

Impact of KOF Globalization on Islamic Banking in Pakistan: A Regression Analysis

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Abstract

This study investigates the relationship between globalization and bank performance in Pakistan, offering insights into the interplay between internal (bank-specific) and external (macroeconomic) factors, alongside multiple dimensions of globalization economic, social, political, technological, and financial. To examine how globalization and key financial indicators influence the return on assets (ROA) of domestic banks in Pakistan, using robust statistical methodologies. This research employs panel data for 43 Pakistani banks from (2008-2023), leveraging the KOF Globalization Index, World Bank datasets, and Thomson Reuters data. Using the Panel Ordinary Least Squares (POLS) regression model, the study assesses the impacts of globalization dimensions, credit risk, bank size, and GDP on ROA. Assumptions of linearity, homogeneity, and multicollinearity are validated using SPSS 24, ensuring methodological robustness. The results reveal a significant negative relationship between financial globalization and ROA (coefficient = -2.2111, $p < 0.01$), underscoring globalization's challenges for Pakistan's banking sector. Political globalization similarly shows a negative correlation (coefficient = -3.2448, $p = 0.0007$). In contrast, bank size positively impacts ROA (coefficient = 2.2255, $p = 0.0001$), highlighting the importance of institutional resilience. These findings align with prior research, notably Nguyen et al. (2018), underscoring the nuanced effects of globalization on emerging economies. The State Bank of Pakistan should promote local investments, enhance risk management, and improve regulatory frameworks to stabilize the financial sector, while also expanding operational capacities and workforce development, and conducting macro-level economic assessments. This study contributes to understanding the intricate dynamics between globalization and banking performance in developing economies, focusing on Pakistan. By integrating multiple dimensions of globalization and financial metrics, it provides a comprehensive analysis with actionable insights for policymakers and financial institutions.

Keywords: *KOF Globalization Index; Bank Performance; Financial Globalization; Return on Assets; POLS; Emerging Economies.*

JEL Codes: *G21, F65, E44, O16.*

1. INTRODUCTION

Levitt introduced the concept of "globalization" in 1985. Theodore highlights the significant global economy transformations in recent years. Throughout the world, financial & economic transformations have occurred in utilization, making, & financing. Globalization

refers to the process through which the worldwide community is becoming increasingly integrated as a result of significant economic, social, political, technological and financial relationships. Globalization has increased goods and experiences' lifespan. Public corporations have been replaced by international enterprises with operations in multiple nations. Globalization ideas posit that the integration of disparate domestic economic entities into a more interconnected global economy would yield benefits in terms of speed, proximity, and cooperation across nations (Ekong, 2016; Iqbal et al., 2023).

Therefore, empirical studies have demonstrated that the adequacy and stability of the monetary framework significantly exceed those obtained via business. Maintenance of a constant condition is recognized as a means to protect the financial system from potential disruptions, contagious diseases, and ethical risks. It determines the financial system's capacity and expertise. However, other scholars such as have raised many issues regarding globalization's impact on domestic banks' development. According to Horen et al. Banks should become worldwide, enhancing communication, freedom, and economic cooperation. In addition, globalization has been attributed to institutional explicit features in banking activities, resulting in increased opportunities for value creation (Focarelli et al., 2005; Iqbal et al., 2023; Nguyen et al., 2018; Sufian et al., 2016; Ghosh, 2016; Shoaib et al., 2013 and Sufian et al., 2012).

Globalization in financial sectors happens as foreign banks access the domestic market. Unfamiliar financial institutions can benefit and harm bank performance. Previous studies were conducted by Sufian et al. (2012); Sohaib et al. (2013); Sufian et al. (2016) and Nguyen et al. (2018) generally agree that globalization has a positive impact on bank performance, namely in terms of return on assets (ROA) and return on equity (ROE). Boot (1999) and Ghosh (2016) argue that globalization in the banking sector has negative implications.

Boot (1999) says government organizations may seek to establish the largest organizations within their respective countries using local methods. It is also argued that globalization, through the entry of foreign banks into the country market, may pose risks to domestic banks. This is due to the potential loss of significant market share to international investors. Unknown financial institutions may challenge domestic banks in globalization. This could reduce the performance of the local bank. In addition, foreign banks are often criticized for facilitating cash influx from the host nation. Pakistan banks must consider expanding their activities, as larger banks tend to employ larger numbers of employees, thus exerting a direct influence on bank performance. To further augment productivity levels, banks in Pakistan should prioritize improving their evaluation of macroeconomic swings in forthcoming periods (Ghosh, 2016; Iqbal et al., 2023).

