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# Impact of Endogenous and Exogenous Factors on Financial Compatibility of Interest Bearing and Non-Interest-Bearing Financial Institution of Pakistan

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*Performance, Conventional banks, Islamic banks, profitability, Economic variables, GDP, CPI, interest rate, Exchange rate, bank specific internal variables, and financial ratios.*

***ABSTRACT***

The main purpose of this study is to analyze the differences between Islamic and commercial banks' performance. The growth in the size and increase in the number of Islamic banks shows that the Islamic banking system is considered as an alternative to the conventional banking system. Due to this, comparisons in terms of performance measurements and evaluation of the financial health of both types of banks are essential. This research paper investigates the bank efficiency as basic performance measurement in the Conventional and Islamic banks in Pakistan in the period between 2006-2024 using annually-published report data of banks operating in Pakistan with 10 Conventional banks and 4 Islamic banks as the samples for the study. Eighteen years of secondary data were collected from the annual report for each bank. Return on Asset ratio is chosen as the dependent variable, while capital adequacy, asset quality, management quality, earnings and liquidity (CAMEL), and four external variables economic growth, inflation, consumer price index, interest rate, and exchange rate are the independent variables. Descriptive analyses were done to understand the data. The independent t-test and Mann-Whitney test show the differences between Islamic and conventional banks based on the financial variables. The stepwise and hierarchical multiple regressions were used to determine the factor that affects the profitability performance of banks. Results show that there is a significant difference between Islamic and conventional banks' performance.

## INTRODUCTION

Islamic and conventional banks ideology is different from each other, Islamic banks are interest-free and they share their profit and loss with their customers but Conventional banks

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are interest-based and they earn their profit from interest (Samad 2004). Financial ambiance between partners, intermediaries, lenders, and borrowers is created by the principles of the Islamic financial system (Yudistira 2003). These two banking systems Islamic and conventional have a large difference in authority structure and rules and regulation also. A diverse set of rules and regulations needs to be followed by Islamic banking and financial systems – those given by the Holy Qur'an, & are according to Muslim's viewpoint and meet up the viewpoint and culture (Suleiman, Halestrap et al. 2001).

Islamic banking operation and its contracts are continuously governed and checked by Fiqah to ensure it keeps up with the basic rules of sharia (Khan, Qayyum et al. 2005). According to (Suleiman, Halestrap et al. 2001) Investment behavior in Sharia-based contract was governed according to the following four rules:

In Islamic banking system avoid such business activities, contracts and agreement that involves riba (interest)

1. To avoid the involvement in hypothetical or suppositious activities (Gharar)
2. To promote the tax system in Islam by paying it in form of Zakat.
3. To avoid the production of such products and services that is forbidden in Islam.

In Pakistan, efforts were made for the first in 1979 to promote the Islamic banking system, and in 1985 interest was eliminated from banking operations. The entire financial system was changed into an interest-free system suddenly, which caused the failure of true Islamic banking practices due to incapability and lack of knowledge of human resources. So, in 1999 the system in practice was declared as Shari's non-compliant by the higher judiciary. Keeping in view the consequences of the 80's approach. Although Pakistan was among the countries to explore Islamic banking, was not following the idea of sharing the Profit and Loss, which is the foundation of modern Islamic banking, and most of the banking transaction was carried out in other ways. Islamic financial industry consists of a network of 22 interest-free banks including five full-fledged Islamic banks and seventeen conventional banks having Islamic branches. There are approximately 2851 branches of Islamic banks performing their operations in 113 districts.

Islamic Banks perform their operations according to the principles of Sharia and prohibit interest-based transactions in their operations while promoting profit sharing on deposits or investments. The purpose of both types of banks is the same except that Islamic banks must operate by laws and regulations of Islam. Many scholars previously have measured the performance differently by using different determinants and different tools of statistics, as the performance cannot be simply reflected by the financial statement analysis. The Islamic

banking industry is developing very fast. Islamic banking is in a booming stage in the banking industry of Pakistan, because of the people's interest and SBP continuous pressure on banks to promote the growth of Islamic banks while the conventional banking system is already developed. The first objective of this study was conducted to find out the factors that affect Islamic and conventional banks' profitability and to figure out which sector is performing better comparatively. Another objective of this study was also to analyze the comparative performance of both the types of financial institutions to conclude that:

Whether the Islamic banks can perform, grow, and meet customer satisfaction in the highly competitive financial market?

To analyze which one of these two banking streams (Islamic or financial) is performing better.

To analyze the impact of bank-specific internal variables and external economic variables on the performance or profitability of both the banking streams (Islamic and Conventional).

The specific objective of this research paper was to study the performance determinants and also to conclude which stream of the bank among both was performing better and which one was growing rapidly.

To critically examine Islamic and conventional banks' performance in Pakistan using various performance determinants.

The performance of both streams of banks was analyzed in terms of bank-specific internal variables and external economic variables.

***Research Questions***

RQ 1. What is the influence of bank's internal factors that is capital adequacy ratio, asset quality ratio, management quality ratio, earning quality ratio, and liquidity ratio on performance of both (Islamic & Conventional) stream of banking?

RQ 2. What is the impact of economic variables (economic growth GDP, Consumer price index (inflation), interest rate, and exchange rate on the performance of Islamic commercial banks and conventional commercial banks?

