

# On the moderating role of transparency in the relationship between Islamic Banks' Performance and Deposits: An empirical evidence from Pakistan

Waqas Ali Haider<sup>1\*</sup>, Muhammad Aslam<sup>2</sup>, Muhammad Yasin Ayoub<sup>3</sup>, Sajjad Ahmad<sup>4</sup>

<sup>1</sup> PhD Scholar, Department of Islamic Studies, University of Okara, Okara, Pakistan / Senior Lecturer, Islamic Studies, Superior University, Lahore, Pakistan

<sup>2</sup> PhD Scholar, Department of Islamic Studies, University of Okara, Okara, Pakistan

<sup>3</sup> Department of Education, Punjab School Education, Punjab, Lahore, Pakistan

<sup>4</sup> Manager Shariah Commercial and SME Risk, Risk Management Group, Allied Bank Limited, Lahore, Pakistan

\* Corresponding Author E-mail: [Waqas.alihaider@gmail.com](mailto:Waqas.alihaider@gmail.com); ORCID: <https://orcid.org/0000-0002-8391-1138>

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**Abstract:** The purpose of this study is to analyze the impact of Islamic banks' performance (measured through CAMEL analysis) on customers' funds in Pakistan. Rational utilization of the financial sector makes profitability (ROA) optimum, which in turn increases depositor's trust in the Islamic banking system. This study analyzes the moderating role of transparency in the relationship between Islamic banks' performance and customers' funds. The quantitative data is extracted from the database of central bank of Pakistan (SBP) for the past five years (2014-2018). Time series data has been used to perform regression analysis. The study concludes that only four variables (capital adequacy, assets quality, management quality and liquidity) out of five have significant impact on the variable of interest i.e. depositors' funds for Islamic banks in Pakistan through the moderating role of transparency. Whereas, the variable profitability (net earnings after tax) does not have significant relationship with the dependent variable through moderation of transparency. The study will be helpful for Islamic banks to formulate their policies in a way that their deposit base is increased. Further the central bank will also be benefited to impose certain regulatory requirements including CAR, reserve ratios and disclosure guidelines which are helpful for the customers.

**Keywords:** Islamic Banks, Islamic Economics, State Bank of Pakistan, Deposits, Banking Performance, Transparency

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## 1. Introduction:

Financial sector serves as lifeblood for economic growth in every country. There has been substantial research showing the causal relationship between economic growth and the financial sector (Calderon & Liu, 2003). It is argued that the direction of the relation between the two variables is of utmost importance. It has been observed that an active and healthy financial sector is desired to achieve and maintain higher economic growth rate. Research has also highlighted that the relevant growth in financial sector is desirable as it results in economic growth (Arestis et al, 2001). Besides

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growth in conventional banking, Islamic banking industry has also shown remarkable growth since it first emerged during 1970's. By the end of 2018, Islamic finance assets showed 0.9% growth in assets with almost USD 1.57 trillion and share around 71.7% in the overall Islamic Financial Services Industry (IFSI) globally (Islamic Financial Services Board (IFSB), 2019). This evolution shows high demand from Muslim and non-Muslim populations who have been looking for Shariah-compliant financial sector that complies with Islamic laws for their investment and financial products (Salina Rasli et al, 2020).

Research studies in Pakistan mostly remained focused around the functions of financial sector development to achieve economic growth. Khan et al (2005) explained the observed correlation between the creation of the financial sector and economic growth over the period from 1971 to 2004. They observed that, financial sector growth has significant and positive causal relationship with the economic growth in long run, which is in line with the belief that "financial sector development leads towards growth in economy" as observed by Shahbaz (2012). The economic growth is increased by financial sector growth whereas an instable financial sector is likely to result in reduction in the growth. The tendency explains that monetary volatility restricts the impact of financial sector growth on economic growth (Shahbaz & Malik, 2010).

The major function of the banks is to play an intermediary role by collecting deposits from their customers and providing funds to the business community resulting in their business growth. This ultimately leads towards economic growth. The savings are important component for economic growth. The major function of savings is to support financial sector for further investments. People maintain their savings in banks to get returns as a reward for forgoing their current consumption. Consequently, the deposits levels in the banks are affected by rate of return on such deposits. Therefore, banks encourage deposits by giving reward to their customers against these deposits (Kasri & Kassim, 2009). It is the belief of Muslims that return paid in the shape of interest on deposits is *riba*, and that is entirely prohibited in Islam. Due to prohibition of interest, Islam encourages various equity and trade based investments (Usmani, 2006).

Interest based conventional financial sector is prevailing in Pakistan since inception. However, with the emergence of Islamic financial sector in the late nineties, dual financial sector is working in Pakistan these days. Moreover, the Islamic banking sector is making so much growth that conventional banks have also started opening Islamic windows and branches being monitored by separate Islamic Banking Divisions in these banks and regulated by the Islamic Banking department of the central bank (State Bank of Pakistan).

Islamic banking has gained significant growth respectively in capital, Islamic financing and customers' funds. Moreover, as per SBP Islamic Banking Bulletin of September 2020, the branch network for Islamic banks in Pakistan has reached 2685, and is expected to be at 3300 branches by the end of 2021 showing a remarkable growth in Islamic branches as compared to growth in conventional branches. Due to its stable performance even during the financial crisis around the world, customers are more inclined towards Islamic financial sector, particularly in Islamic countries. As per SBP recent reports, the deposits of Islamic banks are growing at around 38% per annum.

It is a common observation that customers today have more knowledge about Islamic financial sector and are transferring towards the emerging system of Islamic finance. This research empirically explores that whether the customers are impacted by the KPI's (key performance indicators) of Islamic

banks. This is explored by analyzing the causal relationship between the customers' funds of Islamic banks and CAMEL based performance components (Salina Rasli et al, 2020). These components consist of adequacy of banks' capital, earning assets' quality, management efficiency, banks' profitability, and finally their liquidity position.

