and Default Risk

Bank governance has become the focus of a flurry of recent research and heated policy debates. However, the literature presents conflicting evidence on bank risk-taking governance implications—the effectiveness of CEO remuneration, risk management, and board structure and entertainment employed in banks. Previous studies indicated bank governance as a method to safeguard the interest of the banks' shareholders only. Nevertheless, defended guarantees to taxpayers have protected a large share of the banks' liabilities, and those banks were highly shareholder-focused and leveraged. Thus, governance might well subordinate the enthusiasm of several stakeholders and risk-takers concerned in the banking sector.

The literature review emphasized the requirement of internal governance methods to alleviate such behavior by considering taxpayers, creditors, and shareholders (Srivastav & Hagendorff, 2015). The second widely tested topic in corporate governance and bankings ownership structure (Shleifer & Vishny, 1997). The agency issues indicate the different impact of ownership structure on capital and risk, which require in-depth assessment (Altunbas, Carbo, Gardener, & Molyneux, 2007; Barry, Kuczmiarczyk, & Hardiman, 2011).

Ownership Structure and Default risk

The earlier literature reported mixed results during the different sample periods; for instance, during the sample period of 1991 to 1996, the literature revealed a higher ratio of institutional ownership resulting in a higher rating on new bonds and lower bond yields on exiting bonds (Bhojraj & Sengupta, 2003). In addition, the literature indicates no significant association between institutional investors and the credit ratio of banks with the sample period of 2002 on cross-sectional data (Ashbaugh-Skaife, Collins, & LaFond, 2006). Before the financial crisis period from 2006 to 2006, the literature indicated that institutional ownership positively related to the bank's default risk (Erkens, Hung, & Matos, 2012). Furthermore, the literature reveals that institutional ownership does not provide sufficient monitoring or mitigate the risk in the banking industry during the financial crisis period (Aebi, Sabato, & Schmid, 2012).

As a result of concentrating ownership in developed nations, principal-agent conflict is reduced. Still, it requires that the researcher rethink agency theory to account for the emerging issue of Principal-Principal conflict (Lozano, Martínez, & Pindado, 2016; Renders & Gaeremynck, 2012; Young, Peng, Ahlstrom, Bruton, & Jiang, 2008). However, Corporate Governance techniques have been proven to solve traditional PA conflicts, and managers' conflicts are eased by a more centralized ownership structure (Lozano et al., 2016). Determining the ambiguous role of ownership concentration in mitigating and exacerbating agency difficulties requires this new study stream (Chang, 2003; Peng, 2012; Lundqvist & Vilhelmsson, 2018). The above-discussed literature concluded that institutional ownership is significantly and negatively associated with default risk of bank pre- and post-financial crisis while not significant during the financial crisis.

H1: Ownership structure is significantly linked with the default risk of Islamic banks.

Board Structure and default risk

Suitable corporate governance mechanisms could alleviate agency issues created by minority and majority shareholders in an environment where agency issues exist. The board structure effectively resolves conflicts between managers and minority shareholders (Hermalin &

Weisbach, 2001). CG practices such as having 30 directors on the board are essential (Dittmar & Marht-Smith, 2007). It examines four variables: board structures, CG practices, cash holdings, and the association between them in ASEAN countries. Cash holdings were lower in firms with a high degree of independence from the board, a large board, and less managerial entrenchment (Lee, Lev, & Yeo, 2008).

"Independent directors" could reduce asymmetric information problems between firms and other investors, according to (Ozkan, 2011). Desai, Kroll, and Wright (2005) argue that independent board monitoring control can improve shareholder protection and family business performance (Harford, Mansi, & Maxwell, 2008). Further, board independence, board composition, the board size, and cash holdings have a significant and negative association.

More recently published research has also revealed a significant difference between the default risk of financial sector companies and non-financial sector companies in terms of board size and board independence. Therefore, the current study measures board structure based on the size and independence of its boards.

H2: Board structure is significantly linked with the default risk of Islamic banks.

Shariah Governance and Default Risk

The influence of the Shariah supervision board, board structure, and CEO power on companies' default risk reveals that Shariah supervision boards fundamentally influence the performance of Islamic banks (Alam, Ramachandran, & Nahomy, 2020). They performed the role of supervision, but the effect was negligible when they were only in an advisory role.

The Shariah supervisory board and board of directors as Islamic banks were featured by a high ratio of complex activities. Consequently, we have found that a large Shariah supervisor board size might result in low agency costs, and the perfect board size, including unrestricted agreements, causes high agency costs (Najwa et al., 2020). This showed that unrestricted profit-sharing contracts were one of the significant resources of the differentiated agency association in Islamic banks. The study has different policy implications for the regulatory authority, including the design of governance methods in Islamic banks and the spirits of unrestricted agreements (Frag, Mallin, & Ow-Yong, 2018).

The findings of recent literature revealed that the linkage among efficient shariah governance and default risk in the banks beyond the sample though the commercial banks in GCC was a reduction in default risk distance was linked with low efficiency of shariah governance (Saeed, 2019).

H3: Shariah governance is significantly linked with the default risk of Islamic banks.

Risk Committee and Default Risk

Keeping in view the latest financial crisis, Elamer and Benyazid (2018) suggested that the financial institutes should have formed an individual risk committee at the board level to understand several risks and stop extra risk takings. The negative relationship among risk committees features meeting frequency, independence, size, and existence with default risk (Bhuiyan et al., 2020).

The findings also revealed that companies without risk committees have performed fundamentally better than those without risk committees. The results were against the study where risk committees were considered for their capability to manage and mitigate risks with expertise (Basiruddin & Ahmed, 2019). The study further contributed to the current literature on the linkage of risk committee governance with financial performance after the governance and banking reforms (Elamer & Benyazid, 2018).