RQ 3. Whether the performance of both the streams (Islamic and conventional) differ from each other

RQ 4. Which of the banking stream is the best performer in both streams?

## REVIEW OF LITERATURE

***Internal variables***

***Capital Ratio***

Vong and Chan (2009) discussed that a bank is said to be highly profitable and safer when it has a high capital ratio such as explained by Vong and Chan (2009). It was proved through

their statistical research that capital ratio influences profitability positively. It was also found from the study of Bashir (2000), that there is a direct relation of capital adequacy ratio with profitability. Similarly, a direct relationship of capital with profitability was explained by Abreu and Mendes (2010). According to this study, a bank that has a good capital structure will not get bankrupt and have very fewer chances of bankruptcy and such banks earn good profits. Capital adequacy ratio is one of the important variables that best determines the performance of banks (Al-Tamimi and Charif, 2011).

Although, most of the previous studies showed a significant direct relationship between the capital adequacy ratio and performance. On the contrary, some studies explained the opposite relation between both the variables, it was concluded that capital ratio and conventional banks' profitability are negatively associated. It could be revealed from the work of some of the researchers including (Masood and Ashraf 2012) as their findings suggest that Asset size, Capital ratio turn out to have a significant influence on the performance of IB. (Kok, Tan et al. 2012) conclude their study that the capital ratio and profitability of Islamic banks are inversely related to each other in Malaysia. They have explained the agency cost hypothesis. Berger 2015 states that agency cost will decrease by a reduction in the ratio of capital adequacy that will lead to improving the profitability of firm ultimately same could be revealed from the work of (Wasiuzzaman and Tarmizi 2010). Wasiuzzaman and Tarmizi (2010) through their study explained that the capital adequacy ratio negatively impacts banks' profitability. The greater the capital adequacy ratio of the firm the lessor will be its profitability. Further researchers showed through the statistical results that the performance of interest-free banks was better in possessing adequate capital compared to conventional (Nisar and Rasheed 2020).

Capital is considered a protective sheet for banks. Financial institutions need to keep a certain amount of capital with them to meet the financial need in time.(Yigitcanlar, Kamruzzaman et al. 2019). By literature review and previous studies, it was found that capital affects banks' profitability positively. A bank with a high capital ratio will have low risk and thus it will have high profit and improved performance as it does not get involved in risky activities that could bring it loss (Bourke 1989). However, contrary to the above results some researchers found that the capital ratio and profitability are negatively related (Kok, Tan et al. 2012). In this study, to check the impact of capital ratio on profitability, the following hypotheses were developed between capital ratio and Return of Asset (ROA):

**$H1_a$:** *Capital adequacy significantly impacts the performance of Islamic banks (IB) and conventional banks (CB).*

***Asset Quality***

Previously, many researchers have explained that the quality of assets harms profitability for both banking systems. It could be revealed from the research work of (Jamal Hamidi et al. 2012) They discussed in their studies that assets quality and profitability are negatively related. Their inverse relation depicts that banks profitability will decrease if it has high exposure to credit risk. The research work of (Awan 2009) shows that the quality of assets of interest-free banks is better than Interest-based banks because Islamic banks have a very small rate of default risk. Awan studied the relative performance of Islamic and conventional banks.

Hassan 2015 in his study used a loan loss reserve to gross advances ratio and impaired loan over total finances. Francis's 2014 research showed that quality of assets ratio and profitability are the directly related and calculated quality of assets by assuming the overall increase in the deposits of banks indicator and found that higher rate of interest leads to the increased earnings. A competitive bank would keep a low ratio of investment to the asset because a high ratio suggests that the bank has kept have additional investment to itself from the non-Performing Assets risk. This negatively and adversely influences profitability. (Ahmed and Ab-Rahim 2021). They conducted ratio (CAMEL) analysis in a study of the performance of banks. Asset Quality which measures the strength of banks is calculated in their study by the ratio of Total Investments to Total Assets.

It was important to observe and check the quality of assets regularly in banks because it increases the chances of default risk that could lead to the solvency of banks. Hence, to increase the profitability of banks and reduce the chances of default risk, the banks should keep a check on the quality of assets and try to improve them. The quality of assets and profitability of banks are inversely related (Jamal, Hamidi et al. 2012). The level of provision increases with increasing lending activities. Although bank earns by lending more it increases the chances of credit default risk. Poor quality of assets is assumed to have greater chances of default and thus will reduce the profitability of banks. Poor quality of assets affects bank performance negatively. Accordingly, the following hypothesis is developed:

**H2:** *Quality of Assets significantly impact performance of IB and CB.*

***Management Capability***

Havidz and Setiawan (2015) conducted research to study the relation of management capability with profitability and found direct and significant relation of ROA with that of management capability ratio. Havidz and Setiawan (2015) revealed a negative and insignificant relation of management ability with ROA. Management capability has a negative significant impact on ROA (Hesti, 2010). Hasan and Dridi (2010) revealed that management practical deficiencies

of several Islamic banks caused a substantial decrease in profitability in 2009 contrary to CB. The management capability ratio of conventional banks is higher than Islamic banks.