Additionally, transparency is a major antecedent for creating and maintaining positive relationships between banks customers and the Islamic banks. Transparency is defined as "openness of information disclosure including both good and bad". The transparent actions of banks can impact not only the relationship between their customers but also to build their confidence. Transparency works as a moderator between Islamic banks' customers and the performance of the banks. Healey and Pelepu (2001) reported that transparency is one of the most important elements of good corporate governance. The correct and open disclosure of information is a healthy governance principle that enables investors to better evaluate a bank's performance and make rational decisions. Bank transparency reveals controlled disclosure at the banking level and distribution of related information in the financial sector (Tedesse, 2006).

Access to information is necessary to curtail information inequality between insiders and outsiders and to enable the assessment of corporate performance by the general investors (Cheung, Jiang, & Tan, 2010). Whereas low quality of information results in higher uncertainty regarding investing decisions, it also ends up in increased risk introduction and increased financial inefficiency (Flannery & Thakor, 2006). "Disclosures are crucial for banks as they ensure transparency, reduce uncertainty in the market, and allow investors to make informed decisions based on objective information. For Islamic banks, the importance of disclosures is even more significant as the annual reports serve more than their regulatory purpose" (Ahmed Ali et al, 2020).

Enhanced transparency and reporting keep large investors better informed about how a bank is operated and controlled and how banks are prevented from taking undue risks. In addition, the literature (Stephenou, 2010) recommends that transparency minimizes moral vulnerability, encourages answerability by helping supervision, increases market efficiency and reliability, and enhances market control.

Previous literature e.g. Hall (2006); suggests that if financial institutions report related information about their funds arrangement and risk coverage, this leads to strong market control principles that have a direct impact on banks' asset quality. Greuning and Iqbal (2008) found that disclosure is a strong tool to expose banks to market control and present reasonable data, allowing for a logical analysis of financial risk.

Because of the personal impartiality nature of the Islamic tools, business transparency is particularly important for Islamic banks. As Islamic financial institutions raise funds on the basis of profit and loss sharing, all parties to bank transactions must have full rights to the information contained in the agreements (Ariffin et al, 2007).

Investment account holders demand greater transparency in the banks financial operations to keep reviewing their investments (Greuning & Iqbal, 2008). The scarcity of information and lack of confidence among investors could lead to the withdrawal of funds and pressurize the account holders to stop banking with Islamic banks. That can disseminate throughout the financial sector, resulting in system failure. Furthermore, Darmadi (2011) found that Islamic financial institutions are required to disclose to their investors the features of their corporate governance to allow them to determine how a

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bank is regulated and how their assets are handled to remain compliant with the Sharia principles in prudential manner.

Moreover, the potential for Islamic banks to face various kinds of market and operational threats such as liquidity may impact customers' funds (Zaini&Rosly, 2008). Therefore, the aggregate output quality of Islamic banks is an important factor in assessing the prudent management of the customers' funds of Islamic financial institutions/banks. Islamic banking sector manages its funding and financing operations in Pakistan by means of two forms of deposits namely demand funds which can be withdrawn any time at demand, and the investment funds which are invested for a fixed maturity and are withdrawable at the maturity. Such funds are reinvested in the viable ventures according to Islamic modes of financing such as Morabahah, Musharaka, Modaraba, Salam, Istisna, etc., as stated by Ismal (2011) and Wijaya (2008).

In order to overcome the situation, Islamic financial institutions are taking measures to differentiate their products and services to have some competitive advantage over the conventional banks. Most of these measures are related with external environment (Abusharbeh, 2016). However, existing literature have not paid substantial attention on the internal factors which are equally influential in building the trust of people towards Islamic banking (Mohammad Ziaul et al, 2010). Therefore, this study is attempting to analyze the impact of key performance indicators on customers' funds so as to explore the rewarding elements in Islamic banking. Furthermore, the moderating effect of transparency between Islamic banks performance indicators and the customers' funds will also be explored. A large percentage of capital providers – shareholders and customers – to Islamic banks are extremely concerned that their funds are invested in a Shariah compliant avenues (Chapra& Ahmed, 2018).

Research questions of the study are as under:

- What is the impact of performance indicators of Islamic banks in Pakistan on the customers' funds?
- Does transparency in Islamic banks disclosure moderates the relationship between performance of Islamic banks and the customers' funds in Pakistan?

Analyzing the impact of banks' financial performance indicators on customers' funds carries significant importance for banks so that Islamic banks are able to advance their financial policies and ensure growth in market share by recognizing the fundamental characteristics of these key indicators, in comparison with the traditional banks. Similarly, it improves customers' confidence and they further invest their funds in Islamic banks (Abusharbeh, 2016).

Past studies drawbacks are that most of them centered on addressing Islamic banking sector's financial characteristics compared to conventional ones. However, few previous studies have examined the relationship between the performance of banks and the funds of their customers, especially the impact of certain risks such as insufficient funding and operational risks on customers' funds (Abduh et al, 2011). Consequently, modeling of customers' funds is not discussed in Islamic finance. Therefore, this study attempts to explore the causal relationship between some key elements related to performance of the banks and the behavior of the customers' funds. This study extends the existing debate on Islamic banks performance and customers' funds by introducing a novel moderating role of transparency in Islamic banks of Pakistan (Jameel et al, 2011).

## 2. Literature Review

Keeping in view the performance assessment of the Islamic Bank, Menarvi (2011) stated Islamic financial institutions are appraised on strength and the direction of elements of CAMEL as in conventional banks to ensure a healthy state. Sahajwala and Bergh (2000) explained that Islamic banks' performance is assessed on various elements such as adequacy of capital, assets growth, profitability and liquidity based on CAMEL's traditional framework published by the Federal Reserve bank U.S.A, which is applicable both for conventional and Islamic banks.

Whereas, Sarkar (2006) claimed that the CAMEL concept is aimed at evaluating and monitoring changes in the financial health and risk appetite of a bank to produce timely caution and to help the central bank and other regulatory bodies to take justified action in a timely manner. Sarkar (2006) explained that CAMEL is a justified reflector showing bank's financial health and customers' interest, as it interacts with major assets and liabilities as well as profitability.