In the words of Ramly and Nordin (2018), the study inspected the moderating effect of Shariah supervision boards on the association between board independence and risk committee. The study also emphasized their four major results; Shariah supervision boards skilled in banking and shariah related areas with lower risk of credit; higher independence board was likely to diminish credit risk (Nowroz, 2018). In contrast, the Shariah supervision board contained Sharia advisors skilled in Shariah consultants and a skillful board in banking and Shariah areas. The risk committee was higher to decline the risk of credit, whereas Shariah supervision boards have consisted of Shariah consultants with high skills in banking and shariah governance (Najwa et al., 2020). The diminishing effect of the risk committee on credit risk was fundamental to the appropriate contribution of female shariah consultants in the Shariah supervision board (Nugraheni & Muhammad, 2019).

H4: Risk committee significantly linked with the default risk of Islamic banks.

H5: Risk committee mediates the association between ownership structure and default risk of Islamic banks.

H6: Risk committee mediates the association between board structure and default risk of Islamic banks.

H7: Risk committee mediates the association between Shariah governance and default risk of Islamic banks.

Theoretical framework

Agency Theory

Corporate governance regulations establish ownership, board structure, and the audit committee's role to minimize conflicts that may arise under the agency (Anderson, Banker, & Janakiraman, 2003; Kachelmeier, Rasmussen, & Schmidt, 2016; Yunos, 2011). A corporate governance code implemented effectively and efficiently minimizes agency and minority shareholder interest (Mallin, Mullineux, & Wihlborg, 2005). The agency theory holds that managers behave in their self-interest rather than in the best interests of their shareholders. Asymmetry in financial information results from management's focus on its claims and benefits.

The agency theory claims that the principal hires the agents to maximize the shareholders' wealth. This relationship is an agreement between principal and agent, whereby the agent is supposed to act on behalf of the principal (Jensen & Meckling, 1976). Based on this agreement, agents are entrusted with management and control of the principal's assets. The agent did not own the assets; instead, they controlled and managed the assets on behalf of the principal.

The underlying major agency issues include distorting results, concealing inefficiencies, skipping obligations, expensive compensation packages, acting for majority shareholders at the cost of

minority shareholders. According to Jensen, (1986), "the principal must delegate some power and transfer associated risk to an agent, which, in turn, would obligate the agent to perform his obligations honestly, to reduce the agency problem". Furthermore, the recent literature documented the various measures to mitigate the agency problem or dilemma between principal and agent. The recent literature indicates that the risk-bearing system should be re-examined, and the risk-bearing party should claim a certain profit.

Theory of Maqasid al-Shariah

The “Maqsid” is the plural of Maqasid which means objective, principles, purpose, and planned goals (Zaher & Hassan, 2001). The word “Maqasid" encompasses the insights and understanding behind the rulings and aims of specific actions. Moreover, some scholars and researchers describe "Shariah" as firmly followed by Almighty Allah and Islam (Grassa, 2016). Therefore, Maqasid al-Shari’ah signifies the underlying principles of “Shari’ah” (Dusuki & Bouheraoua, 2011). The underlying principles of Maqasid al-Shariah are five (1) protection of life, (2) protection of family, (3) protection of religion, (4) protection of property and (5) protection of intellect.

It requires maintaining equality and indiscrimination in the rights and obligations of the community. Social justice must be encouraged regardless of Muslim or non-Muslim, friend and foe, individual or group. Unlawful behavior and activities are strongly condemned in the Quran if it does not exist; it is against the beliefs of the Qur'an and the Maqasidal-Shari’ah (Lahsasna & Sulaiman, 2010).

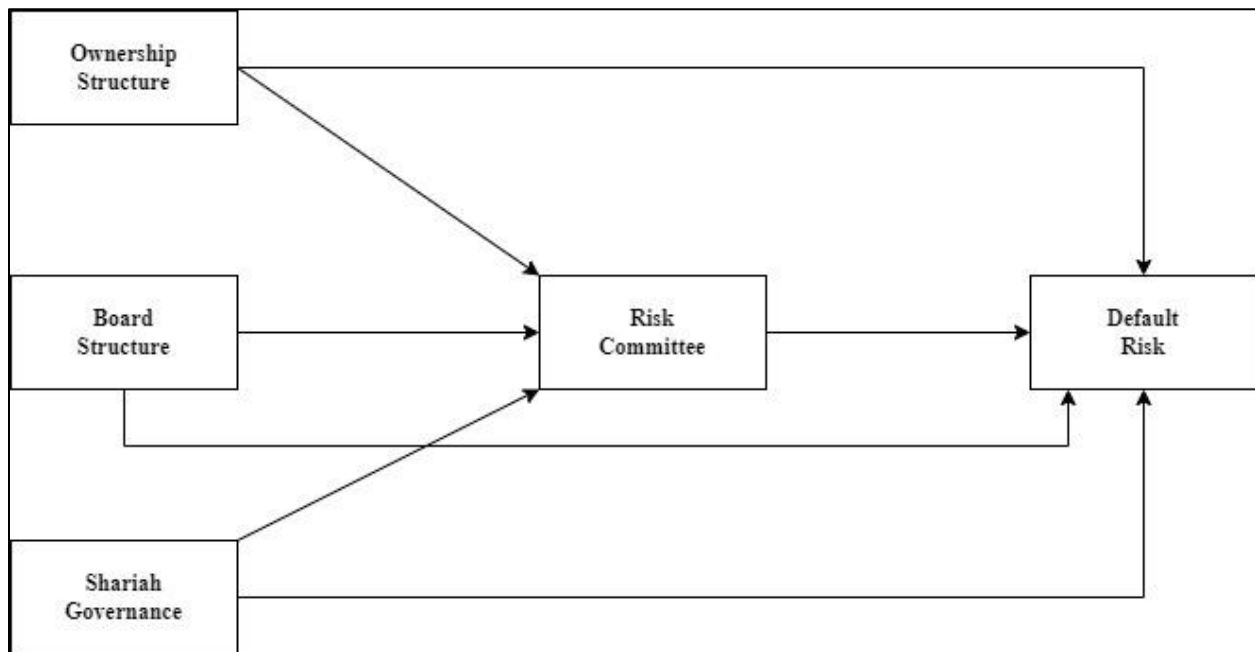


Figure 1: Theoretical Framework

3. DATA AND METHODOLOGY

Research approach and design

The present study is explanatory, also known as “causal research design”. The underlying objective of causal research is to evaluate the cause and effect of latent constructs under observation. The current study used a causal research design because the underlying goal is to determine how much Shariah governance, ownership structure, and board structure influence on default risk. How much does the risk committee mediate the relationship between ownership, board structure, Shariah governance, and default risk in Islamic banks.