Management quality is the capacity of the organization to perform different functions efficiently and achieve its objectives. Wasiuzzaman and Tarmizi (2010) found a positive influence between both. Varying results have been found from previous studies. Management decision influences the cost of bank. The positive perspective suggests that increased expenses bring positive change in profitability. It can be justified by the statement that high salaries (expense) increases the employee's productivity while some researchers argued that increased expenses in the banks reduce its profitability. Hence, the following hypothesis is developed:

**H3:** *Management efficiency significantly impacts the performance of IB and CB.*

***Earnings Quality***

The important factor in determining the performance of banks is earning quality. Parashar (2010) studied the comparative performance of CB and IB in the Gulf countries prior and throughout the global financial crisis using six financial ratios, and it was found from results that global financial crises affected Islamic banks more in terms of leverage, capital adequacy ratio and ROE while it has affected the conventional banks' return on assets and liquidity more than Islamic banks. Earning ability of Conventional banks is better than Islamic. Management's ability, earning quality ROE, liquidity ratio, and market sensitivity ratio interest-free banks are greater than conventional banks while ROA, capital ratio, and quality of assets of CB are higher relative to IB.

By studying the previous researches, different authors have presented different results. According to some authors, there is a significant relation between ROA and Earnings. Parashar (2010) in their study used the ROE to describe Earning. Azimah Azizud-din et al. (2016) in their study used ROE to explain the earning quality and found that Earning power of Islamic banks is higher and ROE is highly significant in affecting banks' performance. While some other studies show contrasting results. Therefore, the following hypothesis was formed between Earning and ROA.

**H4:** *Earning Quality significantly impacts the performance of IB and CB.*

***Liquidity***

The profitability of banks can also be determined by an internal factor that is its liquidity ratio. Many researchers have worked to study the relationship of liquidity with performance and to draw a conclusion about the relation between both the variables. The study of Islamic banks reveals different results. Some studies suggest that liquidity has a significant impact on profitability and both liquidity and profitability are directly related (Akhtar and Zaheer 2014) .

According to the study of Asutay and Izhar (2007), liquidity and profitability are inversely related. Although, this study also revealed a significant impact of liquidity on profitability, it showed a negative association between both the variables. Liquidity has no impact on profitability so it cannot be used to indicate the profitability of banks in Malaysia (Idris and Dollard 2011). Liquidity does not show a significant relationship with profitability for Islamic banks. Moin (2008) found that in terms of liquidity there is no important dissimilarity between two groups of banks. Research found that Islamic banks have a better liquidity position than conventional banks by applying Camel test.

Research further found that liquidity and banks' profitability are inversely related. Franci (n.d) found that banks' high liquidity means that they are keeping more of the excess cash with them rather than giving loans. So when the lending of banks decrease, it will reduce the interest-earning as well as the overall profitability of banks. Sufian and Habibullah (2010) suggested a negative relationship between liquidity and profitability. Hence, the following hypotheses were developed between liquidity and Return of Asset (ROA):

**H5:** *Liquidity significantly impacts the performance of IB and CB.*

***Bank Type***

It is found that Islamic and conventional banks' performance differs slightly. Islamic commercial banks' performance is better. Chaker and Salih (2010) researched to analyze the performance of Islamic banks comparative to conventional banks in UAE and they found that Islamic banks performance is better than conventional banks. Similarly, a study by Khediri, Charfeddine et al. (2015) also showed that the profitability of IB is greater than CB. Bank type is used as moderating variable. It is used for grouping Islamic commercial and Conventional commercial banks and to differentiate both streams of banks. The objective of the study is to analyze the comparative performance of interest-based and interest-free financial institutions and to draw a conclusion on which banking sector is performing comparatively. Hence, the following hypothesis is developed

**$H1_b$:** *There is a significant relationship between the performance of IB and CB*

***External variables***

***Economic Growth***

Economic growth measures the output produced in a country and all the economic activities conducted in a specific country. It is gauged by GDP in our study. Chua (2013) also found that Economic growth tracked GDP is in direct relation with profitability (ROA) of Islamic banks. He conducted his study on Malaysian Islamic banks using internal and external factors. His study implies that banks during good economic conditions lend more and charge higher

margins which in turn improve their profitability and performance as well. From the study by Loke, Ong et al. (2015) it is found that banks profitability and economic growth are positively related to each other. Their study found that economic growth GDP has a positive impact on the performance of banks or banks profitability. Salike (2017) found from his study the significant positive impact of GDP on profitability. Rahman, Jan et al. (2018) also found from their empirical result the significant positive relationship of economic growth with profitability. Regardless of Islamic and conventional banks, an overall positive relationship between economic growth and profitability is suggested by most of the studies of different authors.

Previously, the impact of Economic growth on banks' performance has been studied. Setyawati, Suroso et al. (2017) found a positive relationship between economic growth and Banks performance and justified their studies by arguing that during good economic conditions people have excess capital that they deposit or invest with a bank that in turn increases the lending activities of banks and rises the bank's profitability. During good economic conditions, banks lend more and charge a high margin that increases their profits. Bashir (2003) and Ben Khediri (2009) researched Islamic banks and found the same results. However, Sufian (2009) found that GDP is negatively related to banks' profitability. He argued that when there is volatile economic growth in the country then demand for financial services decreases and the non-performing loan amount will increase. Based on the literature reviews following hypotheses were developed between Economic growth and Profitability:

**H6:** *Economic growth (GDP) rate significantly impacts the performance of IB and CB.*

***Consumer Price Index CPI (Inflation)***

Inflation in an economy is the general increase in the price level of goods and services and it is considered as one of the important determinants of banks profitability. It can have either a positive or negative impact on banks' profitability. As evidenced by different research studies there is a positive relationship between inflation and banks profitability assuming that with inflation cost also rises which leads to higher profit. Also it is suggested a positive relation between inflation and banks profitability exists suggesting that with inflation, the interest rate also rises that would eventually increase interest earnings.

