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ACADEMIC PAPER

Pool Management Practices of Islamic Banks and Their Impact on Profitability

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ABSTRACT

The purpose of this paper aims to investigate the impact of pool management practices of Islamic banks in terms of multiple pool management, liquidity management practices, use of alternative contracts, risk mitigation, and input of alternative functions along with its impact on the profitability of Pakistan through moderating function of profit smoothening. This study is primary in nature and has selected a quantitative research approach based on a review of the literature. The study has selected an explanatory research procedure to examine the impact of selected independent variables on the profitability of Islamic banks in Pakistan through moderating input of profit smoothening. The targeted population of the current study is Islamic banking professionals working in different departments of Islamic banks. The current study has selected multi-variate regression techniques for current study along with descriptive statistics and Pearson correlation. The relative impact of the use of alternative contracts was found higher on the profitability of Islamic banks followed by multiple pool management, portfolio risk, and profit smoothening in the case of Islamic banks in Pakistan.

KEYWORDS

Pool Management, Profitability, Islamic banking, Depositor

1. INTRODUCTION

Islamic banking comprises a set of financial activities that adheres to Islamic principles i.e., Shariah. Islamic banking is not solely based on the motive of profit but also on the fulfillment of socio-economic objectives. The sole objective of conventional structure is based on the credibility of the entrepreneur while in Islamic banks it is based on a profit and loss sharing mechanism. An empirical investigation was performed to assess the operational aspects of the profit and loss sharing mechanism, but the study identified the need to investigate the concept of innovation in the profit and loss sharing mechanism and profitability of Islamic banks (Rizwan, 2021). Another study investigated risk management practices in the profit and loss sharing model of Islamic banks and explained the active use of Musharaka and Mudarabah-based contracts on the liability side to channel the Islamic banking model but also highlighted the need for empirical investigation to input the literature with alternative options others than Musharaka and Mudarabah in pool's risk management practice and come up with additional investigations (Rizkiah, 2018).

Another study investigated the scope of earning mana. cement practices in pool management function i.e., profit distribution management practices of Islamic banks. The study observed an active role of

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income smoothening in the determination of relatively harmonized returns to reference business-to-business inflows and outflows. The study revealed the potential to come up by further consideration of external factors like macroeconomic factors and bank-specific characteristics (Rashid & Ghazi, 2021).

In light of the above investigations, the study found space to examine pool management practices more elaborately focusing on the financial implications of multiple pool management and profit smoothening on pool management in the case of Islamic banks operating in Pakistan (Rashid & Ghazi, 2021). This study also takes into account liquidity management aspects of pool management along with the use of different Shariah contracts in this perspective through mitigation of portfolio risk and active input of treasury function overall in the determination of the current level of pool management practices in Pakistan. This space has been found missing in the literature in the case of Pakistan and lay found for a further in-depth investigation by researchers.

Pool management practices are of core focus for Islamic banks not only to determine the profitability of investors but the determination of their sustainability. There are several factors responsible for the determination of pool management practices among Islamic banks. Islamic banking firms observed a deficiency of liquidity management tools and techniques. There are two different aspects of liquidity management in Islamic banks i.e., surplus liquidity and liquidity crunch. Although occurrences differ but both are found in existing pool management practices of pool management. Anyhow, studies show that liquidity management is an issue in the Islamic banking industry while functional practices are found missing to manage risk mitigation and attention. Banking Industries commonly use Sukuk for liquidity risk management in Pakistan.

This study indicates that the lack of alternative practices in pool management and significant risk to the pool and the low level of the Islamic market collectively observed prime risk to Islamic banks and create space for further development of advanced Islamic banking pool practices. This study also shows the importance of pool management practices in finding Islamic banks, and the level of competency compared to conventional banks and come up with useful investigation to divert attention to extend literature-based input on the selected area through recommendation for the banking industry (Mujaddidi, 2017). The objective of the study is to investigate the financial implications of multiple pool management, liquidity management, alternative contracts i.e., Mudarabah and Musharakah, asset diversification, the role of portfolio risk and treasury function through moderating input of profit smoothening on the profitability of Islamic banks in Pakistan.

2. LITERATURE REVIEW

This section encloses a discussion on the existing body of literature for a better understanding of Islamic banking practices along with its practical aspects in Pakistan. This section also encloses pool management and its different dimensions. Furthermore, an empirical assessment of existing studies has also been performed for a better understanding of explored relations and their input in the development of a conceptual framework for the study.

2.1. Islamic Banking

Islamic banking or Islamic finance or Shariah-compliant financing are synonyms commonly observed in literature to explain banking and financing activities laid on Shariah principles. Islamic banking and finance are practices application and a sign of the development of an Islamic economy (Sarker, 2005). Commonly used Shariah contracts in Islamic banking includes Mudarabah (Profit and loss sharing based contract), Musharakah (Joint ventures), Ijarah (lease-based contract), Murabahah (cost plus profit-based sale contract), Wakalah (Agency based contract), Diminishing Musharakah (Joint ownership-based contract), Wadiah (Safe-keeping), Salam and Istisna in common (Abdul-Rahman & Nor, 2016). Islam encloses a complete set of values that address all matters of life including political, social, and economic matters. Islamic laws are also known as Shariah i.e., clear path (Ahmed et al., 2018). The present banking system aims to ensure the prohibition of interest, excessive gharar, and equality of distribution of returns among different stakeholders along with sharing of business risk (Shaikh, 2014). Islamic banking system ensures operations of profit and loss sharing mechanisms as

per role and agreed terms through consideration of Shariah principles (Ali, 2013). The return is not guaranteed in the Islamic banking system compared to the conventional banking system but is transparently subjected to banking business operations (Archer & Karim, 2006). The role of depositors in the Islamic banking system is as partners not as a creditor (Askari & Krichene, 2014).

Another important characteristic of the Islamic banking structure is to ensure risk-sharing principles in economic transactions. This results in depositor's partition of burden i.e., other than current account customers, in the Islamic banking structure. This also results in symmetric distribution of risk among depositors. It results in improved economic activities and knowledge inputs (Aysan et al., 2017).

2.2. Islamic Banking in Pakistan

The foundation of the economic and financial system of Pakistan was emphasized by the founder of Pakistan during his speech on 1st July 1948 i.e., a system based on Islamic principles. This defined role of the State Bank of Pakistan with its inauguration. He emphasized the need for a research-based function to integrate Islamic principles into the social and economic life of the people of Pakistan and identified it to achieve a better standard of living (Hassan & Dicle, 2005). Although SBP established research function on the Islamic economic system in the 1950s historic evidence in the 1970s through economy-wide efforts on the elimination of Riba progressed till the 1980s. This results in the development of laws to promote the development of the Islamization process of the economy (Rizwan, 2021). The banking industry was observed by practical initiatives in the 2000s based on market drive approaches. It included:

- Legal permission from the regulator for the establishment of full-fledged Islamic banks in the banking sector of the economy.
- Legal permission for conventional banks to open Islamic banking subsidiaries or window functions or divisions.