Past studies drawbacks are that most of them centered on addressing Islamic banking industry's financial characteristics compared to conventional ones. There have been very few research studies in the past that have addressed the gap in exploring the effect of banks' overall output on their deposit related customers, particularly the effect on customers' funds in relation to certain prominent risks such as ineffective financing and operational risks. Resultantly, this study attempts to explore the relationship among some specific factors of banks output and the customers' funds.

### 2.1 Capital Adequacy Ratio (CAR)

Khan and Merakhor (1987) stated the supposed value of deposits is not confirmed and will keep varying depending on the bank's actual output, any change in the Mudaraba and Musharaka agreements will also change the worth of public deposits. In this setting, Sundarajan and Errico (2002) claimed that banks' asset financing risks in all degrees can transfer to their investment deposit customers. According to Jozsef Varga et al (2020), this component of CAMEL analysis is a major indicator of soundness for banks. The equity capital reflects the financial capability of a bank and allows cushion against the losses, if any. Moreover, according to Salina Rasli et al (2020) capital adequacy is measured on the bank's financial strength and capital position. This ratio is derived by calculating the total capital over total assets, which to discover the banks' ability and capacity to hold a reasonable level of losses from banks' operation.

**H<sub>1</sub>:** Capital adequacy ratio has statistically significant impact on Islamic banks' deposits in Pakistan.

### 2.2 Non Performing Financing

Banks' asset quality is linked to the quality of the credit provided by the bank as measured with the non-performing loan (NPL) which consists of overdue loans and follow-up loans (Salina Rasli et al, 2020). Furthermore, Zaini and Rosely (2008) studied the risk and the corresponding profit of the customers of Islamic bank investment. They found that the overall output of the bank had a significant impact on deposits for investment. The higher risks associated with the credit and inadequate financing, however, may decrease the value of the Islamic bank's capital and customers funds. Jozsef Varga et al (2020) state that the rating of bank's assets (financing, investments, etc.) must be carried out after certain intervals. They used rated loans, particularly the rate of nonperforming financing compared to total financing.

**H<sub>2</sub>:** Nonperforming financing has statistically significant impact on Islamic banks' deposits in Pakistan.

### **2.3 Efficiency of the Operations (OEOI)**

Rosely (2005) stated that deposits from Islamic banks are not a viable option if Islamic institutions' outlays show unfavorably higher expenses of such transactions. This shows that the unfavorably elevated working costs in Islamic financial institutions over their operating income can decrease the amount of their customers' funds towards Islamic financial sector. According to Jozsef Varga et al (2020), the assessment of management performance is the most subjective component of the CAMEL analysis. However, they used the earnings before tax compared to the total earnings as the measure for management assessment. Salina Rasli et al (2020) argued that management efficiency reflects the soundness of bank's management as safeguard acting of the management to operate the bank efficiently and smoothly. This depends on how management controls its cost to increase productivity as well as banks achieve higher profits ultimately known as excellence management or skillful management.

**H<sub>3</sub>:** Operational efficiency has statistically significant impact on Islamic banks' deposits in Pakistan.

### **2.4 Net Earnings (ROA)**

The study examines Islamic banking literature on Islamic funds and earlier studies that examined the association between the output quality of Islamic banks and the funds of their customers. Initially, Seddiqe (1981) considered banking on profit and loss sharing basis instead of paying and collecting interest on financial transactions. He replaced the concept of interest rate with the Islamic concept of profit and loss sharing (PLS) rate to comply with the principles of Islamic financial transactions. Under the PLS scheme, Seddiqe (1981), introduced that Islamic banks' assets and liabilities are correlated as the firms share profits or losses with the banks, converting profits or losses to the banks' customers. As per the research study by Jozsef Varga et al (2020), the most important element of CAMEL analysis is ROA, which shows how much earning one unit of investment gives. According to Salina Rasli et al (2020), earnings quality (EQ) is subjected to the effectiveness and efficiency of assets and liabilities management of an institution. The earnings performance' increase should attract stakeholders' confidence, such as depositors, investors, creditors, and the public.

**H<sub>4</sub>:** Profitability has statistically significant impact on Islamic banks' deposits in Pakistan.

### **2.5 Liquidity**

People having surplus funds over their spending, deposit their savings in the Islamic financial sector which in effect invests their funds in the businesses that are in need of such funds for their business operations. Since financial sector deals with concept of governing the flow of funds from the superfluous people to the deficit businesses, it is very simple to mention the essence of the Islamic economic system (Rosely, 2005). According to Jozsef Varga et al (2020), liquidity shows that how much the bank can fulfill its short-term liabilities using its current assets. To reach the continued solvency, banks need to create harmony in the assets and liabilities by date and maturity. As concluded by Salina Rasli et al (2020), bank's liquidity refers to cash reserves, securities, bank's ability to convert an asset into cash, and available bank lines of credit. To have adequate liquidity, it must meet one-year maturity period for all unsecured debt obligations.

**H<sub>5</sub>:** Liquidity has statistically significant impact on Islamic banks' deposits in Pakistan.

## 2.6 Transparency

Should transparency in the banks encourage or undermine banks' stability? This topic is the subject of current bookish discussion without reaching agreement between policymakers as well as academics. Overall, there are competing hypotheses in the literature about the impact of transparency on bank risk behavior. Sufficient literature on banking shows that transparency can foster bank stability by improving the market discipline of banks' risk-taking decisions.

The more information the public receives, the stronger the discipline of the market (Weng et al, 2015). Market regulation is a tool that could significantly restrain the motivation to take extra risk, resulting in more expensive for banks to take risks (Areffan et al, 2007).

Dermirg-Kentand Teresse (2008) investigated whether compliance with the basic principles of active banking supervision in connection with information provision improves bank soundness. The bank's strength is evaluated by the ratings of Moody, Z-score, and the level of disclosure of information under the core principles of Basel. They noticed that banks in countries requiring banks to routinely and reliably disclose their financial data to regulators and market participants earn more favorable financial strength ratings from Moody.