However, Kanwal and Nadeem (2013) found an inverse relation of inflation with the profitability of banks. When banks management is not efficient enough to monitor the interest rate then its cost will be more than its revenues and inflation will negatively affect banks' profitability. Researchers carried out a study on Islamic banks and found a positive relationship between inflation and banks' profitability. Zeitun (2012) analyzed the comparative

performance of Islamic and conventional banks and found a negative relation between inflation and banks' profitability. After reviewing the literature following hypothesis is developed:

**H7:** *The consumer price index (CPI) significantly impacts the performance of IB and CB.*

***Interest Rate***

Interest rate is the amount charged as the percentage of principle by the lender for the use of the specific asset. Chan and Vong (2014) found that interest rate has insignificant impact on banks performance. Hakan and Gulumser (2013) found that interest rates affect bank's performance of Islamic banks. He conducted his study on the Turkish Islamic commercial and conventional commercial banks. Sattar and Khan (2014) studied the impact of changing the interest rate on banks' profitability and found that changing rates of interest affect banks' earning. They assumed that when the interest rate is high, banks increase the lending rate more than the deposit rate so the borrower will bear the impact of a high-interest rate and banks' performance will not be affected as such. Obidike et al. (2015) found that interest rate has a statistically significant negative relationship with the financial performance of commercial banks. Farzana (2015) found that interest rate has a significant impact on banks performance, while Rashid and Jabeen (2016) study gives the contrary results, they found from statistical results that interest rate has a negative influence on banks performance. Owusu, et al. (2017) found a statistically insignificant positive relationship between interest rate and banks' profitability. It is the amount charged as the percentage of principle by the lender for the use of specific asset. The studies by Staikouras and wood (2004), Athanasoglou, Brisimis, and Delis (2005) and Cheang (2005) found that interest rate has a significant positive influence on banks performance (ROA). Haron and Azmi (2004) conducted a study on Islamic banks and found that interest rate is in inverse relationship with ROA. Farzana (2015) showed that IR has a significant impact on banks' performance, while Rashid and Jabeen (2016) gives contrary results, they found from statistical results that the interest rate and performance of banks are negatively related. Thus, the following hypothesis is considered:

**H8:** *Interest rate significantly Impacts the performance of IB and CB.*

***Exchange rate***

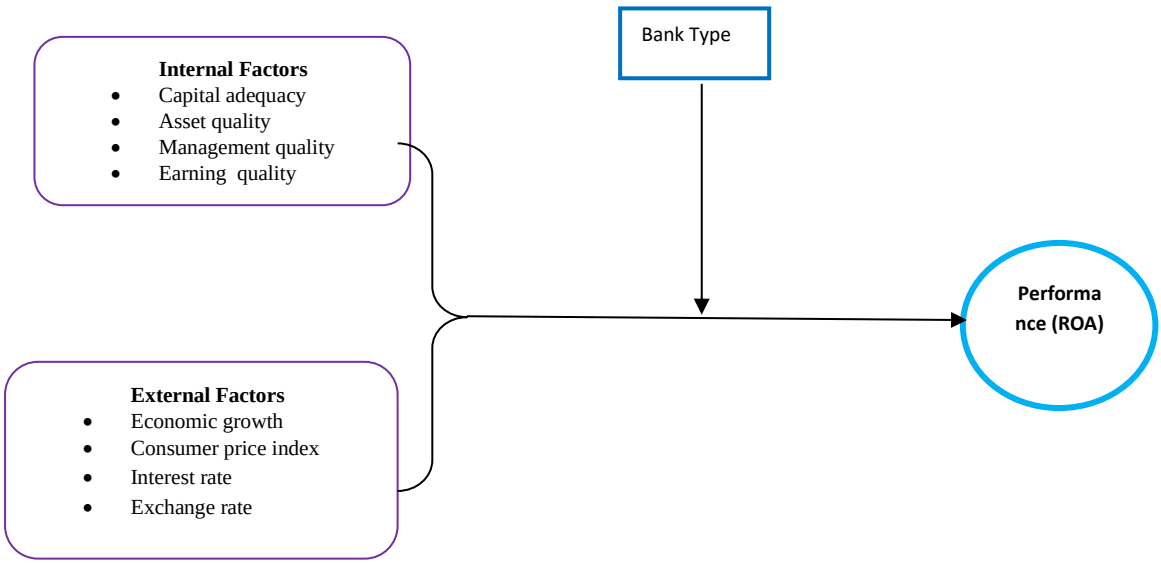
The foreign exchange rate plays a crucial role in both developed countries and developing countries as well. For the establishment and survival of multinational companies. Many scholars have conducted studies to determine the impact of foreign exchange rates on banks' performance. Muhammad Ali (2012) found that exchange rates have a positive but statistically insignificant impact on the Islamic bank's performance. It could be suggested that to get maximum profit there should be a separate policy for Islamic banks by the central bank. Addae,

Nyarko-Baas, and Tetteh (2014) conducted a study on Ghanaian banks and found the impact of exchange rate fluctuations on banks' performance. Pancras and Otieno (2015) conducted their study on banks in Kenya. The found from their empirical results that exchange rates have a significant influence on bank's ROA and are positively related. It is also found from their study that fluctuations in the currency exchange rate in a country impact the financial performance of banks.

