The Role of Risk Management in Enhancing Product Development Efficiency in Islamic Banks

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Dr. Farah Yasser[1] Dr. Ramla Sadiq[2]
Sana Sameen Sabir[3] Fatima Nawaz[4]

ABSTRACT

Islamic banking, a rapidly expanding sector, draws a diverse range of stakeholders through its profit and loss sharing and interest-free financing models. With the growth and diversification of Islamic banking, effective risk management has become crucial. The unique nature of Shariah-compliant financial products introduces various risks, including compliance, market, credit, operational, and liquidity risks. Rigorous adherence to Islamic law is essential to maintain client and stakeholder trust. This research investigates how Islamic banks in Pakistan manage these risks in developing new Shariah-based financial products, employing a mixed-method approach. In first phase, content analysis is used for qualitative data collection by using NVivo. In second phase, questionnaire is developed based on the findings of first phase. Data is collected from Islamic banks in Pakistan. The study reveals that Islamic banks have proactive risk management systems, well-trained personnel, and dedicated departments for risk management, effectively addressing risks through strict Shariah compliance and mitigation techniques. The findings suggest that comprehensive risk management practices, such as rigorous credit assessments, benchmark rental rates, and robust internal controls, can enhance the resilience and sustainability of Islamic banks. By implementing these strategies, Islamic banks can navigate the complexities of developing new Shariah-compliant products, fostering innovation and growth in Islamic banking sector.

Keywords: Product development process, Risk Management, Credit Risk, Operational Risk, Market Risk, Liquidity Risk

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[1]University of Management and Technology
Email: farah.yasser@umt.edu.pk

[2]UMT, Lahore–Department of Islamic Banking & Finance
Email: ramla.sadiq@umt.edu.pk

[3]UMT, Lahore – Department of Management
Email: sana.sabir@umt.edu.pk

[4]UMT, Lahore – Department of Information Systems,
Email: fatima.nawaz@umt.edu.pk

1. Introduction

One of the rapidly flourishing sectors worldwide is Islamic banking, which uniquely attracts a broad range of stakeholders. According to Belatik (2021), Islamic banking is gaining popularity not only in Muslim economies but also in non-Muslim economies. Furthermore, expansion of the halal industry has significantly contributed to the growth of Islamic banking institutions. Similarly, Shariah-compliant products and services drive innovation and transformation within the financial industry (Ayub, 2013). This trend is also evident in Pakistan, where the Islamic banking industry has seen substantial growth. Islamic banking's market share of assets and deposits is 19.6 percent and 22.5 percent, respectively, relative to the total banking industry (Islamic Banking Bulletin, 2023). Ahmad and Ihsan (2018) highlight a long-term relationship of economic development with Islamic financial institutions of a country, concluding that the rapid development of Islamic financial institutions will drive Pakistan's economic growth.

With this significant expansion of the Islamic banking industry and the diversification of its product portfolio, effective risk management becomes increasingly crucial (Gustanto et al., 2025). The rapid growth and introduction of a variety of Shariah-compliant financial products introduce various risks, including compliance, market, credit, operational, and liquidity risks. Risk management is significant during product development stages because of the unique nature of Shariah compliance. Islamic banking operates profit and loss sharing basis, asset-backed financial transactions, and interest prohibition, which require rigorous scrutiny and adherence to Islamic law. These principles make risk management particularly important, as non-compliance with Shariah principles can have a negative impact on the trust of stakeholders.

As Islamic banks develop new and innovative products to meet the growing demand, they must ensure that each product adheres strictly to Shariah principles to maintain the trust and confidence of their clients and stakeholders. Effective risk management supports Islamic banks navigate complexities by identifying, assessing, and mitigating potential risks linked with product development. This involves a thorough understanding of the various risks that can arise and implementing strategies to manage these risks effectively. Therefore, the primary goal of this research is to investigate how Islamic banks in Pakistan manage credit, market, operational, and liquidity risks in the development of new Shariah-based financial products. This research aims to provide insights into the risk management practices of Islamic banks in Pakistan and how these practices contribute to the successful development and introduction of new Shariah-compliant financial products.