SBP, with the growing size of the Islamic banking industry, introduced a strategic plan for 5 years in 2014 i.e., 2014-18. The strategic papers covered the enablement of a policy-based environment, promotion of Shariah-compliant culture and governance function, awareness of the public, and training of banking staff. Those papers also addressed market development options to increase Islamic banking practices within the market (Khaleequzzaman, Mansoori, & Rashid, 2016). SBP is in practice to publish the issuance of Islamic banking bulletins every quarter to update market participants. The latest number shows that the assets of the industry have grown to PKR 4,797 billion while deposit has grown to PKR 3,822 billion by June 2021. There are currently 22 Islamic banking institutions in Pakistan with around 3583 branches while the number of Islamic banking windows counts around 1562 (SBP Islamic Bulletin, 2021).

Particulars	Period			Yearly Growth (YoY) in %			Share in Overall Banking Industry (in %)		
	Jun-20	Mar-21	Jun-21	Jun-20	Mar-21	Jun-21	Jun-20	Mar-21	Jun-21
Assets	3,633	4,389	4,797	21.4	30.6	32.0	15.3	17.0	17.0
Deposits	2,946	3,457	3,822	22.0	28.4	29.7	16.9	18.7	18.7
Number of Islamic Banking Institutions	22	22	22	-	-	-	-	-	-
Number of Branches*	3,274	3,504	3,583	12.4	7.8	9.4	-	-	-
Number of Islamic Banking Windows	1,394	1,595	1,562	3.4	16.0	12.1	-	-	-
** including sub-branches*									
Source: Data submitted by banks under quarterly Reporting Chart of Accounts (RCOA)									

Figure 2.1: Islamic Banking Industry Progress and Market Share Amounts in PKR Billions (Source: Islamic Banking Bulletin, Pakistan)

The region-wise concentration of Islamic banking operations observed by a major chunk of Punjab followed by Sindh, KPK, Baluchistan, AJK, and FATA share of 49.3 percent, 27.4 percent, 12.1 percent, 3.8 percent, 5.2 percent, 1.5 percent, and 0.8 percent respectively. In terms of the number of branches Punjab, Sindh, KPK, Baluchistan, AJK, and FATA were observed with 1766, 982, 432, 136, 186, 52, and 29 branches respectively. It is observed that significant potential other provinces other than Punjab also for Islamic banking practices in Pakistan through potential input of banking strategies to come up with strategic inputs (SBP Islamic Bulletin, 2021).

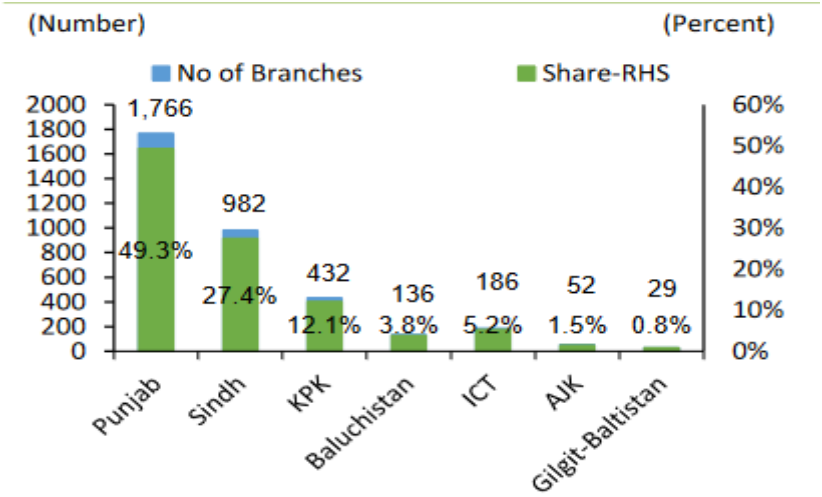

Figure 2.2: Region Wise Branch Network in Pakistan (Source: Pakistan, 2021)

The contract review of banking operations was also observed through an assessment on the part of regulator for banking firms and found a major share of Diminishing Musharakah in the financing portfolio followed by Musharakah, Istisna, Murabahah, Ijarah, and Salam in sequence as mentioned below in the table (Pakistan, 2021).

2.3. Pool Management in Islamic Banks

Mudarabah-based deposit is the major portion of the liabilities side of the bank in their deposit mix. This contract comes up by sharing profit from placement, financing, and investment activities. These activities are funded through depositor's deposits and Islamic banks serve as Mudarib i.e., management functions in this arrangement while depositors serve as Rabb-ul-Mal based on the pre-decided profit-sharing ratio at the time of contract (Sarker, 2005). In case of loss in this arrangement, each depositor must bear the proportion of its investment to the pool in case of non-negligence of the Mudarib. Mudarib is accountable in case of negligence and misconduct to compensate on principal investment i.e., deposit funds to depositors. This pool management structure revealed the correlation of depositor returns to placement, investment, and financing activities of banking firms hence coming up with essentiality and effective management of profit and loss distribution practices among Islamic banking firms. This is observed that the input of well-defined policies, procedures, and standardized functions among Islamic banking firms results in transparent and defined operations (Abdul-Rahman & Nor, 2016). The pool has been defined as a legal structure having distinct risk and reward features. Depositors' funds are either employed in a single or more than one pool that usually gets observed movement of assets between pools based on underlying Shariah-compliant contracts (Ahmed et al., 2018).

2.3.1 Creation of Pool

- It is essential for Islamic banking to create well-defined pool management practices and input their structure with necessary guidelines regarding pool creation and relationship management between pools.
- Commonly pool management practices are based on Mudarabah-based deposits either corporate, individual, or institutional level in nature. Each pool is defined to bring up investment strategies and the definition of risk characteristics of a pool that must be distinguished at each pool level.

- Pool documentation encloses the allocation of different types of collected to a single or different pool.
- Each deposit category is usually assigned with different weightage to rationally manage fund allocations.
- The policy framework of pool management and creation is essential to be approved by the Shariah Advisor, the Board of Directors, and the Islamic Banking Department of the regulatory to ensure standardized practices.