“Due to profit sharing arrangements, Islamic banks are likely to be more transparent than conventional banks as the investment account holders may need more information from the banks to monitor their investments” (Neifar & Jarboui, 2018). “In Islamic Banking Institutions, the depositors-bank relationship is that of partners, due to the underlying contract of *mudarabah*. Transparency presents objective and detailed information, in easy to understand manner, to the depositors about the utilization and income of their funds” (Ahmed Ali et al, 2020).

**H<sub>6</sub>:** Transparency moderates the effect of Islamic banks Performance on the customers' funds.

## 3. Data and Methodology

This is an exploratory study based on quantitative data analysis. Accordingly, the purpose of this chapter is to explain data description, measurement of variables, research methodology, model specification and econometric model. Analyses have been performed using time series, quantitative secondary data.

### 3.1 Data Description

The study analyzed listed Islamic Banks and conventional banks having Islamic branches. These banks are registered with SBP as well as Pakistan stock exchange (PSX). The study is supported by a sample of five banks having complete Islamic operations while eleven other commercial banks with Islamic branches/windows. The data is extracted from the database of central bank of Pakistan (SBP) for the past five years (2014-2018). In addition to data extraction from Pakistan Bureau of Statistics, and publications of SBP, annual financial reports of the banks for the period of five years (2014-2018) are also analyzed for information disclosure to measure transparency.

### 3.2 Measurement of Variables

The basic purpose of the study is to analyze the variation in customers funds (DF) with respect to the impact of the elements of CAMEL with moderating role of transparency. As such the variable customers funds is the basic interested variable of the analysis and is being considered as a proxy for confidence of banks' customers in Islamic banking sector. Considering the types of bank deposits, Hasbi and Haruman (2011) measured this component as follows:

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$$DF = (\text{Demand deposits} + \text{Investment deposits}) \quad DV \quad (1)$$

The explanatory components consist of five elements of CAMEL that are used to measure bank's overall output (performance indicators) discussed as follows:

### **3.2.1 Capital Adequacy Ratio (CAR)**

This refers to bank's equity position where the capital net off revaluation surplus is capable to cover all losses and the long term resources of the bank resulting in a sufficient excess for the ongoing operations and the future viable growth projects (Ebhodeghe, 2001). It is measured as bank capital (general reserves, capital, surplus income, and income from the current operations, excluding revaluation surplus, if any) with respect to risk weighted assets (Sarkar, 2006). As such this element is measured as:

$$CAR = (\text{Adjusted capital of the Bank} / \text{Total assets carrying Risk weights}) \quad IV_1(2)$$

### **3.2.2 Nonperforming or Delinquent financing**

This is reported as the quantum of overdue finance for which provision has been held under objective or subjective criteria as laid down by the regulatory bodies. It is a measure of quality of the bank's resources and it shows the ability of a bank to diversify risks and to recover the defaulted finances (Sundarajan & Errico, 2002). The less ratio shows the better quality of the earning assets. Thus, it is measured as follows:

$$NPF = (\text{The principal amount of non performing finances} / \text{Total finances}) \quad IV_2 \quad (3)$$

### **3.2.3 Efficiency of the Operations (OEOI)**

This proxy is used to calculate efficiency of the bank's management, and is calculated by dividing operating cost to operational income (OEOI) as explained by Sarkar (2006). He stated that OEOI can be an alternative measure to assess quality of management in a bank. As such the lower OEOI shows that management is running the operations efficiently for the bank. This is measured as:

$$OEOI = (\text{Operational Expenses} / \text{Operational Incomes}) \quad IV_3(4)$$

### **3.2.4 Net Earnings (ROA)**

Net Earnings can be measured in different ways due to a number of indicators of net earnings such as ROE, ROA, etc., while many researchers favor to apply profit on assets (ROA) because it covers optimum utilization of total assets to generate net profit. Rosely (2005) explained profit on assets as income less taxes divided by total assets. Therefore, it is measured as follows:

$$ROA = (\text{Net profit after tax} / \text{Total assets}) \quad IV_4 \quad (5)$$

### **3.2.5 Liquidity**

This reflects a bank's capacity to pay off amounts due within one year and demand deposits. Alternatively, it is the capability of a bank to exchange its resources into cash without undue costs (Sunderajan & Erreco, 2002). Meanwhile, Hasbi and Haruman (2011) used the ratio of total funding to total deposits to measure Islamic banks' liquidity status. As such it is measured as:

$$FDR = (\text{Total finances} / \text{Total demand and time deposits}) \quad IV_5 \quad (6)$$



### 3.2.6 Transparency

In the financial literature (e.g., Baumann & Nier, 2003; Bushman, Piotroski, & Smith, 2004) and in relation to banks, many metrics and various indices of transparency have been used. This study uses a multidimensional transparency measure unique to Islamic banks based on previous studies and regulatory documents released by the Islamic Financial Services Boards (IFSB), and Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI).

The disclosure is measured binary in nature (i.e., occurrence vs. nonoccurrence) instead of qualitative, using content analysis (Haniffa & Hudaib, 2006). The score is 1 for each item if the bank discloses the information, otherwise it is 0. All items carry equal weight to exclude any biased findings on the comparative importance of each item (Hodgdon & Tondkar, 2008). The index used in this study is based on the quantity of the annual reports issued by the banks. The score for each bank  $j$  and for each element of corporate transparency is determined as follows:

$$CTDI_j = (\sum_i X_{ij} \times 100) / n_j$$

Where  $CTDI_j$  is the corporate transparency disclosure index of the bank  $j$  and ranges from 0 to 100,  $X_{ij}$  varies from 0 to 1 and  $n_j$  is the maximum number of items. A cumulative transparency disclosure score is obtained for each account by taking an average of five intermediate ratings. The higher a bank's score, the more transparent it is to publish its annual report.

## 3.3 Methodology

### 3.3.1 Model Specification

This study contains the following equations to econometrically analyze the effect of Output/Performance of Pakistani Islamic Banks over the customers' funds:

General Equation:

$$Y_t = \alpha + \beta X_t + \varepsilon_t$$

Where  $Y$  is dependent variable and  $X_t$  is set of regressors.