It is well known that regulations and strict control are critical for both established and new businesses. Globalization may have limitations. Ghosh (2016) says a decline in foreign banks may indicate efforts to promote indigenous financial institutions in a particular area. This may create a dangerous environment and impact current affairs (Cetorelli et al., 2012; Iqbal et al., 2023). However, Tschoegl (2004) presents an additional argument to the aforementioned arguments. During economic downturns, international investors sometimes withdraw their investments from foreign banks where they lose confidence. They reinvest their funds in safer domestic banks. During times of crisis, domestic banks attract investors, especially those who hold funds. This is due to their exceptional and improved regulatory conditions.

In addition to this, globalization has the potential to provide a consistent credit supply when foreign institutions support the domestic banking sector of the host country. This is during crisis times. In addition, unfamiliar banks have the potential to enhance their bank performance by implementing development innovations, improving supervision guidelines, and establishing a robust risk management system through globalization. Ultimately, this will result in an increase in dissent within the host country's financial industry. Detragiache et al. (2008) state that because of globalization peculiarities, foreign banks may provide greater security than domestic banks due to parent banks. This is especially critical when there is a financial emergency.

Globalization in the finance sector is similarly largely driven by financial growth potential and the integration of financial frameworks. Furthermore, financial reconciliation and potential benefits may differ depending on the countries where the banks were established. This is influenced on the nation's political, economic, social, technological, and financial factors as well as the bank's culture. It supports an observational model to measure the bank's performance based on the internal component, which includes bank-specific features as well as the external component, which includes macroeconomic data. Considering the different viewpoints regarding the advantages and disadvantages of globalization in relation to bank operations, a comprehensive analysis and focus on the impact of globalization on bank operations remains lacking. As a result, a thorough examination of this issue and region yields consistent and encouraging findings regarding globalization's effect on bank performance.

Therefore, the objectives of this study are as follows:

1. To examine the bank-specific factors of banks that can affect Pakistan banks' performance.
2. To examine the relationship between globalization and the Pakistan financial sector's performance.
3. To analyze the impact of macroeconomic conditions on the performance of the Pakistani financial sector.

2. LITERATURE REVIEW

2.1 Eclectic Theory

Dunning (1977) developed a comprehensive theory that has had a major impact on multinational enterprises' knowledge (MNEs) and has stimulated much research and practical applications in the fields of banking, finance, and international business. The concept of a diversified worldview is called OLI. The abbreviation "OLI" stands for Ownership, Location, and Integration. Three factors can affect an organization's or bank's decision to expand globally, including these three factors. Proprietorship benefits aim to investigate the reasons behind organizations' selective travel to foreign countries. It suggests that a successful multinational enterprise (MNE) and its banks can profit from specific advantages that reduce business expenses in foreign countries. The issue of where a multinational enterprise (MNE) intends to locate is expected to be resolved by its area advantage. Finally, global advantages affect a company's operational strategies in an undetermined country, such as cost management.

Many theories are directly related to this focus on how globalization has affected Pakistani banks' displays. According to this theory, internationalization and globalization

should be preceded by an evident effect on three significant criteria. According to the theory, a nation might benefit in some ways from depleting its financial resources and institutions. The integrated theory highlights globalization's advantages for banks and organizations. This is because it adapts to and obtains three primary benefits: local benefits, global benefits, and proprietorship benefits. Because of this, this theory is quite useful for analyzing the advantages of foreign banks entering the domestic market as a result of globalization. This directly affects local commercial banks, which is consistent with this study.

2.2 Previous Research

According to them, there was a significant and noteworthy impact on bank performance in China during 2012. They acknowledged that Chinese banks have benefited greatly from economic globalization, with a significant impact at the 1% level. They also realized that the expansion of financial administration typically coincides with the growth of capital records. This leads to intense competition, the loss of leading advantages, and ultimately a decline in local financial institutions' value. Additionally, take notice that the findings are consistent with They focused exclusively on South Africa in 2016. been noted that there is a significant impact on bank execution in Vietnam (Sufian et al., 2012; Sufain et al., 2016; Nguyen et al., 2018 and Iqbal et al., 2023).