Population and Sample Size

In light of the current study's research aims, data were acquired from state bank reports, annual reports of Islamic banks, and the Islamic component of conventional banks in Pakistan. The researcher considered the data of 22 Islamic banks, 5 banks that served as full-fledged Islamic banking and 17 Islamic banking branches or windows of conventional banks ranging over 14 years from 2006 to 2019. The current study excludes Zariah Taraqiati bank (ZTBL) data from the sample because it obtained a license but failed to commence its Islamic banking operations in 2019, and burj bank ceased operations in 2015.

Operationalization of the critical variables

Dependent Variable

Default risk is when an obligor cannot meet its obligations at the specified time. A firm's default risk is the risk that the firm would not be able to repay its debts and fulfill its obligation. Default risk is sometimes called credit risk, and these terms are used interchangeably in the present study.

Several techniques have been developed in the last twenty years to measure default risk of banks. These techniques are usually classified as accounting-based, market-based and external rating agencies (Allen & Powell, 2011; Kabir, Worthington, & Gupta, 2015). Prior studies documented the different measures of default risk as the ratio of loan-loss provision to average gross loan (Berger, Imbierowicz, & Rauch, 2016), Altman's Z-score (Nguyen & Du, 2022), NPL (Non-performing loans) analysis (Khanh, Son, & Liem, 2022) and Olson's O score fall under the category of accounting-based techniques. Some external credit rating agencies, such as Standard and Poor's, Fitch, and Moody, also estimate credit ratings based on the credit risk of financial firms (Bonsall IV, Holzaman, & Miller, 2017; Gharghori, Chan, & Faff, 2006; Ghouma, 2017). Techniques utilising market-based indicators are considered the most contemporary and sophisticated methods, including Merton's DD (distance to default) model, CreditMetrics™, and VaR (Value at Risk) (Ames, Hines, & Sankara, 2018; Brogaard, Li, & Xia, 2017a; Gharghori et al., 2006). The present study measures the default risk of Islamic banking using the Merton's DD model using the market-based technique.

Distance to Default

Merton's DD model is the most used market-based credit risk model (Agarwal & Taffler, 2008; Harada et al., 2010). The distance to default (DD) metric calculates how far an asset's value is from the default point. It is measured using the following equation:

$$DD = \frac{MV_A - DP}{MV_A * \sigma_A} \quad (1)$$

Literature reveals that limited issues occur using this technique; not all the factors used to measure the DD can be observed explicitly. The MVA and α_A , unlike the measurable default stage, must be assumed. The recent literature has documented some derivation methods in the following sections.

KMV implements a formula to measure the firm's market value of assets and is based on Robert C. Merton's (1974) principle that the firm's value will be the call option on market value of total assets. Both are claimants of firm assets and contact obligation is limited in case of default, which is considered the underpinning feature of the substantial equity. That option's strike price will be the same as the debt's face value. As previously mentioned, default happens when a company cannot satisfy its loan obligations; thus, the option's strike price would be at the default stage. If the firm's value goes below the strike point, the option's value will be zero, and the choice will default. However, the option's value will increase as the firm's value grows (Merton 1974). There are two main principles in the Merton model. First, the underlying assets' overall market value (MVA) assumes a geometric Brownian motion,

$$dVA = \mu MVA dt + \alpha A . MVA . dP \quad (2)$$

Where dVA denotes the shift in market value of the firm's assets over time and reflects the estimated rate of return on the firm's assets over time. MVA represents the market value of a bank's securities, A for the firm's asset return uncertainty over time, and dP for the Wiener method.

Second, it is believed that the organisation recently launched a zero-coupon debenture for the maturity of T. The association between market value of assets (MVA) and equity (MVE), also known as equation explained by the Black-Scholes-Merton, is defined after this statement is agreed (Barath & Shumway, 2004), can be described as:

$$MVE = MVA . N(d1) - e^{-rfT} . X . N(d2) \quad (3)$$

Where N denotes cumulative density function of standard normal distribution, X is default point, while, rf is risk-free rate, and d1 and d2 are respectively

$$d1 = \frac{\left(\frac{MVA}{X}\right) + \left(r_f \frac{\sigma^2 A}{2}\right) . T}{\sigma_A . \sqrt{T}}, \text{ and} \quad (4)$$

$$d2 = d1 - \sigma_A . \sqrt{T}$$

For calculating DD, information regarding value and volatility of equity is required. According to Eq. (2), equity value can be considered as a function of the bank's value. Considering another assumption of Merton's model in banking firms' context, equity value can be regarded as a function of bank value and time,

$$\sigma_E = \left(\frac{V_B}{E}\right) \frac{\partial E}{\partial V} \sigma_B \quad (5)$$

However, according to Black Scholes Merton model: $\partial E/\partial V=N(d1)$, therefore, the relationship between bank volatility and its equity can take the following form:

$$\sigma_E = \left(\frac{V_B}{E}\right) N(d1) \sigma_B \quad (6)$$

Thus, the DD is:

$$DD_t = \frac{\ln\left(\frac{V_{B,t}}{X_t}\right) + \left(\mu - \frac{1}{2}\sigma^2 B\right) . T}{\sigma_B . \sqrt{T}} \quad (7)$$

In the above equation, MVA denotes assets' value, μ is expected return on assets, σ_A denotes assets volatility, T denotes period, and XT is liabilities' value.

As for the value of liabilities, in Merton's model, total value of liabilities is regarded as the terminal value of assets. However, current study considers default point as the summation of short-term plus long-term liabilities.