This study estimates the following equation to find the relationship of Islamic banks' performance and the customers' funds:

$$DF_t = \alpha + \beta_1 CAR_t + \beta_2 AQ_t + \beta_3 ROE_t + \beta_4 OE_t + \beta_5 LDR_t + \beta_6 CTDI_t + \varepsilon_t \dots \dots \dots (1)$$

Moderating Role of Transparency, measured on the basis of information disclosure:

$$DF_t = \alpha + \beta_1 CAR_t * CTDI_t + \beta_2 AQ_t + \beta_3 ROE_t + \beta_4 OE_t + \beta_5 LDR_t + \beta_6 CTDI_t + \varepsilon_t \dots \dots \dots (2)$$

$$DF_t = \alpha + \beta_1 CAR_t + \beta_2 AQ_t * CTDI_t + \beta_3 ROE_t + \beta_4 OE_t + \beta_5 LDR_t + \beta_6 CTDI_t + \varepsilon_t \dots \dots \dots (3)$$

$$DF_t = \alpha + \beta_1 CAR_t + \beta_2 AQ_t + \beta_3 ROE_t * CTDI_t + \beta_4 OE_t + \beta_5 LDR_t + \beta_6 CTDI_t + \varepsilon_t \dots \dots \dots (4)$$

$$DF_t = \alpha + \beta_1 CAR_t + \beta_2 AQ_t + \beta_3 ROE_t + \beta_4 OE_t * CTDI_t + \beta_5 LDR_t + \beta_6 CTDI_t + \varepsilon_t \dots \dots \dots (5)$$

$$DF_t = \alpha + \beta_1 CAR_t + \beta_2 AQ_t + \beta_3 ROE_t + \beta_4 OE_t + \beta_5 LDR_t * CTDI_t + \beta_6 CTDI_t + \varepsilon_t \dots \dots \dots (6)$$

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Where:

DF = Customers' funds

CAR = Capital Adequacy Ratio

AQ = Assets Quality (Non performing loans)

ROE = Return on equity

OE = Operational Efficiency

LDR = Loan to deposit ratio

CTDI = Corporate Transparency Disclosure Index

$\epsilon$  = Error Term

t = Time Series

### **3.3.2 Econometric Model**

The study reflects descriptive/summary statistics showing coefficients that summarize a given set of data that can be either a representation of the whole population or a subset of a population. Descriptive statistics are divided into measurements of central trend and measurements of variance (spread). Furthermore, correlation is used to calculate the linear relationship between two quantitative variables and to denote the magnitude and direction of the relationship between variables.

Regression is a technique which allows a researcher to estimate the linear or straight line relationship which shows the impact of X denoted independent variable(s) on the dependent variable denoted by Y. This is also known as ordinary least square (OLS) estimator. Furthermore, in order to address the issues of heteroskedasticity and autocorrelation, HAC test (Heteroskedasticity- and autocorrelation-consistent) has been used to validate the assumptions of regression.

## **4. Findings and Discussion**

This section describes all results concluded by using different econometric tools and software along with the brief discussion.

### **4.1 Descriptive Statistics**

The time period of the analysis is 2014 to 2018 on annual bases. It includes mean, standard deviation, maximum value and minimum value. These results are generally aligned with previous research. Specifically Customers funds mean value is 0.1380 shows the average deposits and standard deviation that captures the deviation from variation in the data is 0.02224. The average value of capital adequacy is 0.2777 with standard deviation of 0.5938. Descriptive statistics results show the mean of non performing loans 0.0411 with the standard deviation is 0.0093. The operational efficiency shows average value 1.2842 with 0.1936 standard deviation. Net Earnings shows mean of 0.0121 with standard deviation 0.0014. The average mean value of liquidity shows 0.5279 and standard deviation is 0.2572, these result are

aligned with past research (Shah, Hijazi,&Javed, 2004). The transparency mean is 0.7447 and 0.1821 of standard deviation.

**Table 4.1**

*Descriptive Statistics*

Sr. No.	Mean	Standard Deviation	Maximum	Minimum
Customers Funds	0.1380	0.0224	0.1999	0.1025
Adequacy Capital	0.2777	0.5938	1.8119	0.0298
Nonperforming	0.0411	0.0093	0.0578	0.0250
Efficiency Operations	1.2842	0.1936	1.8765	1.0020
Net Earnings	0.0121	0.0014	0.0168	0.0028
Liquidity	0.5279	0.2572	1.2294	0.0600
Transparency	0.7447	0.1821	0.8447	0.2348

## 4.2 Correlation Analysis

The results show positive relationship between customers' funds and capital adequacy. It means banks with adequate capital attract more customers' funds. Correlation analysis shows that customers' funds have negative relationship with non performing loans. Besides that, other variables have positive relationship with the dependent variable i.e. customers' funds. In this research table 4.2 reports the multicollinearity checks. Multicollinearity occurs when high correlation exist between two or more independent variables. These results clearly shows that no multicollinearity within the variables because there are no perfect negative or positive relationship between the variables. The value range of correlation is +1.0 to -1.0. The results shows +1.0 it mean perfect positive co-relationship between the variables. Instead, when two variables show -1.0 results, it means two variables are perfect negative relationship. This matrix shows the relationship between dependent, and explanatory variables. This matrix also display the strength and direction of the variables. It is a technique to provide a general overview of correlation amongst different variables.