Sufian et al. (2012) provide evidence that social globalization benefits bank execution. Three specific markers are used to indicate the development of social globalization: close cultural ties (Cul_Prox), data surges (info_flow), and private contacts (Pers_Con). It is crucial to realize that each of the three indicators provides quite significant signals. This demonstrates that China has a dynamic monetary system characterized by a distinctive combination of cultures, improving the image of Chinese institutions. Recently, Nguyen et al. (2018) conducted a review of how globalization affected the performance of Vietnamese banks. The findings are consistent with those of Sufian et al. (2016), who also found a negative impact on bank execution. According to Nguyen et al. (2018), various aspects of Vietnamese society are greatly impacted by Western culture's inevitable influence.

Evidence of the significant and profitable impact of political globalization on bank execution is provided by Sufian et al. (2012). Sufian et al. (2012) conducted a review examining the relationship between globalization and bank execution in China. Dreher (2006) says political factors may influence financial turns. However, it should be noted that not all tests produce quantifiably significant results. Some evaluations showed different results. The focus of Nguyen et al.'s (2018) study in Vietnam was "Globalization and bank execution in Vietnam." The poll examines how globalization has a considerable negative impact on bank execution.

A few studies have provided significant evidence about the effect of credit risk on bank execution. Past studies by Zhang et al. (2013); Abiola et al. (2014) and Syafri (2012) have shown significant and far-reaching implications for credit risk (CR) associated with bank execution. However, due to the adverse impact of adverse credit on bank execution, credit risk (CR) often has a negative coefficient. Many experts anticipate a severe negative outcome from their test. According to Factory et al. (1997), the frequency of non-performing loans and the level of transparency displayed by banks or monetary foundations while extending high-risk debts are positively correlated. Consequently, this link affects bank efficacy.

According to Sufian et al. (2016), bank performance and size are strongly correlated. The rationale behind this is that large banks typically enjoy superior circumstances due to their elevated status (Sufian et al., 2016; Iqbal et al., 2023). The paper by Athanasoglou et al. (2008)

suggested that increasing a financial association's size could reduce its limited expenses by growing its size. Either way, increasing bank execution appears beneficial measuredly. Legislative and other factors might lead to a negative number of participants, according to (Eichengreen et al., 2001).

As evidenced by the fact that increased financial progress encourages banks to extend extended credit. This gives them the authority to impose higher loan costs and raises their assets value. Numerous scholars have highlighted the beneficial impact of an increase in Gross Domestic Product (GDP) on bank monetary execution, including. That being said, the results differ from. The fact that they are not totally predetermined is negative and quantifiable at 1% (Zhang et al., 2014; Kanwal et al., 2023 and Said et al., 2011; Iqbal et al., 2023; Nguyen et al., 2018; Sufian et al., 2016; Hailegebreal et al., 2016).

Authors: summarized the literature review in a structured table format for easy reference.

Author(s) & Year	Focus	Key Findings	Significance Level
Dunning (1977)	OLI Eclectic Theory for MNEs' global operations	Ownership, Location, and Integration affect global expansion.	Not applicable
Sufian et al. (2012)	Impact of social globalization on Chinese banks	Social globalization positively impacts bank execution through cultural ties.	Significant at 1%
Sufian et al. (2016)	Impact of globalization on bank execution in Vietnam	Globalization negatively impacts Vietnam's bank execution.	Significant negative correlation
Nguyen et al. (2018)	Globalization effects on Vietnamese bank performance	Negative societal effects from globalization on banks in Vietnam.	Significant negative impact
Zhang et al. (2013)	Credit risk implications on bank performance	Credit risk has adverse effects on bank efficacy.	Negative coefficient
Abiola et al. (2014)	Effect of credit risk on bank performance	Credit risk negatively correlated with bank performance.	Negative coefficient
Syafri (2012)	Role of credit risk in bank execution	Non-performing loans impact transparency and efficacy.	Positive correlation
Athanasoglou et al. (2008)	Relationship between bank size and performance	Larger banks reduce expenses and improve performance.	Positive correlation
Eichengreen et al. (2001)	Legislative influence on bank participation	Legislation may negatively influence participants.	Varied
Dreher (2006)	Political globalization influence on financial performance	Mixed results for political globalization's financial impact.	Mixed results
Kanwal et al. (2023)	GDP growth's impact on bank monetary execution	GDP growth has varied effects on bank execution.	Quantifiable at 1%

3. RESEARCH METHODOLOGY

This study used a quantitative exploration process to focus on positive problems and analyse relevant data. For the purpose of answering the questions and meeting the exploratory goals, it was necessary to conduct research in this way.