2.3.2 Allocation and Identification of Income & Expense of a Pool

- Management of income and expenses of a pool is done through accounting standards and principles hence coming up with a better comparison of details of different Islamic banking firms.
- There is a distinction between direct and indirect expenses of a pool for an Islamic bank. Direct expenses are charged to the respective pools while indirect expenses, such as the cost of the establishment of a pool, are borne by an Islamic bank working as Mudarib. Examples of direct expenses include Ijarah assets depreciation, cost of sales of inventories, Takaful expenses of assets of the pool, documentation charges, brokerage fees for purchase of securities/ commodities, stamp fees, etc. Direct cost also includes the impairment cost of specific assets of the pool. This can be extended to pool management practices of similar nature.
- Provisioning i.e., general, or specific on non-performing financing is borne by Mudarib while the loss on the sale of investment or write-off is charged to the respective pool while losses due to misconduct or breach or negligence on the part of Islamic bank come on Islamic banking firm as Mudarib.

2.3.3 Allocation of Profit and Loss Between Mudarib and Rabb-ul-Maal

- The sharing of income between depositor and bank based on a pool of investment comes with a respective share in the pool subjected to net income or losses of the pool.
- The computation of profit or loss on the Mudarabah funds is done on average balances of deposit accounts for the period of computation and then distributed.

2.3.4 Weightage & Profit-Sharing Ratios

- The decision on the profit-sharing ratio, for risk mitigation, is made 3 days before the beginning of the period concerned between the Depositor and the bank.
- The Mudarib share is subjected to only depositors' share of income from the pool's net income that shall not exceed the percentage share of 50 percent of distributable profit.
- There is a parameterized definition of the weightage of a pool under a pool management mechanism for different categories of deposits associated with a pool.
- Weightage announcement requires 3 days before intimation before the start of the period weights are associated with and does not apply change during the period.
- The harmonization of weights is done through variance not a maximum of 3 references to the saving account.
- To maintain a well-defined pool of funds pre-mature matrix has been defined in pool management practices to come up with effective management of funds.
- There is no recall of distributed profit in case of early termination of the customer to build up the customer's confidence.

2.3.5 Profit Smoothening Practices in Pool Management

- Risk mitigation is very important to pool management practices hence the creation of a profit equalization reserve is very important to form pool net income to come up with reserve. Net income has described the deduction of direct expenses from gross income and losses if any.
- The contribution per month to PER reserve is limited to 2 percent of net income and defined maximum accumulated limit of 30 percent of an Islamic bank's equity or funds of Islamic bank's division of a traditional bank. Half of this reserve is reflected as a liability to the bank and half as a reserve in the bank's book.

- The investment of PER funds is done to Shariah compliance SLR eligible securities and earnings in the form of returns of those funds that come as part of PER account.
- The maximum earning is only 10 percent of PER funds earned a profit for the bank.
- The utilization of PER is done i.e., either fully or partially improvement of returns to depositors in the period when the rate is below market expectations, and clauses about PER are made part of the account opening form.

2.3.6 Transfer from Mudari'sb Share in Pool Management

- The bank has the option to surrender its 60 percent income as Hiba to meet market expectations from Mudarib's share. This is only considered for-profit smoothening earned from the respective pool. This often happens in case the bank is not in the capacity to meet the requirement from its PER to depositors.
- The distribution of Hiba is across the board to all depositors of the pool instead of to any specific one.
- Distribution of Hiba is made explicit and requires Shariah Advisor approval.

2.3.7 Investment Risk Reserve in Pool Management

- To mitigate probable large write-offs or losses due to the sale of pool investments, an investment risk reserve (IRR) is created to come up with a rationalization of market and credit risk. Primarily, this reserve is to safeguard Rabb-ul-Maal from future investment losses.
- The contribution to IRR is 1 percent of the profit available for distribution to pool depositors after the deduction of Mudarib's share for each period.
- IRR is reflected as a liability in the bank's book and only invested in Shariah-compliant SLR-eligible securities. The return of this fund gets credited to the IRR account.
- Mudarib is not eligible for more than 10 percent of the profit earned by IRR funds.
- IRR funds will be available for losses to pool and its relevant clauses are made part of account opening documents.

2.3.8 Pool Management Independent Review and Disclosure

- The verification and audit of the pool management function are jointly done by Shariah Advisor and External auditor.
- It is necessary to disclose the number and nature of pools maintained by Islamic banks in its notes with key attributes, risk, and reward-based characteristics.
- It is also essential to mention sectors or avenues invested from Mudarabah-based deposits applied in investment activities.

2.4. Empirical Review

A study investigated the issues of profitability of Islamic banks and come up with evidence of the occurrence of single or multiple pools to optimize returns to investors or depositors (Archer & Karim, 2006). Another study also examined the pool management framework for current practices of profit and loss distribution through an existing set of issues, progression, and implications. The study observed significant input from several pools through the ability to meet up customers' profit expectations concerning the size of the investment pool (Zainuldin & Lui, 2020). A similar investigation also examined the assessment of liquidity and profitability management of Islamic banks to rational profitability actions and understand its implications (Vishwanath & Azmi, 2009). Further another study studied the growth of Islamic banks and the use of pool management practices. The study came up with an understanding of the role of special pool management in the optimization of return to depositors (Ahmad, Humayoun, & ul Hassan, 2010). Another study examined the performance of Islamic banks in Pakistan and realized supplement input of multiple pool management functions in the determination of expected profit for customers and bringing up flexibilities in banking operations (Sole, 2007).

In addition, a study on the working pattern of Islamic banking and pool management practices observed the agency function of banking firms along with ensuring the best profitable venues for their customers.

One of the objectives of profit optimization is found by challenges in terms of both internal and external hence realized through the creation of alternative pools to bring up with a better allocation of assets and liabilities (Siddiqui & Yousaf, 2020). A study also described resource pool management practices for Islamic banks and found implications of special pool management applications (Siddiqui & tir Razia, 2020). Another empirical study emphasized the identification, measurement, control, and monitoring of assets and liabilities of Islamic pools and the management of alternative pools to come up with a better allocation of resources. There is significant input of financial instruments in pool management practices to come up with profitable returns to depositors (Siddiqui & tir Razia, 2020). A study also examined the assessment of the financial environment of Islamic banks and come up with value addition in the determination of profit management practices. The study found the role of alternative pool management practices in the determination of profit management (Siddiqui, 2007).

H1: *There is a direct impact of multiple pool management in pool management practices on the profitability of Islamic banks in Pakistan.*
H2: *There is an indirect impact of multiple pool management in pool management practices on the profitability of Islamic banks in Pakistan.*

A study observed that practicing two different types of income smoothening practices i.e., artificial smoothening and real smoothening. Real smoothening requires production and speculation functions while artificial smoothening comes up through execution through accounting practices (Saringat, Haron, & Tahir, 2013).

Another study also described the framework of profit management practices and their implication in determining of explaining risk mitigation and harmonization of profit distribution practices to come up with stable returns to depositors and confidence of depositors in banking operations to bring up collective input to the bank's profitability. Profit smoothening found its role in the determination of the rate of returns to customers along with its input in the determination of business to Islamic banks (Önal, 2013).