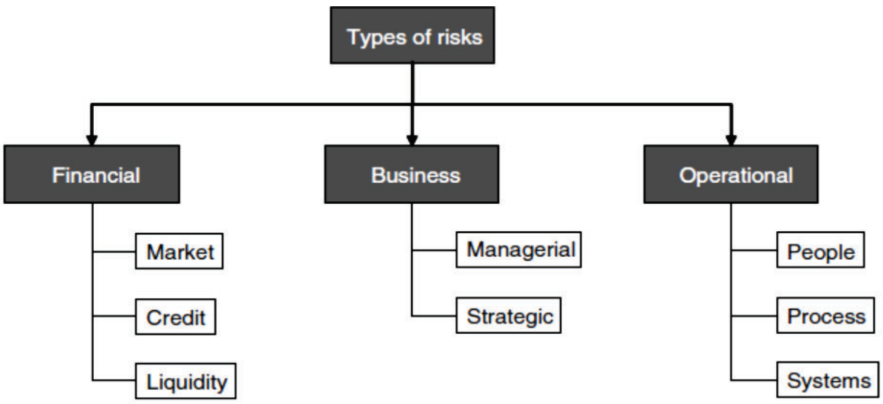
2. Risk Management in Product development of Islamic banks

Islamic banks operate within a unique framework that aligns with Shariah principles, emphasizing ethical finance and social responsibility. This enables them to develop innovative products that not only comply with Islamic regulation but also contribute to the benefits of individuals and society. Such products can include profit-sharing investment accounts, interest-free loans, and socially responsible investment options, all designed to fulfil the demands of the clients while promoting economic and social justice. However, alongside the potential benefits, Islamic banks face several risks. In fact, risk is an inevitable part of the financial institutions.

The victory and failure of any financial institution depend on the efficient management of risk. Effective risk management enables Islamic banks to navigate these complexities by identifying, assessing, and mitigating potential risks associated with new product development. By proactively managing these risks, Islamic banks can prevent legal and reputational damage that could arise from non-compliance or financial losses. Additionally, robust risk management frameworks help banks maintain financial stability and protect their assets and liabilities.

Generally, three types of risk are involved in financial institutions; financial risk, business risk and operational risk (see below Figure 1). Financial risk is the probability of loss of capital or finance in an investment or in a business (Cahyani & Sudirman, 2026). For Financial institutions, financial risk involves the instabilities, divergences and disturbances of the money market. Financial risk encompasses credit risk, market risk, and liquidity risk. Credit risk arises when a borrower or counterparty fails to fulfill its contractual obligations and is unable to repay the outstanding debt according to the agreed terms and conditions (Khalfallah & Dhaoui, 2026). It is considered the most significant risk faced by banks, with approximately 80% of bank failures attributed to credit risk (A. Ali et al., 2018). Liquidity risk refers to the possibility that a financial institution may be unable to meet its short-term financial obligations as they become due. Market risk, on the other hand, is the risk of financial losses resulting from adverse movements in market variables such as profit rates, exchange rates, equity prices, and commodity prices. Effective management of these financial risks is essential for ensuring the stability, profitability, and long-term sustainability of banking institutions (Roziq & Ilma Ahmad, 2024). Market risk is the possibility of losses due to fluctuations in the financial markets; for example market prices, interest rates, foreign exchange rates and equity values (Akkizidis & Khandelwal, 2007). Business risk is the probability that the bank's financial goals will not be achieved and the profit will be declined (Kenton, 2020). Operational risk is the risk of loss due to errors, interruptions or damage caused by people, systems or processes.

Figure 1 - Types of Risk in Financial Institutions



Source: Akkizidis and Khandelwal (2007)

As Islamic financial institutions are different from conventional financial institutions, assimilation of risks are also different but Fikri et al. (2018) argue that application of risk in Islamic banks are identical as in the commercial. In contrast, Akkizidis and Khandelwal (2007) reveal that IFIs' risk orientation have distinct features. Similarly, Sundararajan and Errico (2002) conclude that Islamic banks face more risk as compare to conventional banks due to many reasons. First and foremost, reason is that, interest is prohibited and Islamic financial contracts are based on profit and loss sharing. Secondly, there is a change in the relationship of the parties during the lifespan of the contracts. Thirdly, single project/product can be either financed via profit and loss sharing mode or non-profit and loss sharing mode. And lastly, Shariah compliance can create multiple contracts at a time for single project/product. Therefore, the risks involved are pertinent to the types of contracts (Akkizidis & Khandelwal, 2007).

An exclusive risk related to Islamic banks, is the Shariah risk. Noor et al. (2018) define Shariah risk as the risk of non-compliance of Shariah rules. The non-compliance of Shariah rules may lead a bank to prestige and credibility of the customers and causing the withdrawal of investments. A huge variety of matured products and services are available in conventional banking system and Islamic banks cannot just replicate these products and services without Shariah compliance. With the passage of time, Islamic banking industry is flourishing and launching solutions to compete conventional banking system and to cater modern market requirements. Sometimes, these solution are not fully Shariah compliant and are enticing Shariah risk (Akkizidis & Khandelwal, 2007). However, sheer precautions are required to scrutiny and surveillance of such products in liaison with Shariah compliance department.