Majok (2015) found a positive relationship between fluctuations in the exchange rate and bank performance. They conducted their study on 43 commercial banks in Kenya using secondary data. Ahmed (2015) also analyzes the impact of exchange rate fluctuations performance. He sued both primary and secondary data to analyze the exchange risk exposure on commercial banks' performance. The study was not able to clearly show the relationship that existed between variables. Manyo et al. (2016) research showed inconclusive results about the relationship that existed between the determinants and performance variable. Muhammad Ali (2012) found that the exchange rate has a positive insignificant influence on the performance of IB. It could be suggested that to get maximum profit there should be a separate policy for Islamic banks by the central bank. Addae, Nyarko-Baas, and Tetteh (2014) conducted a study on Ghanaian banks and found the impact of exchange rate fluctuations on banks' performance. Pancras and Otieno (2015) and Majok (2015) found from their empirical results that exchange rates have a positive influence on banks' performance.

**H9:** *Exchange rate significantly impacts the performance of IB and CB.*

**Conceptual Framework**



## METHODOLOGY

In a comparative study of factors of Performance of Islamic banks and conventional banks in Pakistan, we used data of 18 years that is from 2006 to 2024. Data included has been gathered from annual reports & Financial Statement Analysis of SBP. Income statement and balance sheet of 4 Islamic banks and 10 conventional banks in Pakistan have been searched. The data about the external variables were collected from the World Bank and Pakistan Bureau of Statistics. Secondary data was collected about both the regressor and regress and. This data was used further to find the impact of regressor on regress and the comparative analysis of the profitability of both banking streams. The empirical analysis was conducted using the data collected to conclude the importance of study through statistical results.

The articles and annual reports of both the banks' type in Pakistan have been reviewed and secondary panel data was collected and used. The secondary panel data was collected from the 18-year annual reports for each stream of the bank from the year 2006 to 2024. The data of 4 Islamic commercial Banks and 10 Conventional commercial banks in Pakistan were obtained during the period from 2006 to 2024 The collected data was examined by use of the Eview program and SPSS for conducting statistical tests of Descriptive statistics, Stepwise regression Analysis, and Independent Sample T-tests. Eview has been used to analyze the normality and for descriptive statistics while SPSS was used for Stepwise regression analyses and independent Sample T-tests and it provides us the statistical results about the regressor and regress and's relationship of both the banking types. It also provides the comparative performance analysis of both the streams of banks. Panel data analysis was also carried out to more accurately observe data and draw precise and authentic conclusions. The hypotheses were checked based on the result obtained from statistical analysis tests. The 0.05 was chosen as the significance level.

***Model Specification***

***Economic Function***

**ROA =** *f (Capital Adequacy ratio, Quality of Assets, Management Quality, Earning Quality Liquidity and Bank Type)*

**ROA =** *f (Economic Growth, Consumer price index, Interest rate and Exchange rate)*

***Economic Model***

$Y = \beta o + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \beta BTXBT + \mathcal{E}$

$Y = \beta o + \beta 6X6 + \beta 7X7 + \beta 8X8 + \beta 9X9 + \beta BTXBT + \mathcal{E}$

***Y:*** *performance (ROA), β0: The intercept of model, βi: Coefficients of Independent variables*

***X1:*** *Capital adequacy ratio,* ***X2:*** *Quality of Assets,* ***X3:*** *Management capability,* ***X4:*** *Earning*

*Efficiency, **X5:** Liquidity, X6: Economic Growth, **X7 :** Consumer price index, **X8 :** Interest rate, **X9 :** Exchange rate, **XBT:** Bank type, **Ɛ:** The error term*