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*Table 4.2 Correlation Analysis*

	Customers Funds	Adequacy Capital	Nonperforming	Efficiency Operations	Net Earnings	Liquidity	Transparency
Customers Funds	1						
Adequacy Capital	0.3040	1					
Nonperforming	-0.3183	0.1080	1				
Efficiency Operations	0.8424	0.1259	0.3711	1			
Net Earnings	0.0697	-0.2052	0.0293	0.1535	1		
Liquidity	0.4375	0.1974	-0.0661	0.3111	0.1054	1	
Transparency	0.1244	0.0039	-0.0241	0.1261	-0.0321	-0.0845	1

### 4.3 Regression Analysis: Capital Adequacy and Customers Funds

The table 4.4 demonstrates the finding of linear OLS regression analysis with independent variables. The results clearly show all variables have significant impact except net earnings whose impact is insignificant. The p value of all variables is less than 0.05 ( $p < 0.05$ ). The adjusted R-squared value is 0.7752 that show 77.52% variation of customers' funds is caused by independent variables.

*Table 4.4*

Regressors	Coefficient	Standard Error	T-Ratio	Prob
C	0.0137	0.0047	2.8843	0.0040
Adequacy Capital	0.0112	0.0027	4.1871	0.0000
Nonperforming	-0.0894	0.0467	-1.9142	0.0500
Efficiency Operations	0.0864	0.0024	35.8035	0.0000
Net Earnings	0.5331	0.3157	1.6884	0.0918
Liquidity	0.0163	0.0017	9.5199	0.0000
Transparency	0.0079	0.0025	3.1634	0.0016
Adequacy Capital * Transparency	0.0068	0.0035	1.9708	0.0491
R-squared	0.7773	F-statistic	361.9950	
Adjusted R-squared	0.7752	Prob(F-statistic)	0.0000	

**Transparency Moderation between Capital Adequacy and Customers' Funds:**

The table 4.6 reports the results of linear regression analysis with interaction term or multiplier transparency by applying Heteroskedasticity- and autocorrelation-consistent (HAC) test. The results clearly show that the impact of capital adequacy on customers' funds is significant as the p value is less than 0.05 ( $p < 0.05$ ). R-square denotes value 0.7773 and adjusted R-squared is 0.7752 shows that about 77.52% of variation in customers' funds is affected by explanatory variables. The null hypothesis rejected at 5% level. With results, this study has 95% confidence the transparency moderates the relationship among capital adequacy and customers funds.

Table 4.6

Summary of the OLS (HAC standard errors and covariance) estimation results:

Regressors	Coefficient	Standard Error	T-Ratio	Prob
C	0.0137	0.0047	2.9380	0.0034
Adequacy Capital	0.0112	0.0039	2.8675	0.0043
Nonperforming	-0.0894	0.0639	-1.3999	0.1620
Efficiency Operations	0.0864	0.0044	19.6583	0.0000
Net Earnings	0.5331	0.3234	1.6486	0.0997
Liquidity	0.0163	0.0032	5.1466	0.0000
Transparency	0.0079	0.0028	2.7987	0.0053
<b>Adequacy Capital * Transparency</b>	0.0068	0.0048	1.4293	0.0433
R-squared	0.7773	F-statistic	361.9950	
Adjusted R-squared	0.7752	Prob(F-statistic)	0.0000	

**4.4 Regression Analysis: Non Performing Loans and Customers' Funds**

The table 4.7 demonstrates the finding of linear OLS regression analysis with independent variables. The results clearly show all variables have significant impact except net earnings whose impact is insignificant. The p value of all variables is less than 0.05 ( $p < 0.05$ ). The adjusted R-squared value is 0.7752 that show 77.52% variation of customers' funds is caused by independent variables.

Table 4.7

Regressors	Coefficient	Standard Error	T-Ratio	Prob
C	0.0325	0.0088	3.7130	0.0002
Adequacy Capital	0.0066	0.0007	9.3248	0.0000
Nonperforming	-0.3033	0.1818	-1.6679	0.0958
Efficiency Operations	0.0858	0.0025	34.9857	0.0000
Net Earnings	0.4919	0.2937	1.6745	0.0945
Liquidity	0.0150	0.0017	8.7994	0.0000

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Transparency	0.0158	0.0101	1.5693	0.1170
Nonperforming * Transparency	-0.5161	0.2345	-2.2004	0.0281
R-squared	0.7732	F-statistic	349.6280	
Adjusted R-squared	0.7710	Prob(F-statistic)	0.0000	

**Transparency Moderation between Non Performing Loans and Customers' Funds:**

The table 4.9 reports the results of linear regression analysis with interaction term or multiplier transparency by applying Heteroskedasticity- and autocorrelation-consistent (HAC) test. The results clearly show that the impact of non performing loans on customers funds is significant as the p value is less than 0.05 ( $p < 0.05$ ). R-square denotes value 0.7732 and adjusted R-squared is 0.7710 shows that about 77.10% of variation in customers' funds is affected by explanatory variables communally. The null hypothesis rejected at 5% level. With results, this study has 95% confidence the transparency moderates the relationship among non performing loans and customers' funds.

Table 4.9

Summary of the OLS (HAC standard errors and covariance) estimation results:

Regressors	Coefficient	Standard Error	T-Ratio	Prob
C	0.0325	0.0096	3.4019	0.0007
Adequacy Capital	0.0066	0.0013	5.2683	0.0000
Nonperforming	-0.3033	0.1440	-2.1058	0.0356
Efficiency Operations	0.0858	0.0044	19.5298	0.0000
Net Earnings	0.4919	0.2852	1.7249	0.0850
Liquidity	0.0150	0.0029	5.2164	0.0000
Transparency	0.0158	0.0087	1.8189	0.0693
<b>Nonperforming * Transparency</b>	-0.5161	0.2200	-2.3454	0.0193
R-squared	0.7732	F-statistic	349.6280	
Adjusted R-squared	0.7710	Prob(F-statistic)	0.0000	

**4.5 Regression Analysis: Operational Efficiency and Customers' Funds**

The table 4.10 demonstrates the finding of linear OLS regression analysis with independent variables. The results clearly show all variables have significant impact. The p value of all variables is less than 0.05 ( $p < 0.05$ ). The adjusted R-squared value is 0.7808 that show 78.08% variation of customers' funds is caused by independent variables.