Islamic banks in Pakistan are equally exposed to all types of risks as conventional banks (Rafiq & Siddiqui, 2018). Despite this fact, overall risk management, liquidity risk management, risk monitoring and reporting practices of Islamic banks are weak (Rehman et al., 2018). Shafiq and Nasr (2010) reveal that most of the banks in Pakistan face credit risk, liquidity risk, interest risk and foreign exchange risk. However, credit risk is the most crucial and persistent risk for Islamic banks in Pakistan (Rafiq & Siddiqui, 2018; Shafiq & Nasr, 2010). On other hand, Rasheed et al. (2018) specify the importance of operational risk in Islamic banking industry of Pakistan. They argue that IFIs consider only credit risk and market risk as foremost important and neglect operational risk and suggest being meticulous in the implementation of governance and transparency. State bank of Pakistan issued fifteen points guidelines to tackle risk management of Islamic banking institutions (IBIs). These guidelines provide various approaches and procedures to manage all six categories of risk including credit risk, market risk, liquidity risk, equity investment risk, rate of return risk and operational risk exclusively for IBIs. However, Shah (2011) argues that there is a lack of adequate technical and human resources for the risk management under Basel Accord.

3. Methodology

In line with the studies of Kachouie and Sedighadeli (2015); Seyed-Javadin et al. (2015) current article uses a mixed-method approach to collect and evaluate quantitative and qualitative data for its investigation of the product development process. A two steps exploratory sequential mixed-method technique is used to gather and evaluate the data (Creswell & Creswell, 2017).

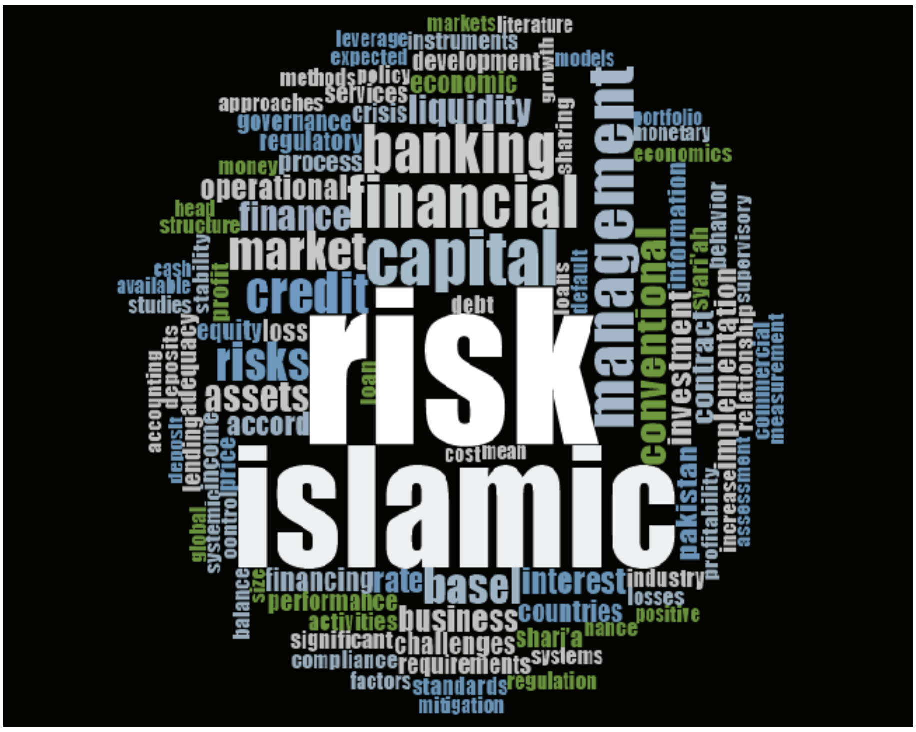
First step is qualitative data collection and analysis by using content analysis. With the help of existing research articles, books, and banks' documents, broad themes are coded at this stage as also used by Abd (2019); Abdul and Uthman (2017); N. M. Ali et al. (2020). NVivo 11 is utilized for content analysis to identify main themes and sub-themes. This in-depth design comprises information from 203 relevant books and research articles related to product development process of Islamic banks. 299 references identified five different sub-themes related to the main theme of risk management while developing the new product from 156 sources as shown in the following table 1:

Table 1: First Phase - Themes Identification

Themes	Sources	References
Risk Management for New Product	43	61
Credit Risk	36	71
Market Risk	20	39
Operational Risk	23	54
Liquidity Risk	18	34
BASEL Accord	16	40

The main theme extracted by NVivo is "risk management" while developing the products. 71 references highlight the importance of credit risk management for new products in Islamic banks. Effective credit risk management helps in designing products that are financially viable and sustainable, reducing the likelihood of defaults and financial losses. 39 references show the effectiveness of market risk management in identifying risk related to market fluctuations and adverse price movements. The importance of operational risk management is discussed by 54 references while developing new products for identification, assessment and mitigation of risks arising from internal processes, systems, human errors, and external events. 34 references shed light on the importance of liquidity risk management. It is pivotal in developing new products as it focuses on ensuring that sufficient funds are available to meet financial obligations associated with product development and ongoing operations (Mikou et al., 2024). 40 references discuss the role of Basel accord in risk management during new product development process. The Basel Accords, particularly Basel II and Basel III, play a significant role in shaping risk management practices when developing new financial products. Also, Figure 2 offers a word cloud-style visual depiction of the data to further aid in comprehending these themes.