## Results and Discussion

**Table 1 Summary of Descriptive Analysis (Internal variables)**

| Statistics | ROA | Capital Adequacy | Asset Quality | Management Quality | Earning Quality | Liquidity |
|---|---|---|---|---|---|---|
| **Group1:All Banks** | | | | | | |
| Mean | 0.004 | 0.092 | 0.333 | 0.608 | 0.046 | 0.101 |
| Maximum | 0.024 | 0.540 | 0.690 | 1.020 | 2.350 | 0.290 |
| Minimum | -0.054 | -0.020 | 0.060 | 0.230 | -1.990 | 0.040 |
| Standard Deviation | 0.014 | 0.072 | 0.127 | 0.138 | 0.392 | 0.044 |
| Skewness | -2.152 | 2.873 | 0.233 | 0.305 | -2.006 | 1.562 |
| Kurtosis | 5.819 | 14.66 | 2.444 | 2.973 | 23.66 | 6.104 |
| Observation | 168 | 168 | 168 | 168 | 168 | 164 |
| **Group2:Commercial Banks** | | | | | | |
| Mean | 0.026 | 0.086 | 0.364 | 0.615 | 0.045 | 0.093 |
| Maximum | 0.024 | 0.543 | 0.686 | 1.024 | 2.347 | 0.269 |
| Minimum | -0.054 | -0.025 | 0.122 | 0.230 | -1.990 | 0.045 |
| Standard Deviation | 0.014 | 0.069 | 0.119 | 0.146 | 0.455 | 0.035 |
| Skewness | -2.418 | 3.243 | 0.161 | 0.208 | -1.778 | 1.485 |
| Kurtosis | 7.244 | 16.315 | -0.556 | 0.314 | 15.597 | 3.900 |
| Observation | 120 | 120 | 120 | 120 | 120 | 120 |
| **Group 3: Islamic Banks** | | | | | | |
| Mean | 0.035 | 0.118 | 0.237 | 0.570 | 0.028 | 0.129 |
| Maximum | 0.054 | 0.56 | 0.626 | 0.82 | 0.246 | 0.306 |
| Minimum | 0.026 | 0.028 | 0.024 | 0.36 | 0.058 | 0.048 |
| Standard Deviation | 0.013 | 0.093 | 0.111 | 0.149 | 0.168 | 0.063 |
| Skewness | -2.061 | 2.420 | 0.648 | -0.926 | -3.721 | 0.987 |
| Kurtosis | 4.932 | 6.313 | 0.691 | 2.888 | 20.521 | 0.476 |
| Observation | 48 | 48 | 48 | 48 | 48 | 48 |

**Table 2 Leven's Test for two independent sample**

| Variables | T-Test for Equality of Means | | | | |
|---|---|---|---|---|---|
| | T | Df | Sig (2-tailed) | 95% confidence interval of difference | |
| Equal variance not assumed | | | | lower | Upper |
| Asset Quality | 6.558 | 92.024 | 0.000 | 0.089 | 0.166 |
| Management Quality | 1.770 | 84.82 | 0.080 | -0.005 | 0.095 |

**Table 3 Mann-Whitney nonparametric test for two independent samples**

| | Mann-Whitney U | Z | Asymptotic Sig. (2-tailed) |
|---|---|---|---|
| ROA | 1724.500 | -4.057 | 0.000 |
| Capital Adequacy | 2184.500 | -2.442 | 0.015 |
| Earning Quality | 2056.500 | -2.891 | 0.004 |
| Liquidity | 1853.500 | -3.604 | 0.000 |

**Table 4 Regression Output Analysis (Internal variables)**

| Variable | Coefficient | Standard Error | Beta | t-statistic | p-value | Tolerance | VIF |
|---|---|---|---|---|---|---|---|
| Capital Adequacy | -0.023 | 0.011 | -0.126 | -2.120 | 0.036 | 0.798 | 1.253 |
| Asset Quality | 0.013 | 0.009 | 0.120 | 1.425 | 0.156 | 0.399 | 2.505 |
| Management Quality | 0.003 | 0.007 | 0.034 | 0.478 | 0.633 | 0.555 | 1.802 |
| Earning Quality | 0.025 | 0.002 | 0.674 | 12.116 | 0.000 | 0.910 | 1.098 |
| Liquidity | 0.019 | 0.020 | 0.061 | 0.924 | 0.357 | 0.643 | 1.556 |
| Bank Type | 0.04 | 0.20 | -0.119 | 2 | 0.04 | 0.627 | 1.595 |
| Constant | 0.901 | 0.23 | --- | 3.91 | 0.03 | | |

**Tables 5: Summary of Descriptive Analysis (External variables/ Economic variables)**

| | CPI | GDP | INR | ROA | EXCHANGE |
|---|---|---|---|---|---|
| Mean | 7.254923 | 1.857777 | 20.41229 | 0.111667 | 48.73086 |
| Median | 6.836314 | 1.588203 | 19.27239 | 0.100000 | 51.57444 |
| Maximum | 12.36819 | 5.776950 | 30.56659 | 0.220000 | 61.92716 |
| Minimum | 2.914135 | -1.633039 | 13.11698 | 0.080000 | 30.56659 |
| Std. Dev. | 3.724132 | 2.161133 | 5.561400 | 0.040862 | 11.52800 |
| Skewness | 0.189337 | 0.481792 | 0.449606 | 1.711944 | -0.427773 |
| Kurtosis | 1.442980 | 2.688266 | 2.067646 | 5.124400 | 1.668923 |
| Jarque-Bera | 1.283853 | 0.512835 | 0.838933 | 8.118040 | 1.251862 |
| Probability | 0.526277 | 0.773819 | 0.657397 | 0.017266 | 0.534763 |
| Sum | 87.05907 | 22.29332 | 244.9475 | 1.340000 | 584.7703 |
| Sum Sq. Dev. | 152.5607 | 51.37543 | 340.2209 | 0.018367 | 1461.842 |
| Observations | 12 | 12 | 12 | 12 | 12 |