Another research investigation observed the limitation of liquidity management for Islamic banks in the form of the absence of an Islamic inter-bank market, and the absence of Shariah complaint alternatives i.e., both at the inter-bank and central bank level (Mohammed, Tarique, & Islam, 2015). In addition, Islam also found limitations in the form of a limited Sukuk market for market participants. This is also a limitation in the form of the restricted discount window for Islamic banking exclusively at the central bank level (Majid & Rais, 2003). A study also explained the role of market structure and the role of regulators in the determination of liquidity management practices. In addition, the concentration or share of Islamic banking firms also found a role in exposure to liquidity management practices. Islamic banks with limitations of liquidity flexibility observed their role in the determination of profitability of Islamic banks and return to depositors (Khaleequzzaman et al., 2016). A study also explored different dimensions of Islamic liquidity management practices to understand the prospects and observed the number of challenges in the form of short-term liquidity management issues. The study also observed the potential input of liquidity management function in the determination of return on pooled funds for an Islamic bank to come up with profitable returns to its customers along with its role in the determination of banking profitability (Das & Bhowal, 2013).

H3: *There is a direct impact of liquidity management in pool management practices on the profitability of Islamic banks in Pakistan.*
H4: *There is an indirect impact of liquidity management in pool management practices on the profitability of Islamic banks in Pakistan.*

A study explained that deposit pool management functions in Pakistan and observed different fundraising functions and the use of multiple contracts in Islamic banking firms bring up profit optimization. The study observed that significant correlation between pool management-based alternative functions and profitability management of banking functions (Ismail, Jan, & Ullah, 2023).

Another study also examined the use of alternative contracts in banking practices and realized the role of different Shariah based on contracts in determining Islamic banking firms' profitability. The study observed that the use of alternative contracts such as Musharakah-based, Mudarabah based and Wakalah bil Istithmar based often comes up with diversified modes to invest funds of the depositor and come up with better-expected returns not only sound profitability of Islamic banking firms (Ayub & Mohamed Ibrahim, 2013).

3. RESEARCH METHODOLOGY

This section encloses a discussion on the research approach, nature of research, research procedures, targeted population, sampling technique, sample size, and data collection method of the current study. This study also considers designing research instruments for data collection purposes along with a definition of the research model and selection of statistical techniques.

This study has selected a quantitative research approach based on a review of the literature. The quantitative research approach has found its positive input in testing constructed hypotheses. A quantitative approach is feasible to apply through a flexible range of statistical tests. A quantitative approach is also useful to bring up an explanation of empirical relations and its input in the explanation of relations application of statistical techniques. A quantitative approach is very useful to bring up through the exploration of useful relationships to understand the nature of the relationship along with its strength. An important aspect of a quantitative approach is to bring up the value-added foundation for future research prospects for other researchers. In addition, the quantitative approach also inputs value-added input for practitioners to understand existing relations.

This research study is primary in nature. This study aims to understand market professional responses to understand the impact of selected variables on the profit management process of Islamic banks. The primary research has found it very useful to get through a set of responses in understanding basic information to value add to the analysis part of the study. Furthermore, the selection of primary data has also been done to take up firsthand information as there is no valid and published information on selected variables for investigations. The primary information also inputs the investigation by the latest perception of market practitioners along with its role in the determination of market responsiveness using pool management practices in Islamic banking structure.

The study has selected an explanatory research procedure to examine the impact of multiple pool management, profit smoothening, use of alternative contracts, assets diversification, treasury function, liquidity practices, and portfolio risk on Islamic banks' profitability. This procedure has found its input in the determination of the nature and strength of the relation of variables along with the selection of relations either significant or non-significant. Furthermore, the method helps to get through empirical output in testing constructed hypotheses. All relations are tested at a 5 percent level of significance.

The target population of the current study is Islamic banking professionals working in the finance department of different Islamic banks. Those practitioners from different Islamic banks have different levels of experience and input in conducting, through responses, this investigation. The targeted population size estimated for the study is 1000.

This study has selected a non-probabilistic sampling technique. Among non-probabilistic sampling techniques, convenience sampling has been selected. Convenience sampling is very useful to get through the desired number of responses in a limited period to ensure the accomplishment of the study. This is also a very useful method of response collection for new researchers to get through enough responses to perform the analysis without being confronted with any hindrance.

This study has selected a sample size of around 146 for the presented study. Based on the estimation the targeted population size of pool management professionals is estimated to be around 1000 in the industry. The sample size computed for the study is around 146 using the G-Power tool.

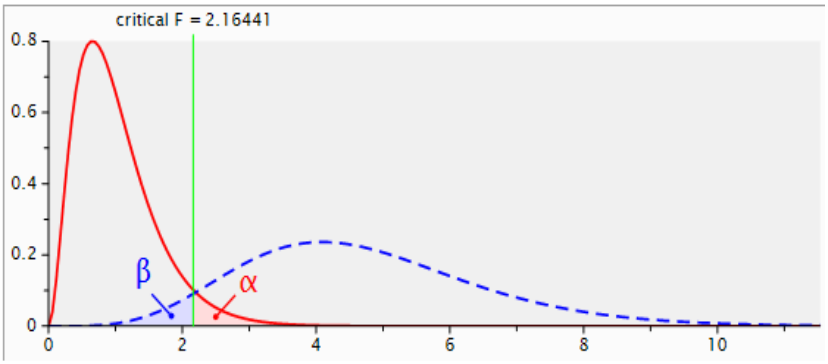

Figure 3.1: Sampling Size Extraction

The data collection method adopted further in the present investigation is surveyed in nature. In th, is study google Forms, email communication, social c, connection, and social media have been used to perform the data collection process. The selection of multipotential has been done to come up and get 146 responses in a limited period. The study has selected a questionnaire as a data collection instrument. The questionnaire is built on closed questions. It has enclosed both demographic and study-specific questions. The demographic questions are based on attributes while study-specific questions are based on the Likert scale to the get required number of responses. Each section is inputted with enough questions to address all dimensions.

The research model of the present study is as per below:

$PIB = \beta 0 + \beta 1\ MPM + \beta 2\ PS + \beta 3\ UAC + \beta 4\ AD + \beta 5\ TF + \beta 6\ LP + \beta 7\ PR + \varepsilon$ → equation 1
Were,
MPM = Multiple Pool Management
PS = Profit Smoothening
UAC = Use of Alternative Contract
AD = Assets Diversific0ation
TF = Treasury Function
LP = Liquidity Practices
PR = Portfolio Risk
PIB = Profitability of Islamic bank

The current study has selected multivariate regression techniques i.e., structural equation modeling for the current study using PLS Smart. The significance level selected for the current study is a 5 percent level of significance using F-statistics' p-value. Furthermore, constructed hypotheses are tested at a 5 percent level of significant using t-statistics. In addition, the R-square value is used to test the collective impact of all independent variables on the profitability of all Islamic banks. Furthermore, the study also uses correlation techniques to understand variable relations at a 5 percent level of significance using Pearson correlation. The study used a reliability test i.e., Cronbach's Alpha for the study. The benchmark value for the test is 0.6 which is considered for the study.