Figure 2: Word Cloud - Product Development Process in Islamic Banks



Based on the theme and sub-themes identified in the first phase of data collection, a structured questionnaire is created in the second phase utilizing a quantitative methodology (Haque, 2016; Kimamancha, 2017). Questionnaire includes closed-ended questions. The validity of a questionnaire is important for the research survey. Thus, in order to verify the reliability of the questionnaire for the current study, it was first discussed with a number of pertinent practitioners. All remarks and suggestions are included in the finished questionnaire. The reliability and internal consistency of the questionnaire are also assessed using the Cronbach Alpha test. With a Cronbach alpha test result of 0.966, the current study exhibits a strong reliability. Senior management and Shariah advisors that work directly on product development from Karachi and Lahore fill the questionnaires. Information from 22 full-fledged Islamic banks, Islamic branches, or sub-branches of conventional banks, from which 73 responses were obtained, are included in the analysis.

4. **Results and Discussion**

Results gathered for the present study are based on the mixed-methods approach. From the first phase, effective risk management is identified as the main theme with five sub-themes while developing the new products by Islamic banks in Pakistan. Then, in the second phase, questionnaire is prepared and data is collected according to the themes are identified. Effective risk management ensures that new products align with these principles while mitigating potential financial, operational, and compliance risks. It helps Islamic banks maintain their credibility and trust among stakeholders by preventing breaches of Shariah law, which could lead to financial losses and reputational damage.

Table 2 revealed the practical adherence of the effective risk management by Islamic banks in Pakistan. 62% of respondents always have a proactive risk management system in their bank, 27.8% often have it and 7.6% have it sometimes whereas, 1.3% rarely have it and 1.3% respondents never have it. For the performance of effective and efficient risk management functions, there is a need for competent and well-trained personnel in IBIs. 40.5% of banks always have competent and well-trained staff, 40.5% often have it and 13.9% have it sometimes, whereas 5.1% rarely have it. This may be due to skill shortages, high employee turnover, and inadequate training and professional development opportunities, which can limit the availability and retention of qualified personnel in the banking sector (Salman et al., 2014). Compliance of risk management framework with Shariah rules and principles are also mandatory therefore, 63.3% respondents reveal that risk management framework is always in-line with the Shariah rules, 26.6% often have it and 6.3% have it sometimes, in contrast only 3.8% respondents rarely have it. Survey also reveals that 49.4% of banks' risk management departments always contribute to the new product development process, 35.4% contribute, and 8.9% sometimes contribute, whereas only 6.3% respondents rarely contribute to the product development process. The 6.3% of respondents reporting rare involvement of risk management departments in product development may be due to limited cross-functional integration and inadequate coordination between risk management and product development team (Oehmen et al., 2014).

According to Akkizidis and Khandelwal (2007, p. 31), risk cannot be eradicated but it can be mitigated. According to the survey, the risk management department of the 49.4% banks always consider risk mitigation while developing a product or service, 40% often consider it and 6.3% consider it sometimes, whereas only 3.8% banks rarely consider it as depicted in the table 2. Most of the risk management departments take part in product development process and consider risk mitigation techniques while developing the new product. However, 3.8% of banks that rarely consider risk mitigation during product development may be due to weak risk management culture, insufficient integration of risk management into strategic decision-making, or resource and expertise constraints within the organization (Fraser & Simkins, 2016). These results are similar with the findings of Ahmed (2011); Akkizidis and Khandelwal (2007) as they enlighten the importance of proactive risk management system of the Islamic bank and well trained staff, consideration of Shariah risk and risk mitigation techniques while developing a new product.