This modification is proposed after observing from a large sample of firms that when their asset value declines to a critical point between the value of total debt and short term debt, the firms default. The default probability is:

$$PD = N(-DD) \tag{8}$$

The market value of assets, volatility, and expected return on assets are unknown in advance. This information can be derived using equations (2) and (6). The following steps are taken to calculate DD:

To solve equation (7), the equity volatility is estimated in the first step. Equity volatility (σ_E) can be calculated using the historical stock prices of a publicly listed company. The methodology proposed by (Hull, 1999) is used, according to that methodology:

$$R_i = \ln(pr_t - pr_{t-1}) \tag{9}$$

In the above equation: R_i denotes the daily stock price returns where pr_t is closing stock price $I = 1.2.3.....n$. Annualized volatility is then estimated as:

$$\sigma_E = \frac{1}{\sqrt{\frac{1}{n}}} \sqrt{\frac{1}{n-1} \sum_{i=1}^n r_i^2 - \frac{1}{n(n-1)} (\sum_{i=1}^n r_i)^2} \tag{10}$$

In the above equation, n denotes the number of trading days in a year. After inserting equity’s market value (MVE) as the product of share price and number of outstanding shares, liabilities value (Xt) as short-term liabilities value plus long-term liabilities, and risk-free rate (r) as return on treasury bills in Equation (2) and Equation (6); the assets’ market value, volatility and expected drift are estimated. These values are then used in Equation (7) to arrive at the DD figure. DD is calculated using the excel solver routinised by different researchers (Akwa Sekyi & MOreno Gene, 2017; Berger et al., 2016).

The DD is the amount of standard deviations away from the default point of asset value. The more significant the gap to default ranking, the farther the firm (bank) value is from the default stage, and the lower the chance of default.

Table 1. Variable name, signs, and data sources for calculating Dependent Variables.

Variable	Calculation	Source
Distance to Default (DD)		
Market value of Equity (MV_E)	Stock price \times Number of outstanding shares	Pakistan Stock Exchange and Annual reports of banks
Volatility of equity (σ_E)	Annualized volatility of stock prices with daily frequency	Pakistan Stock Exchange
Total liabilities (X)	Short term liabilities + long term liabilities	Annual reports of banks
Risk free rate (r_f)	Treasury bill rate (per annum)	IMF
Market value of assets (MVA)	Author’s calculation	
Volatility of assets (σ_A)	Author’s calculation	
Expected return on assets (μ)	Author’s calculation	

Independent variables

The present study considered the board structure, ownership structure, and Shariah governance to predict default risk of Islamic banks of Pakistan.

The present study measures the board structure, in terms of board size (Brogaard et al., 2017a), board independence (Brogaard et al., 2017a), woman in board (Chen, Liao, & Chen, 2017) and CEO duality (Switzer, Wang, & Zhang, 2018). The present study measures the board size as the natural logarithm of total number of board size. The author calculates that the independent director ratio is the number of independent directors on a board. Furthermore, author considers the proportion of women on board of directors (Gender diversity). Instead, researcher measure CEO duality as a dummy variable.

Second, the researcher measures ownership structure by looking at inside holding (Cheng, Geng, & Zhang, 2016), director ownership, institutional ownership and block shareholders holding. Stakes owned by employees, managers, or executives of a company is called inside holding and measured in percentage (John, De Masi, & Paci, 2016). The present study estimates the director ownership, as a percentage of total shares held by the directors (Grassa, 2016). In addition, institutional ownership is measured as a percentage of total shares held by the institutions (Ge, Kang, Lobo, & Song, 2017). Finally, author also measured black ownership in percentage form. The primary purpose of shariah governance is to monitor the business activities according to shariah rules guided by a religious board which is the shariah supervisory board. The shariah governance aims to solve the conflicts between shareholders and management. In this research, the author uses the Shariah board size (Safiullah & Shamsuddin, 2018), Shariah board cross membership (Muda, 2017), Shariah board reputation (Safiullah, 2018), Shariah board expertise (Safiullah, 2018), and Shariah board qualification regarding Fiq (Hassan et al., 2017), Ph.D. and Law as (Safiullah, 2018) measures to protect the stakeholder (Arshad, Hussain, & Khan, 2020). Specifically, author considers the Shariah board size as the number of members in a Shariah board. Shariah board have cross membership like set in other banks etc as a Shariah member. Moreover, the current study measures the Shariah board cross membership as a percentage of members set in other boards. Shariah board scholars who sit on board AAOIFI or have membership of other IFIs, IFSB, Arty, SECP are used as a proxy or Shariah board reputation and it's also calculated in percentage (Safiullah & Shamsuddin, 2018). And, Shariah board scholar have education about Finance, economic and accounting etc author consider SSB Expertise. Furthermore, Shariah Board Qualification is measure by a percentage of Shariah Board members have Education of Fiqh. The author has also calculated how many percent Shariah board members have PhD degrees in the relevant field. Finally, members of the SB with advanced law degrees will strengthen their ability to articulate Islamic principles in banking activities, including implementing an irrational moral danger prohibition. Moreover, the current study measures Law qualification in the Shariah board as a percentage of law degree holders in SSB.

Mediating variable

Since the last financial crisis showed that banks are volatile companies that can distribute the consequences of their loss across the market, risk governance can play a more significant and more influential role within banks. In this research, the author uses the risk committee existence, size of the risk committee, risk committee diligence, no director in the risk committee, and risk committee independence to the measures risk committee. The present study measures the risk committee as present of risk committee 1 otherwise 0 (Bhuiyan, Cheema, & Man, 2020), which is considered a better risk governance measure.