Partial Least Square Structural Equation Modeling (PLS-SEM) is commonly used for primary data-based analysis. The usefulness of this approach is to input assessment of complex cause and effect relationships based on path constructed model along with elaboration of the relationship of latent variables. PLS-SEM helps to investigate in an optimum manner the explanatory power of constructed model based on the measurement model and structural model. The input of the measurement model is to come up with an explanation of the parameters of the common factor model. The role of the structural model is to explain the association among latent variables. The PLS-SEM works on an iterative approach to examine the model applicant of multiple or simple linear regression models. The positive input of iteration is to bring up the convergence of the model.

4. RESULTS

This chapter of the research work analyzes the outputs of the software run results to test constructed hypotheses considering developed objectives and research questions using structural equation modeling. In this chapter validity of results is also discussed and findings are summarized to discuss considering previously conducted research studies and justify.

4.1. Descriptive Statistics

The gender-based assessment of the respondents clearly shows that most of the respondents who responded to the study questionnaire were male i.e., around 138 respondents out of 150 while only a low portion of female respondents i.e., 12 out of 150. This shows that majorly the Islamic banking is dominated by male employees as found during the study.

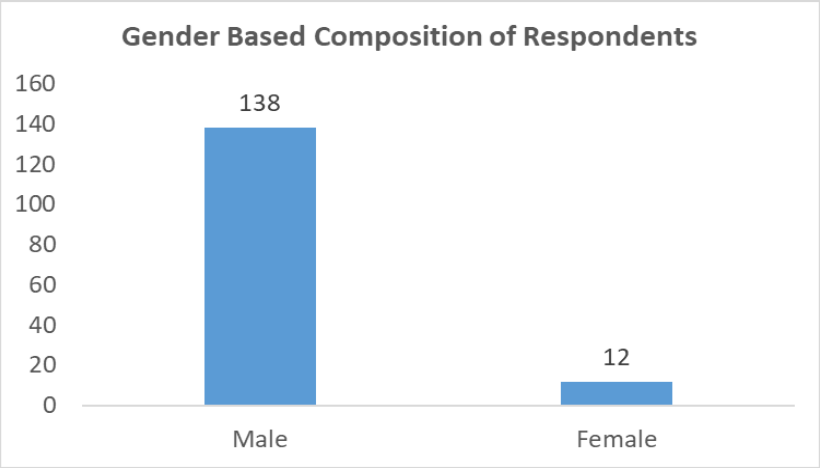

Figure 4.1: Gender-Based Composition of Respondents

Another important demographic dimension of respondents is education found majorly the education level of the respondents having master's i.e., 50 respondents out of 150 followed respondents with education level of M.Phil. i.e., 41 respondents, respondents with education level others may be ACCA, CA and other finance specific specialization i.e., 27 respondents. The share of Ph.D. and Bachelor level of educated respondents observed 16 for each.

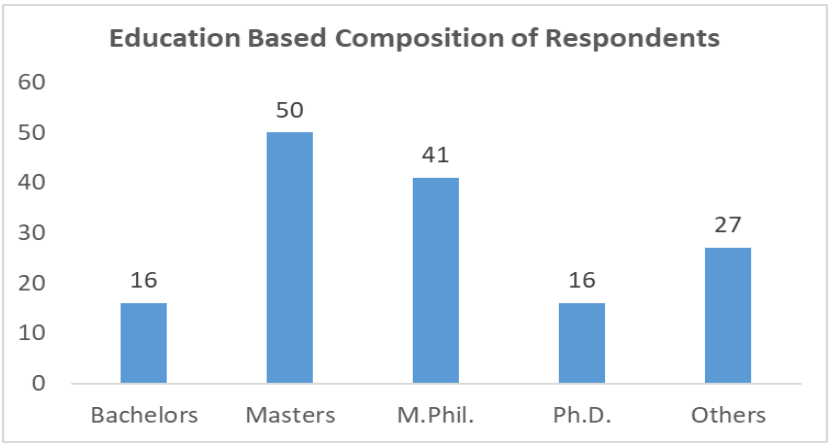

Figure 4.2: Education-Based Composition of Respondents

Another important dimension of respondents studied during the investigation is experience. Respondents with an experience level of 1 to 5 years reported around 73 respondents out of 150 respondents followed by respondents i.e., around 37 responses, with an experience level of above 10 years. The respondents with the experience level of 5 to 10 years reported around 28 while respondents with the experience level of less than a year found only 12.

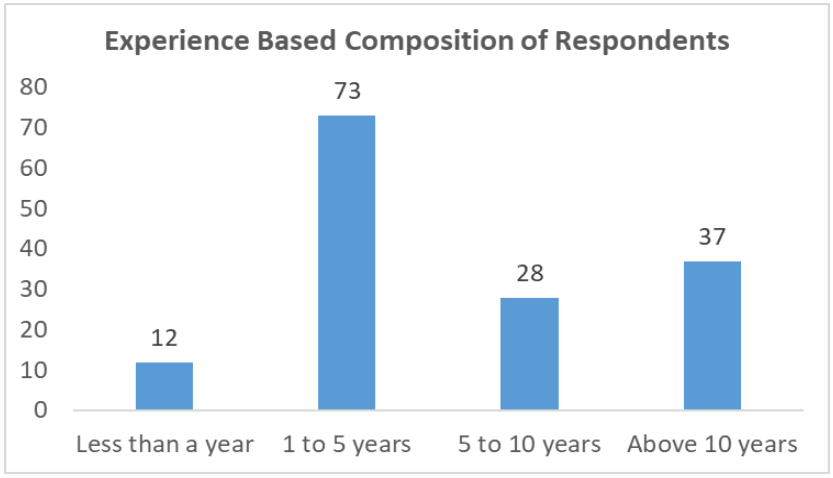

Figure 4.3: Experience-Based Composition of Respondents

The department-based demographic assessment of the respondents clearly showed that majorly respondents belonged to the Islamic finance department i.e., 50 respondents out of 150 followed by respondents from the Shariah compliance department i.e., 40 responses out of 150 and the Internal Shariah Audit department i.e., 38 responses out of 150 responses. The share of respondents from the product development department observed least i.e., 22 responses out of 150.