Table 2 - Risk Management Framework of the Islamic Banks

Questions		Responses	Frequency	Valid percent	Cumulative percent
For the product development purposes, rank how your bank prefers the followings:					
1	A proactive approach to risk management is implemented in your bank	Always	49	62	62.00
		Often	22	27.8	89.90
		Sometimes	6	7.6	97.50
		Rarely	1	1.3	97.70

		Never	1	1.3	100.00
		Total	79	100	
2	Competent and well-trained staff are available to handle risk management functions.	Always	32	40.5	40.50
		Often	32	40.5	81.00
		Sometimes	11	13.9	94.90
		Rarely	4	5.1	100.00
		Never	0	0	
		Total	79	100	
3	Risk management framework is according to the Shariah framework.	Always	50	63.3	63.30
		Often	21	26.6	89.90
		Sometimes	5	6.3	96.20
		Rarely	3	3.8	100.00
		Never	0	0	
		Total	79	100	
4	Risk management department contributes in new product development process.	Always	39	49.4	49.40
		Often	28	35.4	84.80
		Sometimes	7	8.9	93.70
		Rarely	5	6.3	100.00
		Never	0	0	
		Total	79	100	
5	Risk management department enquires how risks will be mitigated while developing the new product/service.	Always	39	49.4	49.40
		Often	32	40.5	89.90
		Sometimes	5	6.3	96.20
		Rarely	3	3.8	100.00
		Never	0	0	
		Total	79	100	

The first sub-theme identified in the first phase, is the credit risk is the risk that the debtor will fail to repay the debt and to meet its obligations as per agreed terms and conditions (Akkizidis & Khandelwal, 2007, p. 109; Khalfallah & Dhaoui, 2026). Credit risk is the principal risk of the banks (A. Ali et al., 2018). Credit risk encounter due to the financial problems of the individual counterparties, and due to the worst economic conditions (Akkizidis & Khandelwal, 2007). Credit risk default may also arise due to variable rentals which may erode the customer's ability to pay (Kabir et al., 2015). Table 3 depicts the responses of the Islamic bankers for the credit risk management in their banks. 49.4% of respondents always identify and consider credit risk while developing the new product/service, 41.8% often consider it and 7.6% consider it sometimes, whereas only 1.3% of respondents rarely consider it. Service Ijarah financing has different stages of financing therefore customers may default at any stage. Based on the survey, it is revealed that 45.6% of banks are always able to recognize potential credit risk exposure at different stages of financing, 43% bankers often recognize it and 8.9% recognize it sometimes. In contrast, only 2.5% rarely recognize it. The rare recognition of credit risk exposure by 2.5% of banks may reflect weaknesses in credit risk assessment systems and information availability, which can hinder effective risk identification (Kithinji, 2010). The credit guidelines must also be according to the specific features of the Islamic financial contracts. Therefore, 55.7% respondents always consider specific features of Islamic financial contracts while addressing the credit risk management, 34.2% often consider it and 8.9% consider it sometimes, whereas, only 1.3% rarely consider it. Akkizidis and Khandelwal (2007) suggest having guarantees and collaterals to mitigate the risk. 49.4% respondents always mitigate credit risk through guarantees and collaterals, 35.4% often have it and 13.9% have it sometimes, whereas only 1.3% respondents rarely have it. From the table 5.10, it can be noticed that most of the Islamic banks in Pakistan identify and consider credit risk while developing the new product or services. These findings are same as discussed by (A. Ali et al., 2018; Kabir et al., 2015; Qudzianna, 2019) in their studies.

Table 3 - Credit Risk Management for New Product Development

	Questions	Responses	Frequency	Valid percent	Cumulative percent
1	Risk management department identifies and considers Credit risk while developing the new product/service.	Always	39	49.4	49.40
		Often	33	41.8	91.10
		Sometimes	6	7.6	98.70
		Rarely	1	1.3	100.00
		Never	0	0	
		Total	79	100	
2	The bank is proficient in recognizing potential credit risks at various financing phases.	Always	36	45.6	45.60
		Often	34	43	88.60
		Sometimes	7	8.9	97.50
		Rarely	2	2.5	100.00
		Never	0	0	

		Total	79	100	
3	The credit guidelines cover credit risk related to the unique characteristics of Islamic financial contracts	Always	44	55.7	55.70
		Often	27	34.2	89.90
		Sometimes	7	8.9	98.70
		Rarely	1	1.3	100.00
		Never	0	0	
		Total	79	100	
4	Your bank mitigates credit risk exposure through guarantees and collaterals.	Always	39	49.4	49.40
		Often	28	35.4	84.80
		Sometimes	11	13.9	98.70
		Rarely	1	1.3	100.00
		Never	0	0	
		Total	79	100	

Wahyudi et al. (2015, p. 223) define market risk as the risk that causes losses in financial institutions due to adverse market price movements. There are four types of market risk that are exposed to Islamic financial instruments namely; rate of return (or markup risk), commodity risk, foreign exchange (FX) rate risks and equity price risk (Akkizidis & Khandelwal, 2007, p. 149). The rate of return or markup risks are the risk related to market inflation and interest rates. Though Islamic financial contracts are interest free, practically Islamic banks use market interest rates as a benchmark in pricing their products and services (Zainol & Kassim, 2012). This risk can be mitigated through floated benchmarked rental rate permissible with a floor and a cap (Ayub, 2013, p. 300). Based on the survey, the following table 4 shows the identification and consideration of market risk by the risk management department while developing the new product and service. 44.3% of respondents always consider market risks, 40.5% respondents often consider them, and 15.2% respondents consider it sometimes. Similarly, 53.2% respondents always have a sensitive and responsive risk management system to the adverse price movements in the market, 30.4% often have it and 16.5% have it sometimes. These results are similar with the conclusion of Wahyudi et al. (2015); Zainol and Kassim (2012).