Table 4.10

Regressors	Coefficient	Standard Error	T-Ratio	Prob
C	0.0310	0.0059	5.2979	0.0000
Adequacy Capital	0.0064	0.0007	9.1728	0.0000
Nonperforming	-0.1055	0.0464	-2.2721	0.0234
Efficiency Operations	0.0751	0.0037	20.1920	0.0000
Net Earnings	0.6372	0.2913	2.1876	0.0290
Liquidity	0.0155	0.0017	9.2822	0.0000
Transparency	0.0230	0.0072	3.1975	0.0014
<b>Efficiency of Operations * Transparency</b>	0.0225	0.0054	4.1474	0.0000
R-squared	0.7829	F-statistic	376.0204	
Adjusted R-squared	0.7808	Prob(F-statistic)	0.0000	

#### Transparency Moderation between Operational Efficiency and Customers' Funds:

The table 4.12 reports the results of linear regression analysis with interaction term or multiplier transparency by applying Heteroskedasticity- and autocorrelation-consistent (HAC) test. The results clearly show that the impact of operational efficiency on customers funds is significant as the p value is less than 0.05 ( $p < 0.05$ ). R-square denotes value 0.7729 and adjusted R-squared is 0.7808 shows that about 78.08% of variation in customers' funds is affected by explanatory variables communally. The null hypothesis is rejected at 5% level. With results, this study has 95% confidence the transparency moderates the relationship among operational efficiency and customers' funds.

Table 4.12

Summary of the OLS (HAC standard errors and covariance) estimation results:

Regressors	Coefficient	Standard Error	T-Ratio	Prob
C	0.0310	0.0071	4.3875	0.0000
Adequacy Capital	0.0064	0.0012	5.1435	0.0000
Nonperforming	-0.1055	0.0614	-1.7176	0.0863
Efficiency Operations	0.0751	0.0064	11.8206	0.0000
Net Earnings	0.6372	0.2677	2.3806	0.0175
Liquidity	0.0155	0.0031	5.0812	0.0000
Transparency	0.0230	0.0103	2.2272	0.0262
<b>Efficiency of Operations * Transparency</b>	0.0225	0.0079	2.8292	0.0048
R-squared	0.7829	F-statistic	376.0204	
Adjusted R-squared	0.7808	Prob(F-statistic)	0.0000	

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#### **4.6 Regression Analysis: Net Earnings and Customers' Funds**

The table 4.13 demonstrates the finding of linear OLS regression analysis with independent variables. The results clearly show all variables have significant impact. The p value of all variables is less than 0.05 ( $p < 0.05$ ). The adjusted R-squared value is 0.7769 that show 77.69% variation of customers' funds is caused by independent variables.

*Table 4.13*

Regressors	Coefficient	Standard Error	T-Ratio	Prob
C	0.0461	0.0159	2.9029	0.0038
Adequacy Capital	0.0060	0.0007	8.5179	0.0000
Nonperforming	-0.0884	0.0466	-1.8960	0.0583
Efficiency Operations	0.0865	0.0024	35.9769	0.0000
Net Earnings	3.0451	1.2771	2.3844	0.0174
Liquidity	0.0160	0.0017	9.4534	0.0000
Transparency	0.0349	0.0198	1.7617	0.0785
Net Earnings * Transparency	3.3316	1.6259	2.0490	0.0408
R-squared	0.7790	F-statistic	367.6625	
Adjusted R-squared	0.7769	Prob(F-statistic)	0.0000	

#### **Transparency Moderation between Net earnings and Customers' Funds:**

The table 4.15 reports the results of linear regression analysis with interaction term or multiplier transparency by applying Heteroskedasticity- and autocorrelation-consistent (HAC) test. The results clearly show that the impact of net earnings on customers funds is insignificant as the p value is greater than 0.05 ( $p > 0.05$ ). R-square denotes value 0.7790 and adjusted R-squared is 0.7729 shows that about 77.29% of variation in customers funds is affected by explanatory variables communally. The null hypothesis is not rejected at 5% level. With results, this study does not have 95% confidence the transparency moderates the relationship among net earnings and customers funds.

*Table 4.15*

Summary of the OLS (HAC standard errors and covariance) estimation results:

Regressors	Coefficient	Standard Error	T-Ratio	Prob
C	0.0461	0.0222	2.0723	0.0386
Adequacy Capital	0.0060	0.0012	4.8549	0.0000
Nonperforming	-0.0884	0.0640	-1.3818	0.1675
Efficiency Operations	0.0865	0.0044	19.8482	0.0000
Net Earnings	3.0451	1.8284	1.6655	0.0962



Liquidity	0.0160	0.0031	5.1793	0.0000
Transparency	0.0349	0.0259	1.3503	0.1773
<b>Net Earnings * Transparency</b>	3.3316	2.2124	1.5059	0.1325
R-squared	0.7790	F-statistic	367.6625	
Adjusted R-squared	0.7769	Prob(F-statistic)	0.0000	

#### 4.7 Regression Analysis: Liquidity and Customers' Funds

The table 4.16 demonstrates the finding of linear OLS regression analysis with independent variables. The results clearly show all variables have significant impact except net earnings whose impact is insignificant. The p value of all variables is less than 0.05 ( $p < 0.05$ ). The adjusted R-squared value is 0.7799 that show 77.99% variation of customers' funds is caused by independent variables.

Table4.16

Regressors	Coefficient	Standard Error	T-Ratio	Prob
C	0.0262	0.0050	5.1957	0.0000
Adequacy Capital	0.0061	0.0007	8.7507	0.0000
Nonperforming	-0.0804	0.0460	-1.7484	0.0808
Efficiency Operations	0.0857	0.0024	35.7200	0.0000
Net Earnings	0.5399	0.3082	1.7518	0.0802
Liquidity	0.0020	0.0036	0.5517	0.5813
Transparency	0.0079	0.0032	2.4786	0.0134
Liquidity * Transparency	0.0265	0.0050	5.2615	0.0000
R-squared	0.7820	F-statistic	373.0842	
Adjusted R-squared	0.7799	Prob(F-statistic)	0.0000	

#### Transparency Moderation between Liquidity and Customers' Funds:

The table 4.18 reports the results of linear regression analysis with interaction term or multiplier transparency by applying Heteroskedasticity- and autocorrelation-consistent (HAC) test. The results clearly show that the impact of liquidity on customers' funds is insignificant as the p value is greater than 0.05 ( $p > 0.05$ ). R-square denotes value 0.7820 and adjusted R-squared is 0.7799 shows that about 77.99% of variation in customers funds is affected by explanatory variables communally. The null hypothesis rejected at 5% level. With results, this study has 95% confidence the transparency moderates the relationship among liquidity and customers' funds.