Table 2: Description of Variables of the Study

Variable	Measurement	References
Dependent Variable		
Default Risk (DR)	Merton's DD, Altman's Z-Score (Z-Score) and ratio of loan-loss provision to average gross loan (Loss_P) are used as proxies of Default risk	(Tran, 2021) (Ghouma, 2017)
Merton's distance to default (DD)	DD measures the number of standard deviations the asset value is away from the default point	(Bonsall IV et al., 2017; Gharghori et al., 2006)
Independent Variable		
Board Size (BS)	Natural log of total number of members on the board	(Ge, Kang, Lobo, & Song, 2017; Switzer, Wang, & Zhang, 2018).
Independence of Board (IB)	Percentage of independent directors on board of directors	(Brogaard et al., 2017a; Grassa, 2016)
Woman in Board (WB)	Percentage of women directors on the board	(Chen et al., 2017; Froneberg, Kiesel, & Schiereck, 2016)
Separation Between CEO and Chairman (CD)	A dummy variable equals one if CEO and Chairman are the same person otherwise, zero.	(Alali, Anandarajan, & Jiang, 2012; Froneberg et al., 2016)
Institutional Ownership (IO)	Percentage of outstanding shares owned by the institutions	(Ellahi, Kiani, Malik, Raza, & Gul, 2021) (Chen, Liao, & Chen, 2017)(Chen et al., 2017) (Chen et al., 2017)
Inside Holding (IH)	Percentage owned by owners	(Brogaard, Li, & Xia, 2017b; Cheng et al., 2016; Wan Yusoff, 2014)
Director Ownership (DO)	Percentage of outstanding shares held by director	(Leung & Horwitz, 2004)
Blockholders ownership	percentage of outstanding shares owned by investor owning five percent or more of the banks shares	(Barroso, Ben, & Lesage, 2018)
Shariah Board Size (SSBSize)	Natural log of total number of shariah board member in Shariah Board.	(Hassan et al., 2017; Safiullah & Shamsuddin, 2018)
Shariah Board Qualification of Islamic study (SSBQ1)	Percentage SSB academic qualifications is the number of SSB members with Bs Shariah in Law, as a percentage of the total SSB members	(Ginena & Hamid 2015; Safiullah, 2018)
Shariah Board Qualification of Fiqh (SSBQ2)	Percentage SSB academic qualifications is the number of SSB members have Education of Fiqh and LLM, as a percentage of the total SSB members	(Ginena & Hamid 2015; Hassan et al., 2017)
Shariah Board cross Member Ship (SSBCM)	Percentage of members set in other board over total SSB members	Muda (2017)
Shariah Board Reputation (SSBR)	Percentage The number of internationally reputable Shariah scholars on the SSB, as a percentage of total number of SSB members of a bank.	(Mejia et al., 2014; Safiullah 2018)
Shariah Supervisory Board expertise (SSBEx)	Percentage SSB members have Education Finance and accounting, as a percentage of the total SSB members	(Mejia et al., 2014; Safiullah, 2018)
Mediating Variable		
Risk committee existence	RCE = Assign the value of 1 to a firm with a separate RC in a financial year and 0 otherwise	(Rahayu, Harymawan, Ekasari, & Nowland, 2021)
Size of risk committee	SRC = number of members set in risk committee	(Fajembola, Abdul Rahman, & Rus., 2018; Bhuiyan, Cheema, & Man., 2020).
RC diligence	RCD = number of meetings held in a year	(Halim, Mustika, Sari, Anugerah, & Mohd-Sanusi, 2017; Fajembola, Abdul Rahman, & Rus, 2018)
No of director in risk committee	RCD = number of directors set in risk committee	(Fajembola, Abdul Rahman, & Rus, 2018; Ramly & Nordin, 2018)
Risk committee independence	RCI = (Independent director in RC / Total member in RC) X 100	(Fajembola, Abdul Rahman, & Rus, 2018; Ramly & Nordin, 2018)

Structural equation modeling

Structural equation modeling (SEM) is the most appropriate technique for evaluating or predicting the latent and criterion constructs, assessing measurement error, and explaining operation and mediation in a single model (Bisbe & Malagueño, 2015; Samuel, Holy, & John, 2019). The structural equation modeling technique is categorized into two Covariance-based and partial least squares based structural equation modeling. There has been a rise in PLS-SEM use compared to CB-SEM due to theoretical and methodological difficulties (Hair, Risher, Sarstedt, & Ringle, 2019). PLS-SEM successfully explains the variance that predicts construct relationships. This method maximizes the explained variance of the endogenous latent variables rather than recreating the theoretical covariance matrix. When dealing with highly complex data, the PLS-SEM methodology is highly effective. A Linear combination of latent constructs and related indicators was used to estimate latent variables in this methodology (Nitzl, 2016; Samuel et al., 2019).

The effect of ownership structure, board structure, and Shariah governance on the default risk of Islamic and Islamic windows of conventional banks in Pakistan was investigated using the partial least-squares structural equation modeling methodology (PLS-SEM). The PLS-SEM method was chosen because the ownership structure, board structure, Shariah governance, and risk committee are frequently latent and cannot be viewed directly using ratios and percentages. PLS-SEM is applied using the Smart-PLS program because it effectively handles nonlinear interactions.

PLS-SEM results

Missing data imputation is performed as an initial step PLS-SEM using the Stochastic Multiple Regression Imputation techniques. Reflective measuring scales that are highly correlated and interchangeable to compute the constructs. Loadings of all indicators to calculate the latent constructs for the scale validity and reliability under the measurement model assessment. Any indicator with loading of less than 0.5 is removed from the model (Hair et al., 2019; Lee et al., 2008; Samuel et al., 2019).

4. RESULTS AND DISCUSSION

The present study intends to evaluate the role of ownership structure, board structure, Shariah governance to predict their role in estimating default risk of Islamic banks in the presence of risk committee. The present study used the partial least square structural equation modeling (PLS-SEM) technique using SmartPLS 3.2.9. The recent literature affirms that PLS-SEM is suitable for secondary data using SmartPLS 3.2.9 (Hair et al., 2019; Hair, Sarstedt, Pieper, Ringle, & Mena, 2012). Moreover, the PLS-SEM does not require to meet the normality assumption as the SmartPLS is non-parametric technique (Hair, Hult, Ringle, Sarstedt, & Thiele, 2017). However, it is recommended to test the multivariate normality using Mardia technique before moving to the measurement and structural model assessment (Cain, Zhang, & Yuan, 2017). Mardia's multivariate normality threshold values are 20 for kurtosis and ± 1 for skewness (Mardia, 1974). The findings of multivariate normality of all the latent constructs were reported as results within the threshold value in table 3.