Table 4 - Market Risk Management for New Product Development

	Questions	Responses	Frequency	Valid percent	Cumulative percent
1		Always	35	44.3	44.30
		Often	32	40.5	84.80

	Risk management department identifies and considers Market risk while developing the new product/service.	Sometimes	12	15.2	100.00
		Rarely	0	0	
		Never	0	0	
		Total	79	100	
2	Risk management system of the bank is responsive and sensitive to the adverse price movements in the market.	Always	42	53.2	53.20
		Often	24	30.4	83.50
		Sometimes	13	16.5	100.00
		Rarely	0	0	
		Never	0	0	
		Total	79	100	

Wahyudi et al. (2015, p. 249) elaborate liquidity risk as when a bank urgently needs liquid assets but can only obtain them with difficulty and at an excessive cost, it is experiencing liquidity risk. Akkizidis and Khandelwal (2007, p. 71) explain that the use of various Islamic financial products exposes the bank to credit, operational, and market risks, which in turn lead to liquidity risk at different stages. To reduce liquidity risk, it is essential to monitor and manage the underlying causes stemming from these other risks.

Table 5 presents the liquidity risk management practices adopted by the risk management departments of Islamic banks. The findings indicate that liquidity risk is given considerable attention during the development of new products and services, with 48.1% of respondents reporting that they always identify and consider liquidity risk, 36.7% often consider it, and 13.9% consider it sometimes, while only 1.3% rarely take it into account. The results further reveal that regular examination of assets and liabilities is a common practice among Islamic banks to maintain an appropriate balance between fund mobilization, profitability, and risk exposure. Specifically, 45.6% of respondents stated that they always examine their assets and liabilities, 38.0% do so often, and 15.2% sometimes, whereas only 1.3% rarely undertake such examinations.

Moreover, maintaining sufficient alternatives and an appropriate mix of Shariah-compliant funding sources is recognized as an important mechanism for mitigating liquidity risk. In this regard, 48.1% of respondents reported that they always ensure the availability of such funding alternatives, 38.0% often ensure it, and 11.4% sometimes ensure it, while only 2.5% rarely do so. The rare practice reported by 2.5% of respondents may be attributed to the limited availability of Shariah-compliant liquidity instruments and the underdeveloped Islamic money market infrastructure (Ahmed, 2015). Overall, the findings suggest that Islamic banks place significant emphasis on liquidity risk management through proactive risk assessment, continuous monitoring of assets and liabilities, and the maintenance of diversified Shariah-compliant funding sources. These results are consistent with the findings of Akkizidis and Khandelwal (2007); Shafiq and Nasr (2010); Wahyudi et al. (2015) who also highlighted the standing of effective liquidity risk management practices.

Table ***Error! No text of specified style in document.*** *- Liquidity Risk Management for Islamic Banks*

	Questions	Responses	Frequency	Valid percent	Cumulative percent
1	Risk management department identifies and considers Liquidity risk while developing the new product/service.	Always	38	48.1	48.10
		Often	29	36.7	84.80
		Sometimes	11	13.9	98.70
		Rarely	1	1.3	100.00
		Never	0	0	
		Total	79	100	
2	The bank regularly reviews all its assets and liabilities to maintain a balanced approach between fund collection and deployment, considering yield and risk exposure.	Always	36	45.6	45.60
		Often	30	38	83.50
		Sometimes	12	15.2	98.70
		Rarely	1	1.3	100.00
		Never	0	0	
		Total	79	100	
3	The bank ensures that its liquidity risk aligns with its ability to access adequate Shariah-compliant funds to mitigate risks.	Always	38	48.1	48.10
		Often	30	38	86.10
		Sometimes	9	11.4	97.50
		Rarely	2	2.5	100.00
		Never	0	0	
		Total	79	100	