The Swiss Financial Association's KOF Globalization Index, also known as the KOF Konjunkturforschungsstelle, is where data is obtained. The KOF Globalization Index measures globalization's economic, social, political, technological, and financial aspects.

This device analyses differences in globalization degrees in different countries over extended periods of time. Currently available for 185 countries, the KOF globalization index includes the years (2008–2023). The linked URLs, <https://kof.ethz.ch/en/guesses-and-pointers/markers/kof-globalization-index.html>, lead to the KOF globalization index.

Scientists can also refer to the World Bank data index, Thomson Reuters' data flow, and the 15-year report. The data was collected over an extended period of time, spanning from (2008-2023). Based on this review, 43 business banks along the Pakistani border were identified as the test units.

Based on the data collected, return on assets (ROA) is the primary factor that influences bank performance. Independent factors include credit risk, bank size, GDP, and the globalization factors include social and political globalization, technological globalization, and financial globalization.

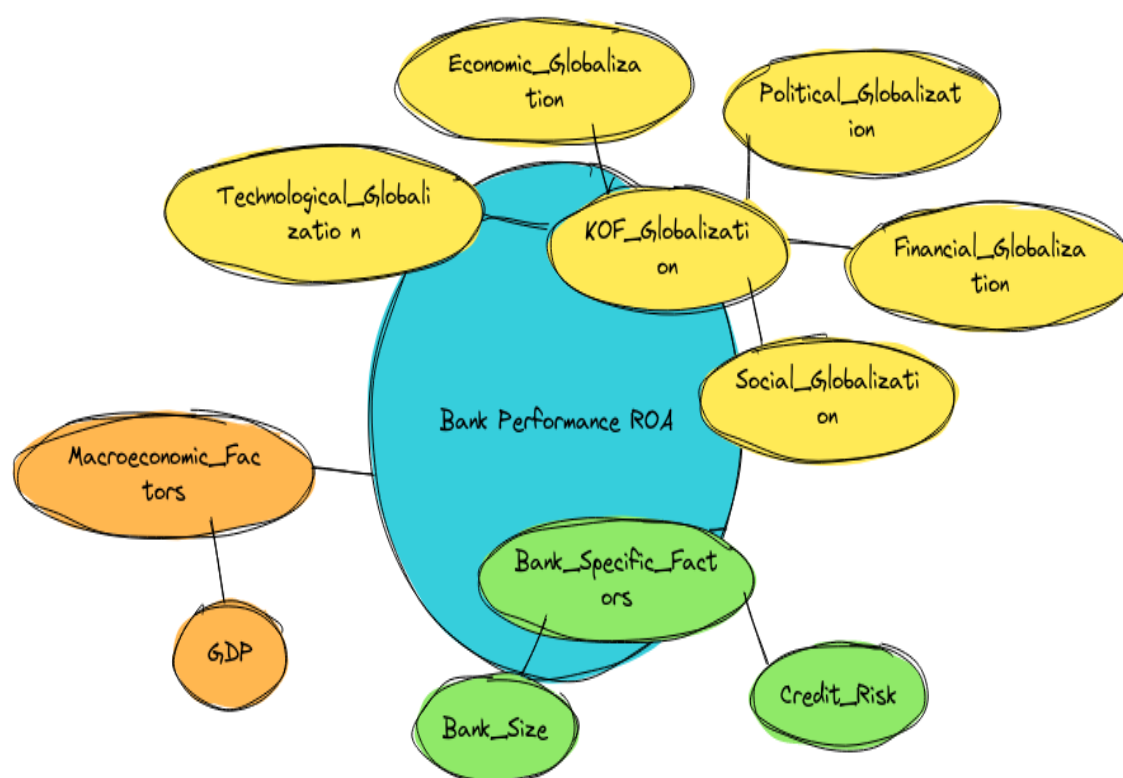


Figure 1: Theoretical Framework of the Research

This study used descriptive analysis to highlight the essential components of the information or data being evaluated. In addition, it is important to investigate regression indicators or suspicions before searching for regression studies.

Homogeneity, multicollinearity, ordinarity, and linearity assumptions have all been tested. Certain assumptions depend on SPSS form 24. Finally, the regression results can be analyzed to determine the most accurate expectation of the independent variables and dependent variables. This review uses pooled standard least squares (POLS) to simulate several regression tests.