**Tables 4.6: Regression Output Analysis (Conventional banks)**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| CPI | -0.010547 | 0.002663 | 3.960475 | 0.0042 |
| GDP | 0.223299 | 0.012101 | 2.272666 | 0.0420 |
| EXCHANGE | -0.344225 | 0.003508 | 1.964184 | 0.0029 |
| INR | -0.328700 | 0.009681 | -1.998599 | 0.0031 |
| R-squared | 0.632874 | Mean dependent var | | 0.111667 |
| Adjusted R-squared | 0.554202 | S.D. dependent var | | 0.040862 |
| S.E. of regression | 0.039718 | Akaike info criterion | | -3.352818 |
| Sum squared resid | 0.012620 | Schwarz criterion | | -3.191183 |
| Log likelihood | 24.11691 | Hannan-Quinn criter. | | -3.412661 |
| Durbin-Watson stat | 1.934898 | | | |

**Table 4.7 Regression Output Analysis (Islamic banks)**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| CPI | 0.023101 | 0.002663 | 3.960475 | 0.0038 |
| GDP | 0.893299 | 0.012101 | 2.272666 | 0.0490 |
| EXCHANGE | 0.504225 | 0.003508 | 1.904184 | 0.0629 |
| INR | -0.008700 | 0.009681 | -0.898599 | 0.9951 |
| R-squared | | 0.742874 | Mean dependent var | 0.111667 |
| Adjusted R-squared | | 0.055202 | S.D. dependent var | 0.040862 |
| S.E. of regression | | 0.039718 | Akaike info criterion | -3.352818 |
| Sum squared resid | | 0.012620 | Schwarz criterion | -3.191183 |
| Log likelihood | | 24.11691 | Hannan-Quinn criter. | -3.412661 |
| Durbin-Watson stat | | 1.934898 | | |

Firstly, descriptive analysis is presented in table-1 (internal variables) and 5 (external variables). We have found from our results that the mean values of both interest-based and interest-free financial institutions differ from each other in a small amount. The overall mean values of profitability ROA of interest-free financial institutions is greater than interest-based financial institutions. The capital ratio and liquidity mean values are also greater of IB than CB. However, the mean values for capital ratio, management quality ratio and earnings ratio of Commercial banks is greater than Islamic banks.

Nonparametric Mann-Whitney and Levene's Tests are performed on data to check the difference between commercial and Islamic banks variance. Man Whitney test is applied on variables that could not be distributed normally while another one is conducted on variables that are distributed normally. Our dependent variable is ROA. The variables are tested to check the comparative performance of interest-based and interest-free financial institutions. We have chosen bank type as moderating variable. Levene's test is conducted for asset and management quality because these two variables are normally distributed (Table 2). The f-value of Asset Quality is 0.612 and the probability value is smaller than 0.05. we accept the alternative hypothesis and reject the null hypothesis. We assume that there is a difference in the performance of both types of financial institutions. It is found that the variance of both the streams of banks varies from each other significantly. As we have accepted H1 so the results of equal variances are applied.

The f-value of Management quality is 0.059 while the probability value is 0.08 and is more than 0.05. So we will accept null H0 hypothesis which concludes that there is no significant difference in the managerial capability of Islamic and commercial banks. Man Whitney test results are presented in table-3, The results show a significant difference for ROA, Capital adequacy Earning, and Liquidity variables for both streams of banks (Islamic and conventional banks). Descriptive analysis, results show that Islamic banks have higher means of ROA, capital adequacy, and liquidity, as compared to commercial banks while commercial banks have higher values of means for the quality of Asset ratio, Management Capability, and Earning

ratio and Islamic bank's performance, is better in terms of profitability, capital adequacy, and liquidity while commercial banks performance is better in term of Asset Quality Management Capability and Earning.

The results of the Mann-Whitney test and Descriptive analysis result comply with each other. ROA and capital ratio and liquidity of IB are greater than CB. Islamic banks are more liquid as they rely more on investment activities while making finances. It shows that Islamic banks can handle market risk. The results of this study are consistent with the results of Azima Aziz-ud-din et al. (2016). The variables that have very high or very low values are called outliers.

Regression Analysis and Output Analysis are given in Table-4, R2 value is 0.546. It shows the fitness of the regression model and it also concludes that 54.6% of the total variances in performance of banks ROA is explained by the regression model. It is also found that there is no multicollinearity from the values of variance inflation factor and tolerance. The values of the Durbin –Watson statistic also determine that our regression model is well specified. As the value of the Durbin-Watson statistic is 1.451. By analyzing the external performance determinants that are given in table 4.5, 4.6, and 4.7, it is found that the GDP of both types of banks has a positive influence on ROA. Consumer price index and interest rate have a significant negative impact on the performance of conventional banks. CPI of Islamic commercial banks affects the profitability of banks positively. Exchange rate and interest rates influence insignificantly the performance of Islamic commercial banks.

***Major findings***

***Capital Adequacy Ratio***

Total equity to total assets is used as the measure of the Capital adequacy ratio. Capital adequacy was found to influence banks' profitability but it has a significant negative association with ROA. This research work is supported by the study of Hassan and Bashir (2003), who also found a statistically inverse association of capital adequacy ratio with profitability and showed through their study that capital adequacy has a significant impact on profitability but it negatively affects profitability. Lower the capital ratio higher will be the profitability of a bank.

This research results show an inverse relation of capital ratio with profitability and the same are also supported by the study of (Athanasoglou, Delis et al. 2006). This study showed through statistical result that a bank with a good capital structure found to be financially sound. Islamic banks prohibit investments in risky activities that's why they are considered to be less profitable comparatively because risk and return as we know are directly associated.