Operational Risk management as defined by Akkizidis and Khandelwal (2007, p. 182), is the risk of failures in their internal controls involving processes, people and systems including losses due to Shariah non- compliance and fiduciary obligations . Akkizidis and Khandelwal (2007, p. 194) further indicate that people, policies/transactions and internal and external events are the main operational risks. Risk of loss by people may be intentional (frauds or misdeeds) and unintentional (errors). For example, in case of service Ijarah, incompetent and inexperienced employees may not be aware of student assessment procedures and credit approval processes. Risk of people can be mitigated through selection of trained or experienced employees, segregation of duties, internal supervision, and training of employees. Moreover, risk of loss by processes/transactions involves failure in collateral management, incomplete documentation and inaccurate valuations, markup or rentals. External events include credit fraud by students by providing fake job letters or business information. This risk can be mitigated by planning of scenario based collateral evaluation procedures, checklist of documents of all parties, and strict adherence of strategies and policies for profitability of the contract. Banks should also define internal control procedures that are aligned with Shariah principles. According to Wahyudi et al. (2015, p. 149), Shariah non-compliance risk can be mitigated when all the transactions and product/services are fully in compliance with Shariah principles. Fikri et al. (2018) recommend imposing administrative penalties to employees for non-compliance of policies and procedures of the banks.

Table 6 shows the responses of the Islamic bankers about the operational risk management in their banks. The risk management department of the 44.3% respondents always identifies and consider operational risk while developing a new product/service, 41.8% often consider it and 10.1% consider it sometimes. In contrast, 2.5% rarely consider it and 1.3% never consider it. The 2.5% who rarely and 1.3% who never consider operational risk during new product/service development may reflect weak risk management frameworks, inadequate risk awareness, insufficient staff expertise, or limited integration of operational risk management into the product development process (Abu Hussain & Al-Ajmi, 2012; Banking Supervision, 2011). For operation risk analysis, an effective identification and evaluation system is must. This system identifies the losses that occur due to failures in internal controls involving processes, people, policies, technologies and systems. Survey shows that 39.2% of banks always have such effective identification and evaluation system, 45.6% banks have it often and 13.9% have it sometimes, whereas only 1.3% of respondents never have it. Hence, most of the Islamic banks in Pakistan identify and consider operational risk while developing the new product and have efficient internal controls for processes, people, policies, technologies and systems. These results are similar with the findings of (Akkizidis & Khandelwal, 2007; Fikri et al., 2018; Qudzianna, 2019; Shafique et al., 2013).

Table 6 - Operational Risk for New Product Development

	Questions	Responses	Frequency	Valid percent	Cumulative percent
1	Risk management department identifies and considers operational risk while developing the new product/service.	Always	35	44.3	44.30
		Often	33	41.8	86.10
		Sometimes	8	10.1	96.20
		Rarely	2	2.5	98.70
		Never	1	1.3	100.00

		Total	79	100	
2	Your bank has an effective identification and evaluation system of operational risks analysis; that is, the identification of losses occurs inefficient internal controls encompassing processes, people, policies, technologies and systems.	Always	31	39.2	39.20
		Often	36	45.6	84.80
		Sometimes	11	13.9	98.70
		Rarely	0	0	100.00
		Never	1	1.3	
		Total	79	100	

State Bank of Pakistan (2008) has provided guidelines to various approaches and procedures to manage all six categories of risk including credit risk, market risk, liquidity risk, equity investment risk, rate of return risk and operational risk exclusively for IBIs. However, Shah (2011) argues that there is a lack of adequate technical and human resources for the risk management under Basel Accord. Based on the survey, the following table 7 depicts the implementation of Basel guidelines by the Islamic banks of Pakistan. 38 percent of banks always have inclination towards implementation of advanced approaches of the Basel Accord II and III for an adequate risk management system, 45.6 percent often have it, and 16.5 percent have it sometimes. Risk management department of 44.3 percent of banks always adopt Basel accord, 39.2 percent often adopt and 13.9 percent adopt it sometimes, whereas only 2.5 percent rarely adopt it. 45.6 percent of bankers are always using standardized approaches for measuring the credit, market and operational risks, 41.8 percent often use it, and 12.7 percent use it sometimes. 40.5 percent respondents always use standardized risk mitigation techniques as per the Basel accord, 44.3 percent often use it, and 15.2 percent use it sometimes. 43 percent of banks always comply with the disclosure requirements of the Basel accord, 43 percent often comply and 13.9 percent comply with it sometimes. These results are similar with the findings of (Ahmed, 2011; Akkizidis & Khandelwal, 2007; Shah, 2011; State Bank of Pakistan, 2008; Wahyudi et al., 2015).