3.1 Regression Equitation Model

$$ROA = \beta_0 j_t + \beta_1 EG + \beta_2 SG + \beta_3 PG + \beta_4 TG + \beta_5 FG + \beta_6 CR + \beta_7 BS + \beta_8 GDP + \mu_{it} \quad (1)$$

Where:

ROA = Return on Assets + β_0 = Coefficient + j = specific bank + t = time interval + μ = error term + $\beta_1 EG$ = Economic globalization + $\beta_2 SG$ = Social globalization + $\beta_3 PG$ = Political globalization + $\beta_4 TG$ = Technological globalization + $\beta_5 FG$ = Financial Globalization + $\beta_6 CR$ = Credit risk + $\beta_7 BS$ = Bank size + $\beta_8 GDP$ = Gross domestic product.

4. RESULTS AND DISCUSSIONS

4.1 Descriptive Study

Table 2: Descriptive Data

Variables	Mini	Maxi	Mean	Std. Devi.
ROA	14.1424221	28.40221	11.225511	5.25561
EG Index	68.1144221	81.25544	77.4225	5.24411
SG Index	74.5541122	84.55540	79.2544	3.22664
PG Index	84.2544277	83.36644	86.5522	2.63554
TG Index	43.5588112	66.66472	81.2554	1.25544
FG Index	54.2255626	58.55875	67.8745	2.25541
CR	-.01822255	.0589951	0.00384	0.00422
BS	18.225472	21.22252	19.2252	0.8722
GDP	0.9922554	2.887221	2.25422	0.3158
Obs*	243	243	243	243

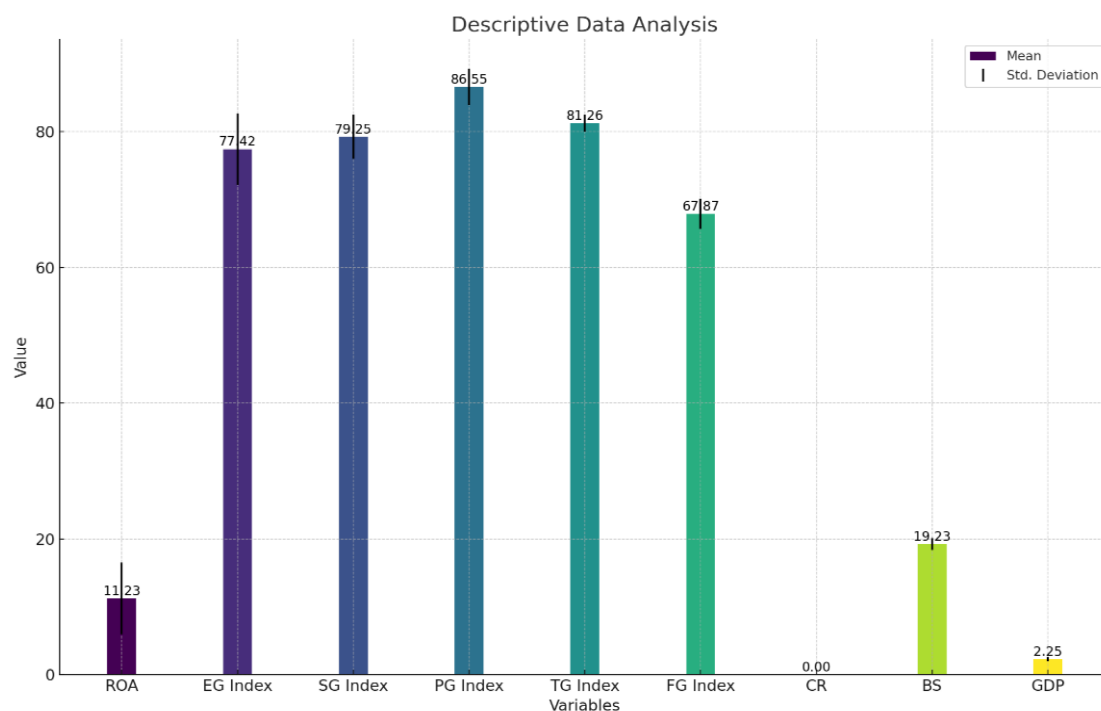


Figure 2: bar chart provides a clear visualization of the central tendency and variability for each variable in their study, representing the mean value and standard deviation.