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Table 4.18

Summary of the OLS (HAC standard errors and covariance) estimation results:

Regressors	Coefficient	Standard Error	T-Ratio	Prob
C	0.0262	0.0056	4.6508	0.0000
Adequacy Capital	0.0061	0.0012	4.9083	0.0000
Nonperforming	-0.0804	0.0611	-1.3153	0.1888
Efficiency Operations	0.0857	0.0044	19.3012	0.0000
Net Earnings	0.5399	0.2991	1.8054	0.0714
Liquidity	0.0020	0.0026	0.7778	0.4369
Transparency	0.0079	0.0022	3.6459	0.0003
<b>Liquidity * Transparency</b>	0.0265	0.0047	5.6226	0.0000
R-squared	0.7820	F-statistic	373.0842	
Adjusted R-squared	0.7799	Prob(F-statistic)	0.0000	

#### 4.13 Discussion of Results

According to the result in tables 4.6, 4.9, 4.12, 4.15 and 4.18, the model summary is fit well in terms of Adjusted R square which is around 0.77. Since HAC test has been applied, the data of model had no autocorrelation and that corresponds with requirements laid down in assumption test. The 77% value of Adjusted R square shows that the independent variables of the study impact the dependent variable customers' funds by 77% and that the other variables not taken in the research study impact the dependent variable by 23%. This means that the independent variables capital adequacy ratio, nonperforming financing, efficiency of management operations, earnings after tax, and liquidity altogether effect the customers' funds up to 77% by taking into the moderating effect of transparency in Islamic banks.

Table 4.6 also confirms the hypothesis  $H_1$  that capital adequacy ratio with  $p$ -value  $< 5\%$ , has a significant and positive relationship with customers' funds. This translates to the higher capital requirements for Islamic financial institutions being an attractive element for customers' funds. This result is similar to that concluded by Hasbi and Haruman (2011).

The second hypothesis  $H_2$  is also supported as nonperforming financing by Islamic banks is significantly but negatively associated with the customers' funds as  $p$ -value is less than significant level at 5%. The result reflects that higher the uncollectable financing receivables, lower is the volume of customers' funds and so is the people's confidence in Islamic financial institutions. This finding is similar to that concluded by Zaini and Rosly (2008).

According to the table 4.12 the third hypothesis  $H_3$  is also sustained as the management's operational efficiency ratio is also positively and significantly related with customers' funds with the  $p$ -value less than significant level at 5%. This shows that the greater efficiency ratio significantly attracts customers' funds. This finding is also similar to that concluded by Hasbi and Haruman (2011).

The findings in table 4.15 are not supported for the relationship between net earnings and the customers' funds as the p value is higher than significant level. This result is contrary to that concluded by Hasbi and Haruman (2011). As such hypothesis H<sub>4</sub> is not supported.

The last hypothesis H<sub>5</sub> is also supported as the result indicates significant and positive association between liquidity and the customers' funds as the p value is also less than significant level at 5%. This means customers' funds is greatly attracted by higher level of liquidity in Islamic financial institutions. This finding is similar to that concluded by Hasbi and Haruman (2011) and Ismal (2011).

## 5 Conclusion and Policy Implication

This study has attempted to analyze the moderating effect of transparency between the bank specific financial variables (CAMEL) and customers' funds for Islamic banks in Pakistan. The five key elements of CAMEL have been used as independent variables which are: capital adequacy ratio, assets quality (non performing financing), management quality (operational efficiency), profitability and the liquidity. The study concludes that only four variables (capital adequacy, assets quality, management quality and liquidity) out of five have significant impact on the variable of interest i.e. customers' funds for Islamic banks in Pakistan through the moderating role of transparency. Whereas, the variable profitability (net earnings after tax) does not have significant relationship with the dependent variable through the moderation of transparency. Moreover, the study concludes that Islamic banks in Pakistan can impact their customers' funds with transparency moderating through capital adequacy, assets quality (non performing financing), management quality and liquidity position. These findings are similar to that concluded in earlier studies such as Zaini and Rosly (2008), Hasbi and Haruman (2011) and Ismal (2011).

The study has reached that transparency moderates between the key elements of bank performance and the behavior of the customers and their approach towards Islamic banks such as capitalization, management efficiency and the liquidity. This means that high levels of capital adequacy, management efficiency and the liquidity will generate high level of customers' funds. Whereas increase in non performing financing carrying significant default risks will result in decrease in public confidence in Islamic banks. Similarly, the study shows that the element of profitability does not affect deposit level significantly.

The study suggests the need for maximum utilization of Islamic bank assets so as to attract more deposits. The selection and wise use of financing i.e. least level of non performing financing will improve the confidence of customers towards Islamic financial sector, because the behavior of customers is sensitive to credit and operational risks. The study also suggests regulator to set optimal capital adequacy ratio for Islamic banks as compared with the conventional banks to increase the level of public confidence. Above all, the regulator is suggested to ensure higher level of transparency in Islamic banks by setting guidelines with respect to Shariah Compliance and its continuous review through the internal and external Shariah audit. Moreover, the study suggests some attractive opportunities by way of investing funds under Islamic modes like Islamic banks joint financing for government and Islamic investment portfolio in infrastructure sectors such as roads, dams, universities, modern agriculture, health and social services.

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This study contains two limitations. Firstly, this study focuses exclusively on the Islamic banks working in Pakistan. Secondly, the study does not take into consideration banking regulations particularly with regard to transparency related guidelines.

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