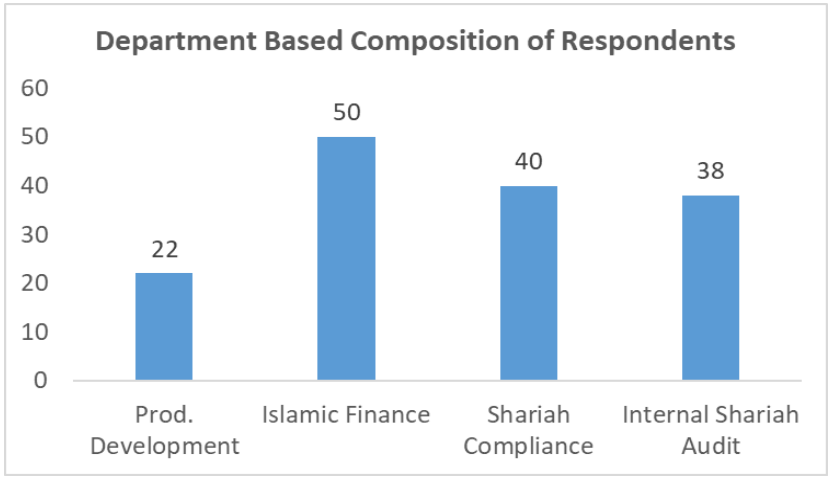

Figure 4.4: Department-Based Composition of Respondents

4.2. Indicator Reliability

The outer loading shows the reliability level of different associated factors of latent variables and relevancy in the definition of relationships. This is based on structural equation modeling. The scale for explanatory and exploratory studies are 0.7 and 0.4 respectively. The results of outer loading of relevant factors of latent variables found values higher than 0.7 for almost all the factors of the latent variables except for one factor of assets diversification and two factors of the treasury function. This is due to a sample size of 150 and may be an improved collection of additional responses. The overall response of outer loading of the present study was found suitable to proceed with further interpretation of the extracted results.

4.3. Internal Consistency Reliability

An important measure is the square of outer loading i.e., indicator reliability. This helps to assess the internal consistency and reliability of the primary collected response after the data run applying structural equation modeling. The benchmark value for the test is generally 0.6 to meet up reliability scale requirement of the present study. The square of outer loading also shows the value of Cronbach's Alpha for every single factor and is higher than 0.6 except for three factors. This is due to the sample size and possible to improve additional response collection in further extension of this study. Overall, most of

the factors found reliable to support the study and further proceed with the interpretation of the results. The Cronbach's Alpha for each latent variable also observed sufficient value i.e., higher than 0.6. The Cronbach's Alpha for each latent variable multiple pool management, profit smoothening, use of alternative contract, assets diversification, treasury function, liquidity practices, profit risk, and profitability of Islamic bank observed 0.9123, 0.8497, 0.4757, 0.7979, 0.9083, 0.9330, 0.8691 and 0.7941 respectively.

Rho A is another measurement for the composite reliability of the primarily collected responses of the study. The benchmark value for the test found 0.6 from the literature review. The results below showed that multiple pool management, profit smoothening, use of alternative contracts, assets diversification, treasury function, liquidity practice, portfolio risk, and profitability of Islamic banks have values 0.9132, 0.8500, 0.7532, 0.9317, 0.9129, 0.9345, 0.8772 and 0.8179. Another important measure is composite reliability for which the benchmark value is 0.7. As clear from the below results that the value for the variables multiple pool management, profit smoothening, use of alternative contract, assets diversification, treasury function, liquidity practice, portfolio risk, and profitability of Islamic bank found 0.9383, 0.8990, 0.5933, 0.8798, 0.9363, 0.9522, 0.9108 and 0.8651 respectively. In this manner, both composite reliability and Rho A expressed the acceptability of internal consistency reliability.

Table 4.1: Validity and Reliability Test

Latent Variables	Indicators	Loadings	Indicator Reliability (Loading2)	Cronbach's Alpha	Rho A	Composite Reliability	Average Variance Extracted (AVE)
Multiple Pool Management	MPM1	0.8633	0.7453	0.9123	0.9132	0.9383	0.7918
	MPM2	0.8950	0.8010				
	MPM3	0.8975	0.8055				
	MPM4	0.9031	0.8156				
Profit Smoothening	PS1	0.8748	0.7654	0.8497	0.8500	0.8990	0.6903
	PS2	0.7938	0.6301				
	PS3	0.8036	0.6457				
	PS4	0.8485	0.7200				
Use of Alternative Contract	UAC1	0.7919	0.6272	0.4757	0.7523	0.5933	0.4035
	UAC2	0.9213	0.8487				
	UAC3	0.9226	0.8511				
	UAC4	0.9056	0.8200				
Assets Diversification	AD1	0.3361	0.1130	0.7979	0.9317	0.8798	0.6698
	AD2	0.9153	0.8378				
	AD3	0.8960	0.8027				
	AD4	0.9621	0.9257				
Treasury Function	TF1	-0.0626	0.0039	0.9083	0.9129	0.9363	0.7868
	TF2	0.1457	0.0212				
	TF3	0.9017	0.8130				
	TF4	0.8809	0.7760				
Liquidity Practices	LP1	0.8986	0.8075	0.9330	0.9345	0.9522	0.8329
	LP2	0.8967	0.8042				
	LP3	0.9365	0.8770				
	LP4	0.9181	0.8429				
Portfolio Risk	PR1	0.8160	0.6659	0.8691	0.8772	0.9108	0.7193
	PR2	0.8724	0.7610				
	PR3	0.9149	0.8370				
	PR4	0.7830	0.6131				
Profitability of Islamic Bank	PIB1	0.7328	0.5370	0.7941	0.8179	0.8651	0.6172
	PIB2	0.7369	0.5430				
	PIB3	0.8768	0.7688				
	PIB4	0.7875	0.6202				

4.4. Convergent Validity

The average variance extracted (AVE) is generally used to examine the convergent validity of results under structural equation modeling. This helps to explain the deviation of construct or factor measurement error concerning each latent variable. This is an important measure of the validity scale for primarily collected responses. The general value for AVE is 0.5 to read sufficiency level and it is clear from the below table that the value for each latent variable multiple pool management, profit smoothening, use of alternative contract, assets diversification, treasury function, liquidity practice,

portfolio risk and profitability of Islamic bank found 0.7918, 0.6903, 0.4035, 0.6698, 0.7868, 0.83290.7193 and 0.6172 respectively. The above interpretation is also found in support of convergent validity for the scale.

4.5. Discriminant Validity

An important and widely used test of discriminant validity is of Fornell and Larcker test. This is the computed square root of each AVE value. The value of AVE itself was found higher than the cross-square roots of AVE for latent variables among themselves. The value for each self-square of the latent variable was found higher as compared to non-diagonal values. This shows the validity of the test in favor of the study and found reliability to proceed for further interpretation of results during the investigation.