***Quality of Assets***

The results show that the quality of assets ratio has positive and insignificant relation with profitability. The previous research studies stated in the literature review of this research also showed similar results. The results obtained are similar with the study by Hassan (2013).

***Management Quality***

Management ratio and profitability are found to have a direct insignificant relationship between them. Different scholars including Havidz and Setiawan (2015) conducted their research to analyze the relationship of management capability with profitability. They found that it has a significant positive influence on the return of assets. The results of this research paper comply with studies of scholars, who also revealed no significant inverse relation of management ability with ROA.

***Earning Quality***

We found a highly significant positive relationship of Earning (ROE) with Profitability (ROA). Our results comply with the results of (Azizud-din, Hussin et al. 2016) the study used ROE to explain the earning quality and found that Earning power of Islamic banks was higher and ROE is highly significant in affecting banks performance.

***Liquidity***

From our statistical results, we have found that Liquidity and profitability are directly associated. Liquidity was found to have an impact on profitability. It affects banks' profitability positively. The results obtained in this research paper are similar to the study results of Sufian and Habibullah (2010).

***Bank Type***

It was found that Islamic and conventional banks' performance differs slightly. Islamic commercial banks' performance was better. Chaker and Salih (2010) researched to analyze the performance of Islamic banks comparative to conventional banks in UAE and they found that Islamic banks performance was better than conventional banks. Similarly, Khediri, Charfeddine et al. (2015) also showed that the profitability of IB is greater than CB.

***Economic Growth (GDP)***

From the empirical results of this research paper, it was found that there is a direct association between GDP and profitability of both streams of banks. It is concluded from the results that good economic conditions lead to increased profitability of banks during better economic conditions. People have greater capital on hand that they deposit with banks or make investments and that increase capital with bank help it lend more and earn more on investments.

our results can be supported by the study of previous researchers including (Aziz, Awais et al. 2018).

***Consumer price Index (Inflation)***

Statistically results found that Inflation has an inverse relation with the profitability of conventional banks and it influences ROA significantly. We conclude that during high inflation, the demand for financial services decreases, and also when inflation is unexpectedly high and when the cost becomes higher than income and interest rate was not adjusted accordingly then it reduces the bank's profitability and performance as well. Our study results are similar to the study results of (Islam et al. 2024). Inflation has a positive influence on the profitability of Islamic banks as Islamic banks' earnings are from trading and investment activities. These results are supported by the study of (Rukh, Zeb et al. 2021).

***Interest Rate***

It was found from the statistical results that interest rate is in a significant negative relationship with the performance of conventional banks while Islamic banks possess insignificant inverse relation. The interest rate was found to be insignificant in the case of Islamic banks because Islamic banks do not consider interest rate as it is interest-free banking but in the case of conventional banking, it has a negative impact on banks performance. Our results comply with the results of (Aziz 2017) who also suggested the negative impact of interest rates on banks performance.

***Exchange Rate***

We found from our results that exchange rates have influence on conventional banks' performance and it has no significant impact on the Assets return of Islamic banks. Our results comply with the work of (Otieno 2017).

***Conclusion and Recommendation***

In this research paper, the influence of bank-specific internal and external economic factors on Bank performance/profitability has been analyzed. The performance in terms of internal factors is analyzed by using the CAMEL model parameters is used while for analyzing banks performance in terms of external factors; GDP, CPI, interest, and exchange rate are used. CAMEL ratios and external performance determinants are chosen as regressors while ROA determine the performance of the bank is chosen as regressand. Our sample consists of data from 10 commercial banks and 4 Islamic banks performing their operations in Pakistan. The financial data of 18 years from the year 2007 to 2024 was collected from the bank's official website of the banks, banks statements, annual reports, World Bank, and Pakistan bureau of statistics.

In this research paper, different statistical measures like regression & descriptive analysis, and independent sample T-test are used to check the data and make a conclusion based on the results obtained. The results showed that the Capital Adequacy ratio, earning ratio, and Liquidity ratio was an insignificant relationship with the performance of banks. Capital adequacy has a significant negative impact on ROA. While Earning and Liquidity have a significant influence on ROA and both of these variables are in direct relation with performance. Asset Quality and Management Quality were found to not influence the performance of banks. The performance of interest-free banking institutes is found to be better than interest-based banking institutes, although the difference is found to be very slight. The GDP (growth in an economy) is found to have a significant positive impact on the performance of both Islamic and conventional banks.

Interest rate and consumer price index CPI is found to be in a significant inverse relationship with the profitability of the CB while it is an insignificant direct relation with Islamic banks. The insignificant inverse association exists between IR & profitability of Islamic banks and exchange rates have a significant impact on conventional banks performance and it has insignificant impact on Islamic banks performance. The findings of this research paper are following the theories and results of previous studies. The management of banks can help out from this research paper in their decision-making. It can help the management to work on the basic variables of performance that could have a huge impact on profitability. Similarly, the investors can also take help from this research paper to analyze the bank's performance based on specific determinants before taking any investment decision. It could help them to make good investment decisions. We give suggestions for the researchers conducting a study in the future to have a larger sample size to have more precise and authentic results. We have only touched on the E-views and SPSS system by using Regression, Independent sample t-test, and descriptive statistics to test the data. In future researches, other different statistical tools and econometric techniques can be used to test the model which may produce varying results and can give perspective.

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