Table 3: Multivariate Normality

	Skewness	SE_skew	Z_skew	Kurtosis	SE_kurt	Z_kurt
BS	1.082	0.15	7.217	0.862	0.299	2.887
DR	2.501	0.15	16.685	5.834	0.299	19.530
OS	10.252	0.15	68.390	110.941	0.299	371.391
RC	-1.185	0.15	-7.907	-0.232	0.299	-0.775
SG	1.011	0.15	6.743	1.709	0.299	5.722

Mardia's multivariate skewness and kurtosis			
	b	z	p-value
Skewness	115.4262	5078.7540	0.000
Kurtosis	144.9308	106.7438	0.000

The results of descriptive statistics of latent constructs, including respected items, were reported in table 4.2. The ownership structure was measured using the director's ownership and blockholders holdings with the mean values 0.049 and 1.189, maximum value 0.670 and 74.820, minimum values 0.000 and 0.000 and standard deviation 0.085 and 6.439, respectively. The present study measured the board structure with board size and independent members on board. These constructs indicate a mean value of 8.515 and 0.968, maximum value 13.00 and 9.00, minimum value 4.00 and 0.030, and standard deviation 1.607 and 1.945, respectively. The Shariah governance is measured based on the independency of committee, Shariah board reputation, Shariah board Fiqh Qualification, Shariah Board Qualification of Law, Shariah board expertise with mean value 0.255, 2.277, 0.960, 0.304, 0.273, maximum value 0.750, 7.00, 1.00, 1.00, 1.00, the minimum value 0.00, 1.00, 0.200, 0.00, 0.00, and standard deviation 0.228, 1.321, 0.140, 0.350, and 0.315 respectively. The risk committee existence, members in committee, diligence risk committee, and no of director in committee with mean values 0.788, 3.409, 3.345, and 2.701, maximum values 1.00, 7.00, 13.00, and 6.00, minimum value 0.00, 0.00, 0.00, and 0.00, and the standard deviation 0.409, 1.899, 2.196, and 1.556 respectively. The present study measures the default risk with distance to default with the mean value of 118.804, maximum value 848.910, minimum value 0.770, and standard deviation 177.967.

Table 4: Descriptive Statistics

	Items	Mean	Min	Max	SD
Ownership Structure	DO	0.049	0.000	0.670	0.085
	MH	1.189	0.000	74.820	6.439
Board Structure	BS	8.515	4.000	13.000	1.607
	IB	0.968	0.030	9.000	1.945
	RCI	0.255	0.000	0.750	0.228
	SBS	2.277	1.000	7.000	1.321
Shariah Governance	SBFQ	0.960	0.200	1.000	0.140
	SBLQ	0.304	0.000	1.000	0.350
	SBE	0.273	0.000	1.000	0.315
	RCE	0.788	0.000	1.000	0.409
	RCMC	3.409	0.000	7.000	1.899
Risk Committee	RCD	3.345	0.000	13.000	2.196
	DRC	2.701	0.000	6.000	1.556
	DD	118.804	0.770	848.910	177.967

Note: **DD** = Default Risk, **BS** = Board Size, **IB** = Board Independence, **CD**= CEO Duality, **WB**= Women on Board, **IO**= Institutional ownership, **DO** = Director's ownership, **IH**= Insider holdings, **MH** = Blockholders holding, **SBS** = Shariah Board Size, **SBFQ**= Shariah Board Fiq Qualification, **SBDQ**= Shariah board PhD qualification, **SBCM**= Shariah Board cross Member Ship, **SBLQ**= Shariah Board Qualification of Law, **SBR**= Shariah Board Reputation, **SBE**= Shariah board expertise, **RCE** = Risk Committee existence, **RCMC** = Member in Committee, **RCD** = Diligence risk committee, **DRC** = No of Director in Committee, **RCI** = Independency of Committee,

The bootstrapping is used to test the statistical significance as PLS-SEM is a non-parametric method of analysis (Chin, 1998). The recent literature indicates that the researcher needs to evaluate the indicator's statistical significance of weights using the BCa bootstrapping at 90% confidence interval level (Hair et al., 2017). If the weights are insignificant, no significant indicator must be considered for removal from the model for final analysis(Hair et al., 2019). The findings of outer weight significance indicate that insider holdings and institutional ownership fail to meet the criteria and are removed from model. Similarly, CEO duality and women on board were removed from final model. In case of Shariah governance members in Shariah governance committee, PhD qualification holders in Shariah governance committee, and reputation of Shariah governance committee fails to meet the criteria and were removed from the model. In addition, all the risk committee indicators are significant and meet the requirements hence were included in the final model. The results of outer weight were reported in table 5.

Table 5: Outer Weights (Statistical significance of Indicators)

		Coeff.	SD	T-Values	P-Values
Ownership Structure	DO <- Ownership Structure	0.552	0.270	2.044	0.037
	MH <- Ownership Structure	0.972	0.484	2.006	0.045
Board Structure	BS <- Board Structure	0.754	0.130	5.798	0.000
	IB <- Board Structure	0.550	0.141	3.908	0.000
Shariah Governance	SBE <- Shariah Governance	0.317	0.069	4.583	0.000
	SBFQ <- Shariah Governance	-0.337	0.078	4.318	0.000
	SBLQ <- Shariah Governance	0.228	0.082	2.789	0.005
	SBS <- Shariah Governance	0.609	0.049	12.418	0.000
Risk Committee	DRC <- Risk Committee	0.236	0.029	8.275	0.000
	RCD <- Risk Committee	0.168	0.039	4.308	0.000
	RCE <- Risk Committee	0.275	0.017	15.828	0.000
	RCI <- Risk Committee	0.189	0.051	3.672	0.000
	RCMC <- Risk Committee	0.256	0.019	13.486	0.000