Table 7 - Basel Accord and Islamic Banking Institutions in Pakistan:

	Questions	Responses	Frequency	Valid percent	Cumulative percent
1	Your bank strongly favors implementing advanced approaches under Basel Accord II & III to ensure a robust risk management system.	Always	30	38	38.00
		Often	36	45.6	83.50
		Sometimes	13	16.5	100.00
		Rarely	0	0	
		Never	0	0	
		Total	79	100	

2	Risk management department of your bank is highly functional in adopting Basel Accord.	Always	35	44.3	44.30
		Often	31	39.2	83.50
		Sometimes	11	13.9	97.50
		Rarely	2	2.5	100.00
		Never	0	0	
		Total	79	100	
3	Your bank is using Standardized approaches for measuring the credit, market and operational risks.	Always	36	45.6	45.60
		Often	33	41.8	87.30
		Sometimes	10	12.7	100.00
		Rarely	0	0	
		Never	0	0	
		Total	79	100	
4	Your bank is using standardized risk mitigation techniques as per the Basel Accord.	Always	32	40.5	40.50
		Often	35	44.3	84.80
		Sometimes	12	15.2	100.00
		Rarely	0	0	
		Never	0	0	
		Total	79	100	
5	Your bank adequately meets the disclosure requirements of the Basel Accord	Always	34	43	43.00
		Often	34	43	86.10
		Sometimes	11	13.9	100.00
		Rarely	0	0	
		Never	0	0	
		Total	79	100	

5. Conclusion and Policy Implications

As Islamic banks innovate to meet growing demand, they must ensure strict adherence to Shariah principles to maintain client and stakeholder trust. Effective risk management is essential in this process, involving the identification, assessment, and mitigation of potential risks. This research investigates how Islamic banks in Pakistan manage credit, market, operational, and liquidity risks in developing new Shariah-based financial products. The study aims to provide insights into these risk management practices and their role in the successful introduction of new Shariah-compliant products. A mixed-method approach was utilized for data analysis to accomplish this. Using Nvivo, facts and numbers are carefully studied in the preliminary qualitative stage, detecting the main theme and five sub themes related to risk management while developing new products. The questionnaire was created, and responses were analyzed in the second quantitative phase.

This study provides a comprehensive analysis of the risk management practices used by Islamic banks in Pakistan for developing new Shariah-compliant financial products. It highlights the key risks faced by these banks—credit, market, operational, and liquidity risks—and the strategies employed to mitigate them. The findings reveal that most Islamic banks have proactive risk management systems, well-trained and competent personnel, and dedicated risk management departments involved in all stages of product development. These banks effectively address risks arising from financial problems of individuals, poor economic conditions, adverse price movements, fund shortages, and weak internal controls by strictly adhering to Shariah compliance and utilizing effective mitigation techniques.

This research also offers practical insights into effective risk management practices that can enhance the resilience and sustainability of Islamic banks. The study suggests that a rigorous credit assessment process, along with the imposition of penalties for delayed payments and the inclusion of guarantees and collaterals, can mitigate credit risk. To address market risk, the introduction of benchmark rental rates with defined floors and caps is recommended. Additionally, comprehensive liquidity risk management requires a holistic approach that includes managing other types of risks. Operational risk can be reduced through robust internal controls, employee education on Islamic finance, strict adherence to policy manuals, and thorough documentation and collateral evaluation processes. By implementing these strategies, Islamic banks can better navigate the complexities of developing new Shariah-compliant products, thereby fostering innovation and growth in the Islamic finance sector.

The findings of this research contribute significantly to the existing literature on risk management in Islamic banking. By detailing the specific risks and mitigation techniques involved in the development of new financial products, this study provides a valuable reference for future research in this area. It underscores the need for Islamic banks to continuously refine their risk management strategies to address emerging challenges and ensure compliance with both Shariah principles and regulatory guidelines issued by the State Bank of Pakistan and the Basel Committee on Banking Supervision. Moreover, the insights gained from this research can aid Islamic banks in Pakistan and potentially in other regions, in strengthening their risk management frameworks, ensuring compliance with Shariah principles, and successfully developing innovative financial products that meet the evolving needs of their clients.

6. Limitations and Future Research Directions

This study has few limitations. First, the research is confined to Islamic banks operating in Pakistan; therefore, the findings may not be fully generalizable to Islamic banking institutions in other countries with different regulatory and institutional environments. Second, the study relies on questionnaire-based responses from banking professionals, which may be subject to respondent bias and personal perceptions. Third, the qualitative phase was based on thematic coding of existing literature rather than primary qualitative data collected through interviews or focus groups. Finally, the study primarily employs descriptive analysis and focuses on identifying prevailing risk management practices rather than examining causal relationships among variables.

Future research may extend this study by conducting cross-country comparisons of risk management practices in Islamic banks operating under different regulatory frameworks. Researchers may also collect primary qualitative data through interviews with risk managers, Shariah scholars, and product development specialists to gain deeper insights into the challenges associated with developing Shariah-compliant financial products. Furthermore, future studies may employ advanced statistical techniques, such as structural equation modeling (SEM), regression analysis, or factor analysis, to examine the impact of specific risk management practices on product development success, innovation, and organizational performance. Longitudinal studies may also be undertaken to assess how risk management practices evolve over time in response to regulatory changes, technological advancements, and emerging risks in the Islamic banking industry.

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