Table 4.2: Discriminant Validity Test Fornell Larcker Criterion

Fornell-Larcker Criterion								
	AD	**LF**	**MPM**	**PR**	**PS**	**PIB**	**TF**	**UAC**
Assets Diversification (AD)	0.8184							
Liquidity Function (LF)	0.2135	0.9126						
Multiple Pool Management (MPM)	0.1393	0.5730	0.8898					
Portfolio Risk (PR)	0.0846	0.4516	0.3328	0.8481				
Profit Smoothening (PS)	0.1121	0.5922	0.4915	0.3190	0.8308			
Profitability of Islamic Banks (PIB)	0.1768	0.6949	0.6162	0.6219	0.6010	0.7856		
Treasury Function (TF)	0.1941	0.7137	0.5334	0.5334	0.6009	0.7193	0.8870	
Use of Alternative Contracts (UAC)	0.2165	0.6190	0.4947	0.5816	0.5166	0.7332	0.6501	0.8353

4.6. Path Coefficients

The path coefficients table for the study found a p-value of 0.000, 0.0028, 0.0402, 0.0000 for multiple pool management, portfolio risk, profit smoothen, ng, and use of alternative contracts in the determination of profitability of Islamic banks. The t-statistics value of multiple pool management, portfolio risk, profit smoothening, and use of alternative contracts were also found 4.29, 3.00, 2.05, and 17.51 respectively. The coefficient value of multiple pool management, portfolio risk, profit smoothening, and use of alternative contracts was found 0.1421, 0.0836, 0.0708, and 0.7059. The relative impact of the use of alternative contracts was found higher on the profitability of Islamic banks followed by multiple pool management, portfolio risk, and profit smoothening in the case of Islamic banks in Pakistan.

Table 4.3: Path Coefficient Direct Effects

Path Coefficient					
	Original Sample (O)	**Sample Mean (M)**	**Stand. Dev.**	**T-Statistics**	**P Values**
Assets Diversification -> Profitability of Islamic Banks	-0.0372	-0.0339	0.0360	1.0359	0.3007
Liquidity Function -> Profitability of Islamic Banks	0.0620	0.0631	0.0480	1.2924	0.1968
Multiple Pool Management -> Profitability of Islamic Banks	0.1437	0.1421	0.0335	4.2904	0.0000
Portfolio Risk_ -> Profitability of Islamic Banks	0.0829	0.0836	0.0276	3.0040	0.0028
Profit Smoothening Moderator -> Profitability of Islamic Banks	0.0066	0.0067	0.0305	0.2160	0.8291
Profit Smoothening_ -> Profitability of Islamic Banks	0.0708	0.0708	0.0344	2.0575	0.0402
Treasury Function -> Profitability of Islamic Banks	0.0599	0.0631	0.0401	1.4956	0.1354
Use of Alternative Contracts -> Profitability of Islamic Banks	0.7092	0.7059	0.0405	17.5088	0.0000

The table below shows that there is no significant input of profit smoothening in the determination of the profit of Islamic banks at all as evident from the below table.

Table 4.4: Path Coefficient Indirect Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Liquidity Practices > Profit Smoothening > Profitability of Islamic Bank	-0.026	-0.027	0.047	0.549	0.583
Multiple Pool Management > Profit Smoothening > Profitability of Islamic Bank	0.003	0.003	0.034	0.087	0.931
Portfolio Risk > Profit Smoothening > Profitability of Islamic Bank	-0.042	-0.043	0.029	1.476	0.141
Assets Diversification > Profit Smoothening > Profitability of Islamic Bank	0.031	0.028	0.031	1.015	0.311
Treasury Function > Profit Smoothening > Profitability of Islamic Bank	0.007	0.011	0.046	0.153	0.878
Use of Alternative Contracts > Profit Smoothening > Profitability of Islamic Bank	0.053	0.049	0.037	1.418	0.157

4.7. Multi-collinearity Test

An important test for multi-collinearity is the variance inflating factor for latent variables for the present study. It helps to understand the level of multi-collinearity of latent variables in between. The normal figures lie between 1 to 10 for latent variables and show the non-occurrence of multi-collinearity. In case the value of VIF greater than 10 shows the presence of multi-collinearity. It is clear from the below table that the value of VIF for assets diversification, liquidity practices, multiple pool management, portfolio risk, profit smoothening, treasury function, and use of alternative contracts found 1.1213, 2.6512, 1.8210, 1.6527, 1.8086, 2.7297 and 2.3055 respectively.

Table 4.5: Multi-Collinearity Test – VIF

Multi-Collinearity Test	
Latent Variables	**Profitability of Islamic Banks**
Assets Diversification	1.1213
Liquidity Function	2.6512
Multiple Pool Management	1.8210
Portfolio Risk_	1.6527
Profit Smoothening_	1.8086
Treasury Function	2.7297
Use of Alternative Contracts	2.3055

4.8. Model Significance

The overall model for the study was found significant at a 5 percent level of significance with a significance value of 0.000. Further, the value of R-square was also found 0.9223 showing that assets diversification, liquidity practices, multiple pool management, portfolio risk, profit smoothening, treasury function, and user of alternative contracts determine collectively profitability of Islamic banks around 92.23 percent. The value of the adjusted R-square was also found close to 92 percent i.e., around 91.79 percent.

Table 4.6: Model Significance – R square and F-Statistics

	R Square	R Square Adjusted	F-Statistics
Profitability of Islamic Banks	0.922371703	0.917967261	0

4.9. Hypotheses Summary

The summary table below shows that hypotheses H1, H3, and H4 were accepted at a 5 percent level of significance with a significance value of 0.000, 0.000, and 0.0028 respectively while hypotheses H2, H5, and H6 were found in-significant at even 10 percent level of significance. The moderating impact of profit smoothening was also found significant on the profitability of Islamic banks at a 5 percent level of significance with a significance value of 0.0402.