Note: **BS** = Board Size, **IB** = Board Independence, **CD**= CEO Duality, **WB**= Women on Board, **IO**= Institutional ownership, **DO** = Director's ownership, **IH**= Insider holdings, **MH** = Blockholders holding, **SBS** = Shariah Board Size, **SBFQ**= Shariah Board Fiq Qualification, **SBDQ**= Shariah board PhD qualification, **SBCM**= Shariah Board cross Member Ship, **SBLQ**= Shariah Board Qualification of Law, **SBR**= Shariah Board Reputation, **SBE**= Shariah board expertise, **RCE** = Risk Committee existence, **RCMC** = Member in Committee, **RCD** = Diligence risk committee, **DRC** = No of Director in Committee, **RCI** = Independency of Committee, **LEV**= Leverage, **Size** = Bank size.

The results of the measurement model for the first order were reported in table 4.4. The present study assesses the measurement model based on loadings, Cronbach alpha, composite reliability, and average variance extracted. The findings of the measurement model indicate that latent constructs meet the threshold value Cronbach alpha 0.70, 0.70 for composite reliability, and 0.50 for average variance extracted. Furthermore, two schools of thought in the case of discriminant validity strict criteria indicate the threshold value is 0.85, and lenient standards indicate the threshold value is 0.90. The finding indicates that all the latent constructs meet discriminant validity criteria under both criteria(s).

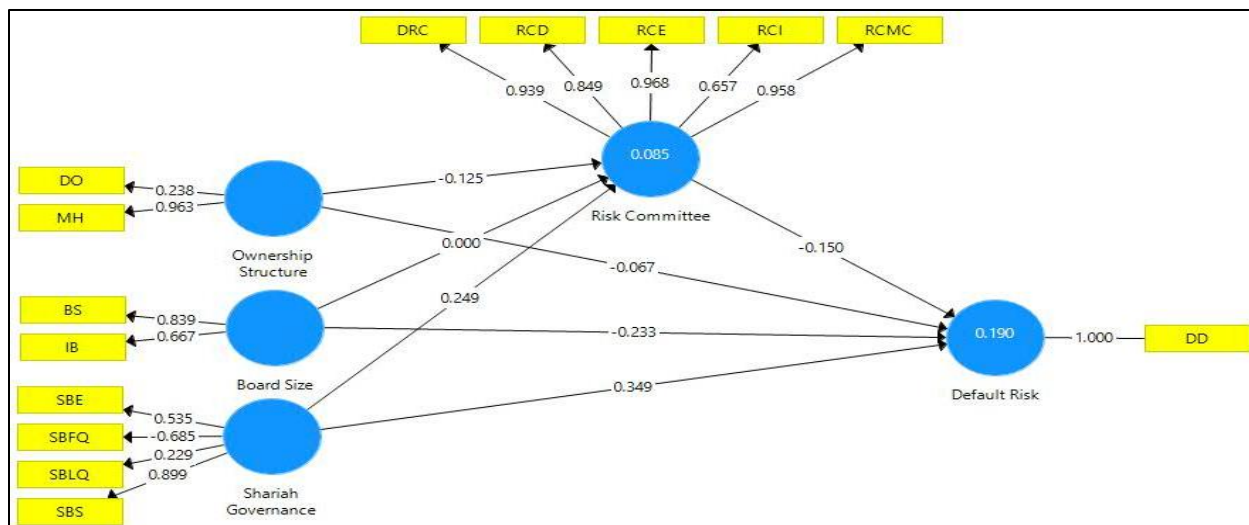


Figure 2: Measurement Model

Direct Hypothesis

The empirical findings reveal that ownership structure is negatively and insignificant linked with the risk committee at a 5% level of significance; however, the results at a 10% level of significance indicate a negative and significant association with the risk committee ($\beta=-0.125$, $t=1.767$, $p=0.077$) with the effect 0.017 which indicates a small effect size. However, ownership structure indicates a negative yet significant association with the default risk of Islamic bank at a 5% level of significance ($\beta=-0.067$, $t=2.742$, $p=0.006$) with an effect size of 0.02, which indicate a small effect size. The second construct of corporate governance was the board structure which indicates a positive but insignificant association with risk committee ($\beta=0.000$, $t=0.006$, $p=0.996$) with a small effect size. Moreover, board structure indicates a negative but significant association with default risk at a 5% significance level ($\beta=-0.233$, $t=7.753$, $p=0.000$). Furthermore, Shariah governance indicate a positive and significant association with risk committee ($\beta=0.249$, $t=4.090$, $p=0.000$).

Moreover, the effect size is small, while Shariah governance also indicate a positive and significant association with the default risk of Islamic banks operating in Pakistan ($\beta=0.349$, $t=6.327$, $p=0.000$) with a medium size effect size. In addition, risk committee indicates a negative yet insignificant association with the default risk of Islamic banks operating in Pakistan at a 5% level of significance ($\beta=-0.150$, $t=2.112$, $p=0.035$) with a small effect size. The results of the direct hypothesis were reported in table 6 and figure 3.

Table 6: Direct Hypothesis

	Coeff.	SD	T-Values	P-Values	f-square
Ownership Structure -> Risk Committee	-0.125	0.071	1.767	0.077	0.017
Ownership Structure -> Default Risk	-0.067	0.024	2.742	0.006	0.025
Board Structure -> Risk Committee	0.000	0.064	0.006	0.996	0.081
Board Structure -> Default Risk	-0.233	0.030	7.753	0.000	0.066
Shariah Governance -> Risk Committee	0.249	0.061	4.090	0.000	0.068
Shariah Governance -> Default Risk	0.349	0.055	6.327	0.000	0.138
Risk Committee -> Default Risk	-0.150	0.071	2.112	0.035	0.025

The empirical results indicate that risk committee does not mediate the association between ownership structure and default risk 5% of significance ($\beta=0.019$, $t=1.339$, $p=0.181$) however, the direction of association is positive. Moreover, risk committee does not mediate the association between board structure and default risk at a 5% level of significance; however, the direction of association is positive ($\beta=0.000$, $t=0.005$, $p=0.996$). Furthermore, risk committee negatively and insignificantly mediates the association between Shariah governance and default risk at a 5% significance level; however, this association is significant at 10% significance ($\beta=-0.037$, $t=1.924$, $p=0.054$). The findings of the mediation analysis are reported in Table 7.