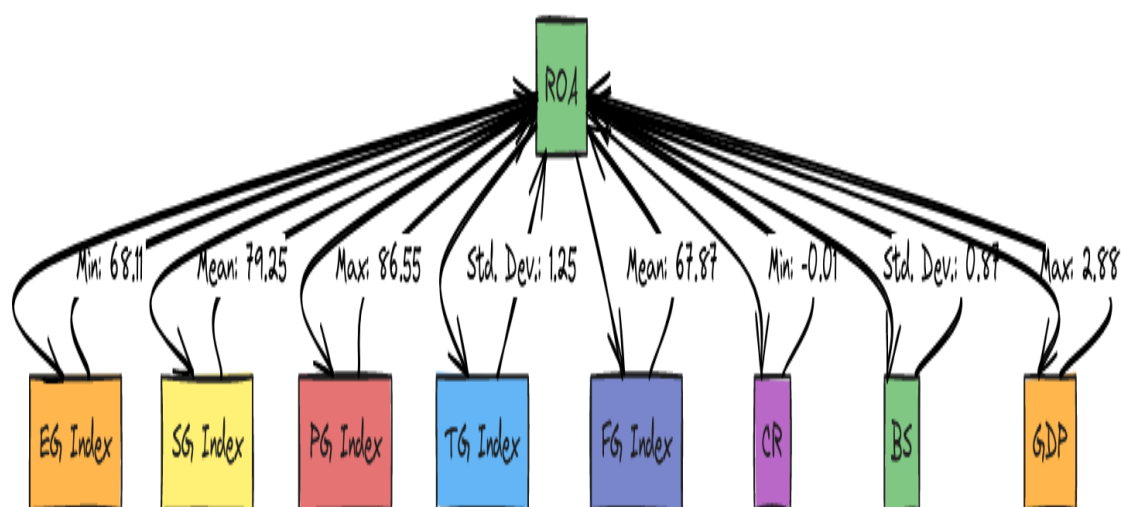


Figure 3: shows ROA linked to variables with descriptive statistics like mean, max, and standard deviation.

The interesting analysis indicates that factors have 243 observations, as shown in Table 1. ROA has an ordinary value of 11.225511, a mean value of 14.1424221, and a high value of 28.40221. ROA has a standard deviation of 5.25561. The mean incentives for credit risk, bank size, GDP, social, political, and technological globalization, as well as financial globalization, are 77.4225, 79.2544, 86.5522, 81.2554, 67.8745, 0.00384, 19.2252, and 2.2542 separately. The individual standard deviations are 5.24411, 3.22664, 2.63554, 1.25544, 2.25541, 0.00422, 0.8722, and 0.3158. These deviations are for credit risk, bank size, GDP, economic globalization, social globalization, political globalization, technological globalization, and financial globalization. In general, ROA has the largest variation between the base and the highest. It also has the highest quality deviation. ROA is 28.40221; 14.1424221. This suggests that, when compared to other components, ROA distribution is more dispersed based on its mean. Before regression examination, this review also examines regression indicators. Ordinarity, linearity, multicollinearity, and homogeneity assumptions have all been applied. The results demonstrated that no suspicion was raised in silence, allowing additional research to be conducted.

4.2 Regression Analysis

Table 3: Coefficients Analysis

Variables	Coefficient-Standardized	T	Prob*
-	Berta	-	-
C		3.22554	0.0004
EG Index	2.2111	4.25542	0.0000
SG Index	4.2551	4.55521	0.0000
PG Index	3.2551	4.25521	0.0001
TG Index	3.2448	4.25251	.00007
FG Index	2.2254	2.25452	0.0453
CR	-0.112	-0.7545	0.0000
BZ	2.2255	2.55441	0.0001
GDP	0.1122	-1.2254	0.0224
R-squared Adjust,	0.4443	-	-
f	11.553	-	-
Prob*	0.0000	-	-