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Table 4.7: Hypotheses Summary

Sr.	Description	Sign. Value	Comments
1	H1: *There is a direct impact of multiple pool management in pool management practices on the profitability of Islamic banks in Pakistan.*	0.000	Hypothesis supported
2	H2: *There is an indirect impact of multiple pool management in pool management practices on the profitability of Islamic banks in Pakistan.*	0.931	Hypothesis rejected
3	H3: *There is a direct impact of liquidity management in pool management practices on the profitability of Islamic banks in Pakistan.*	0.1968	Hypothesis not supported
4	H4: *There is an indirect impact of liquidity management in pool management practices on the profitability of Islamic banks in Pakistan.*	0.583	Hypothesis rejected
5	H5: *There is a direct impact of alternative contracts in pool management practices on the profitability of Islamic banks in Pakistan.*	0.000	Hypothesis accepted
6	H6: *There is an indirect impact of alternative contracts in pool management practices on the profitability of Islamic banks in Pakistan.*	0.157	Hypothesis rejected
7	H7: *There is a direct impact of portfolio risk in pool management practices on the profitability of Islamic banks in Pakistan.*	0.0028	Hypothesis accepted
8	H8: *There is an indirect impact of portfolio risk in pool management practices on the profitability of Islamic banks in Pakistan.*	0.141	Hypothesis rejected
9	H9: *There is a direct impact of asset diversification in pool management practices on the profitability of Islamic banks in Pakistan.*	0.3007	Hypothesis rejected
10	H10: *There is an indirect impact of asset diversification in pool management practices on the profitability of Islamic banks in Pakistan.*	0.311	Hypothesis rejected
11	H11: *There is a direct impact of treasury function in pool management practices on the profitability of Islamic banks in Pakistan.*	0.1354	Hypothesis rejected
12	H12: *There is an indirect impact of treasury function in pool management practices on the profitability of Islamic banks in Pakistan.*	0.878	Hypothesis rejected

5. DISCUSSION

The present study found a significant role of multiple pool management practices in the determination of profitability of Islamic banks in the case of Pakistan positively hence H1 was accepted. An application of multiple pools brings up through risk mitigation and customization of different pools to meet up customers' expectations. Islam and Amir (2016) investigated the issues of profitability of Islamic banks and come up with evidence of the occurrence of single or multiple pools to optimize returns to investors or depositors. Ayub and Mohamed Ibrahim (2013) also examined the pool management framework for current practices of profit and loss distribution by the existing set of issues, progression, and implications. The study observed significant input of several pool ability to meet up customers' profit expectations concerning the size of investment pooled in. Ali (2013) examined an assessment of liquidity and profitability management of Islamic banks to come up with rational profitability actions and understand its implications. Rammal and Parker (2010) studied the growth of Islamic banks and the use of pool management practices. The study comes up with an understanding of the role of special pool management in the optimization of returns to depositors. Siddiqui and tir Razia (2020) examined the performance of Islamic banks in Pakistan and realized supplement input of multiple pool management functions in the determination of expected profit for customers and bring up flexibilities in banking operations.

6. CONCLUSION

This study is performed to determine the impact of multiple pool management, liquidity management practices, use of alternative contracts, risk mitigation, and input of alternative contracts on the profitability of Islamic banks in Pakistan. The study analyzed the phenomenon following a quantitative approach and among the quantitative method, the explanatory approach has selected to determine the impact of multiple pool management, profit smoothening, use of alternative contracts, assets diversification, treasury function, liquidity practices, and profit risk on the profitability of Islamic bank. The study used a questionnaire as a data collection instrument and followed by a selection of a survey approach for data collection purposes. This research study is primary in nature. The targeted population of the current study are Islamic banking professionals working in the finance department of different Islamic banks. This study has selected a non-probabilistic sampling technique i.e., convenience sampling. This study has selected a sample size of around 150 for the presented study. The data collection method adopted during the present investigation is survey in nature and used a questionnaire as a data collection instrument. The current study has selected multi-variate regression techniques for current study along with descriptive statistics and Pearson correlation.

The path coefficients table for the study found a p-value of 0.000, 0.0028, 0.0402, 0.0000 for multiple pool management, portfolio risk, profit smoothening, and use of alternative contracts in the determination of profitability of Islamic banks. The t-statistics value of multiple pool management, portfolio risk, profit smoothening, and use of alternative contracts were also found 4.29, 3.00, 2.05, and 17.51 respectively. The coefficient value of multiple pool management, portfolio risk, profit smoothening, and use of alternative contracts was found 0.1421, 0.0836, 0.0708, and 0.7059. The relative impact of the use of alternative contracts was found higher on the profitability of Islamic banks followed by multiple pool management, portfolio risk, and profit smoothening in the case of Islamic banks in Pakistan. The present study found the significant role of multiple pool management practices in the determination of profitability of Islamic banks in the case of Pakistan positively hence H1 was accepted. Better portfolio risk management practices come up with positive input in the determination of the profitability of Islamic banks hence H7 was accepted. Profit smoothening was also revealed as an important input in the determination of the relationship of profitability of Islamic banks in the case of Pakistan. Islamic bank's positive input of profit smoothening functions and observed its positive outcomes in determining the profitability of Islamic banks.

Profit smoothening also comes up through the role of better return management for Islamic banks to bring up a better allocation of funds and its role in improving the investment function of Islamic banking functions. Another important factor in the profitability function of Islamic banks is the use of alternative contracts in different scenarios. Input of different Islamic contracts has come up by better attraction of businesses and its role in enhancing business opportunity and its input in Islamic banking business growth hence H5 is accepted. The liquidity management practice is not observed direct and indirect, through the moderating function of profit smoothening on the profitability of Islamic banks in Pakistan. This is because the liquidity market-based practices regarding Islamic financial instruments and institution is still in the developing phase. Therefore, both H3 and H4 got rejected. Furthermore, the concept of assets diversification and treasury function also not found any significant direct and indirect, through the moderating function of profit smoothening, on the profitability of Islamic banks. Therefore, hypotheses like H9, H10, H11 and H12 got rejected.

7. THEORETICAL AND MANAGERIAL IMPLICATIONS

7.1. Theoretical Implication

The current study focused on the developed model considering on profit optimization model. These findings were inputted positively toward the constructed model and theoretical foundation employed in explaining existing theoretical relationships. The profit smoothening is adding up as a moderator in the

current study to understand the impact of portfolio risk management, the use of alternative options like contracts and multiple pool management on the profitability of Islamic banks as the phenomenon of profit smoothening is common among Islamic banks and a theory of profit smoothening is essential to business to management with investor's expectations.

7.2. Managerial Implication

The Managerial side of the study also observed significant input for the Islamic banker to bring up an effective contribution of the use of multiple pools in the determination of profitability based on investors' expectations and profitability of businesses invested. Furthermore, the positive input of the present study is also valuable input with an emphasis on the use of alternative contracts and portfolio risk management practices in the determination of overall outcomes of profitability for Islamic banks along with an indication toward the possible intervention of management function to bring up with progressive input in operations of Islamic banks. This study also inputs the Islamic banking professional to reconsider the operations comparison to the results of the current study and conduct similar investigation-based control checks periodically to understand the implication of the profitability of Islamic banks along with optimization of operations. Liquidity management is a very challenging area for Islamic banks to manage.

7.3. Practical Implication

The practical aspects for different stakeholders are also important. This study also input students of Islamic finance to learn practical dimensions of pool management and get a hand on understanding level regarding Islamic finance in terms of the use of liquidity management practices, the use of multiple pool management, the scope of application of alternative contracts, management of portfolio risk along with practical understanding to the treasury function.

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