Table 7: Mediation Analysis

	Coeff.	SD	T-Values	P-Values
Ownership Structure -> Risk Committee -> Default Risk	0.019	0.014	1.339	0.181
Board Structure -> Risk Committee -> Default Risk	0.000	0.010	0.005	0.996
Shariah Governance -> Risk Committee -> Default Risk	-0.037	0.019	1.924	0.054

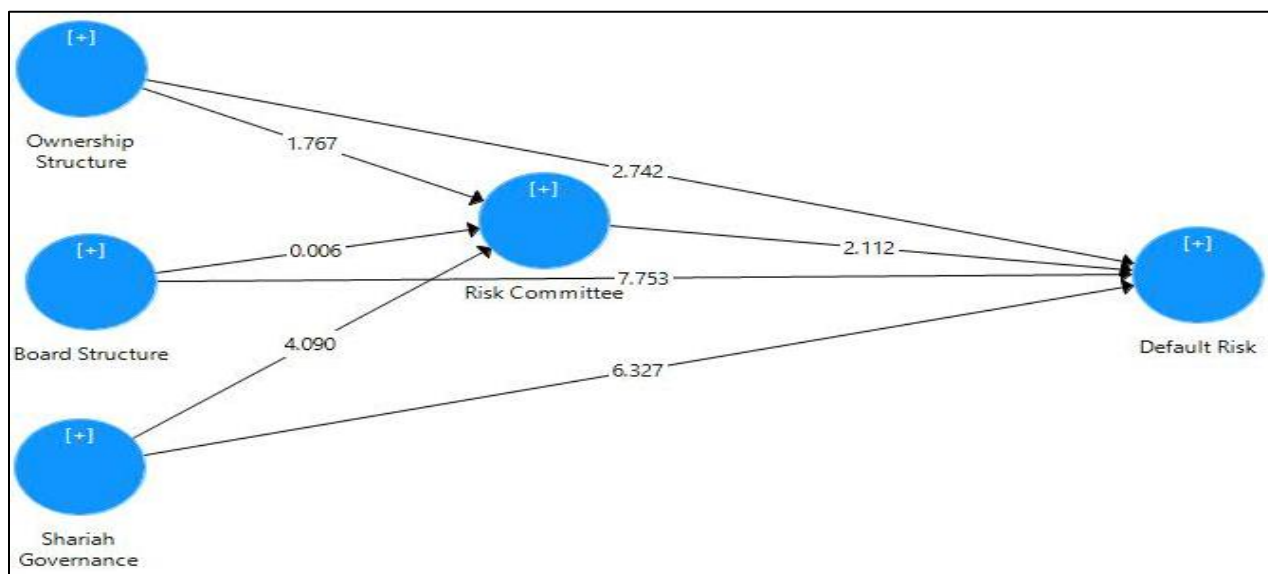


Figure 3: Assessment of Structural

5. CONCLUSION AND POLICY IMPLICATIONS

The recent financial crises, corporate scandals, the complexity of the banking industry's financial services, and the growth rate of Islamic banking are steeply increasing in developed and developing economies like Pakistan (Islamic Banking Bulletin, October - December 2020). The present study explained the theoretical framework under the agency theory and theory of Shariah compliance. The present study considered the two corporate governance indicators, ownership structure (Blockholder ownership and director ownership) and board structure (board size and independent directors on the board) towards the default risk of Islamic banks operating in Pakistan. Furthermore, the present study proposed the role of Shariah governance towards the

default risk of Islamic banks. The present study considered Islamic banks are operating in Pakistan as a unit of analysis in the present study. Moreover, the present study proposed the role of the risk committee as moderating factor between the association of corporate governance indicators, Shariah governance, and default risk of Islamic banks operating in Pakistan.

The present study's findings reveal that ownership structure (directors' ownership and blockholders' ownership) significantly influences Islamic banks' default risk in Pakistan. The results conclude that directors' ownership and blockholders ownership significantly reduce Islamic banks' default risk in Pakistan. In addition, board structure (board size and independence) indicates a positive but insignificant association with risk committees. In contrast, indicate a negative and significant association with the default risk of Islamic banks operating in Pakistan. Shariah governance reveals a positive and significant association with the risk committee and indicates a positive and significant association with the default risk of Islamic banks operating in Pakistan. Moreover, the risk committee suggests a negative association with the default risk of Islamic banks operating in Pakistan.

The findings of the present study will facilitate the managers, shareholders, investors, policymakers, and regulatory authorities in understanding the significance of ownership, board structure, Shariah governance, and the role of risk committee as mediating construct between the ownership, board structure, Shariah governance, and default risk of Islamic banks operating in Pakistan. Investors, regulatory authorities, and policymakers need to consider these constructs' role in assessing Islamic banks' default risk in Pakistan.

Future studies need to consider the role of leverage as the recent literature indicates that leverage significantly influences the association between corporate governance and bank default risk; hence, future studies need to consider the role of leverage. Furthermore, future studies on the proposed model are proposed to test it in different developed and developing economies to validate the model. Future studies also need to consider the role of bank size as the earlier literature indicates that bank size plays a critical role in the default risk. In addition, the CEO financial background and experience are also considered critical factors towards the default risk of banks.

Moreover, most of the rural population in Pakistan is associated with the agriculture sector; the public investment must also be diverted to rural areas. Furthermore, the share of private investment has decreased, so there is a need to encourage investors to invest in the economy. The investment will positively contribute to enhancing the growth of the economy. The government should take some initiatives and start some special programs or projects that support the lower class of the population.

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