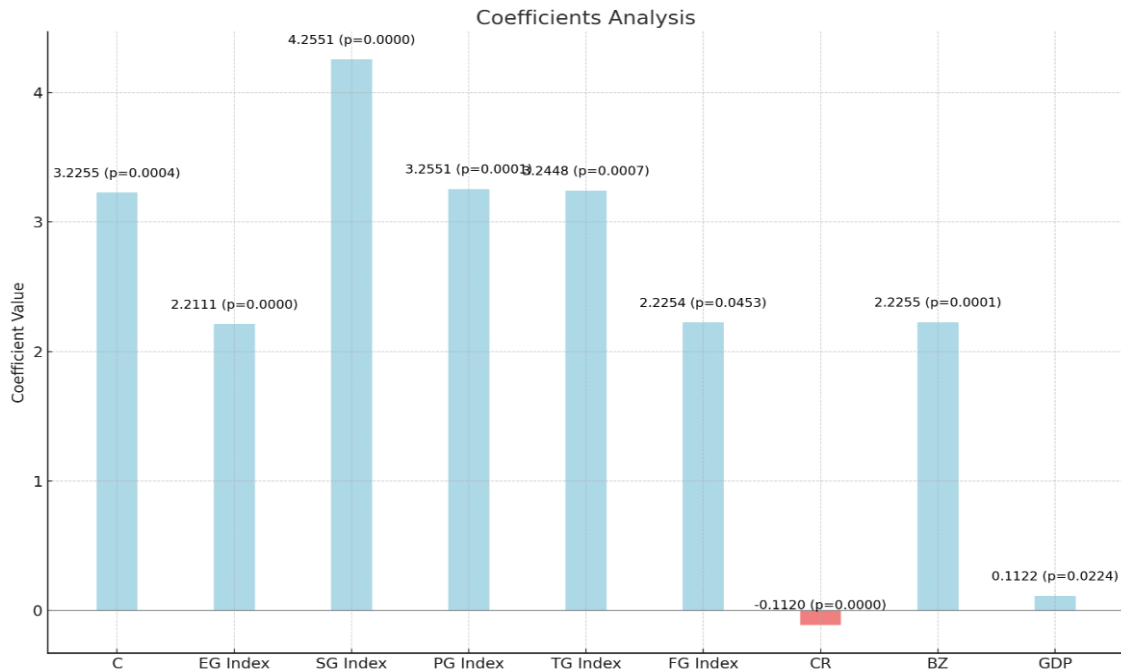


Figure 4: presents a bar chart showing coefficient analysis, displaying values and p-values for each variable, color-coded to indicate positive and negative coefficients.

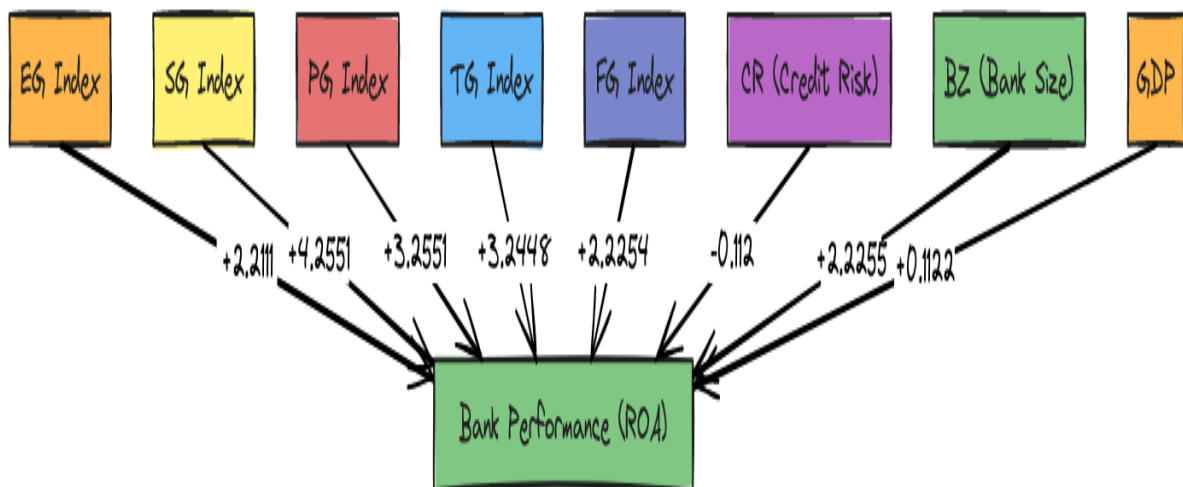


Figure 5: shows how Bank Performance (ROA) connects to indices and variables with standardized coefficients.

Table 2, the revised R-square value indicates that 44.43%, or 0.4443, of the independent components account for the dependent factors in this analysis. ANOVA analysis, in the meantime, revealed a fundamental value of 11.553, which is enormous at the 1% level. This shows a strong, quantifiable correlation between ROI (return on assets) and points.

Additionally, Table 2 displays coefficient analysis for a few components: bank size, credit risk, GDP, technological globalization, social globalization, political globalization, financial globalization, and bank size. These correspond to the dependent variable, return on assets (ROA). The event test shows that Malaysia's bank performance and financial growth are negatively correlated.

This analysis shows that, assuming that all other borders remain constant, a one-unit increase in financial globalization causes a 2.2111-unit decline in the bank performance of 43 selected neighborhood banks. It is agreed that one more theory suggesting a link between friendly globalization and its significance exists, given the significance threshold of 1%. The relationship between return on assets (ROA) of forty-three neighboring banks in Pakistan and monetary globalization is critical.

According to a previous study conducted by (Nguyen et al., 2018). Non-industrialized nations like Pakistan may be adversely affected by the justification. This is due to the fact that less developed countries are frequently perceived as weak and unable to compete in a globalized environment where banks play a crucial role in providing financial assistance and capital business sectors are accessible to investment. The result shows the profoundly problematic connection between political globalization and Pakistan bank operations.

A previous study conducted in Vietnam by Nguyen et al. (2018) also showed a very negative impact on bank performance. There exist plausible explanations for the negative correlation between results and ROA in Pakistan. Similar to other non-industrialized countries like South Africa, Vietnam, and others, Pakistan joined and consented to numerous simplified trade agreements. Pakistan has been a WTO member since January 1st, 1995. This demonstrates how political globalization occurred in Pakistan long ago.

These agreements make it easier for foreign banks to penetrate Pakistan's financial sector through political globalization. Unfamiliar banks have spread the word to increase their share. As a result, the local bank is prompted to take similar action to maintain a serious awareness state. This is due to the foreign bank's unscrupulous conduct. Pakistan community banks updated their financial advances, rebuilt bank structures, and adopted the Basel capital framework to remain competitive.

However, this implicitly increases operating costs and negatively impacts bank performance. The results indicated a negative correlation between credit risk and bank performance in Pakistan. As a result, credit risk and ROA in Pakistan's commercial banks are closely linked. Neglected advances or credit risk build-up will directly reduce bank production (Nguyen et al., 2018; Iqbal et al., 2023). Several studies can support this conclusion (Ramlall, 2009; Sohaib et al., 2013; Sufian et al., 2016 and Nguyen et al., 2018).

The re-examination confirms that bank performance in Pakistan has a strong and positive relationship. One possible argument is that Pakistan's largest banks may have excellent facilities and technological advancements that greatly facilitate the development of more innovative products for banks. This directly improves bank performance.

This conclusion can be applied to a variety of other studies, including. Ultimately, approachable globalization and GDP demonstrate useless results. In addition, unrelated results were also examined in this review (Khrawish, 2011; Sohaib et al., 2013; Sufian et al., 2016; Combey et al., 2017 and Iqbal et al., 2023).

6. CONCLUSION

According to the conclusion, the two variables included as bank-specific variables—credit risk and bank size—show a strong correlation with bank performance when viewed in the context of the main objective. The second objective demonstrates that gross domestic product does not significantly affect bank performance. This demonstrates that gross domestic product has no significant or negative effects on how local business banks are shown in Pakistan.

Ultimately, the impact of globalization on bank operations in Pakistan indicated that, whereas favorable globalization yielded insignificant results in this analysis, economic and political globalization were significantly correlated with 43 local commercial banks in Pakistan. The results of this study will provide unprecedented transparency and a powerful incentive for scholars and students studying business, finance, banking, and related fields.

This will enable them to obtain data and information via the KOF Index. These data and information can also be used for further research into globalization in Pakistan in the future. Furthermore, this research provides the banking sector with a strategy to overcome globalization challenges. Based on the results, globalization has a negative impact on Pakistani bank operations. In light of the information and data, nearby commercial banks can take significant action to establish a future agreement that supports their presentation.

In the future, training employees to focus on their expertise can lead to a positive outcome. Consequently, the study's knowledge and statistics may improve awareness of the Pakistani financial sector. This may enable its management to accept increasing risks to compete with foreign banks. Globalization is being done according to the best strategy. This study demonstrates how globalization impacts a nation, the banking sector, and a group. Technology is closing many banks.

Innovations are progressing at an accelerated pace thanks to globalization. Bank administration is under our control. Many nations lack professionals who can handle administrations and advanced technologies, however. It is critical to remember that as globalization continues, programmers from all over the world are becoming more visible.

Therefore, the government can envision a method that focuses primarily on science and advances advancements in high school education. This is based on the review's findings. This will ensure that people in the future are prepared to face competition as a whole.

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