

Does the Financial Inclusion Enhance the Firm's Performance? Findings from a Mixed-method Analysis

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Abstract

Despite the evidence highlighting the social and economic significance of financial inclusion, the link between financial inclusion and firm performance remains ambiguous. The present research shed light on the relationship between financial inclusion and firm performance. The present study has employed the six indicators of financial inclusion and six dimensions of firm performance. Secondary data was gathered from the financial statements of 22 Pakistani banking firms from 2010 to 2021 for financial inclusion. The questionnaire collects operational firm performance data from the branch manager. The present study employed a regression technique for mixed methods of data analysis. Results depict that bank branch network, outstanding deposits, and outstanding credit positively impact firm performance. Automated teller machines (ATMs) generate insignificant effects on firm performance. Meanwhile, additional analysis is conducted to examine the association between six financial inclusion indicators and six firm performance dimensions, making this study a pioneering effort in the field. The study recommends that Pakistani banking firms enhance their digital infrastructure, develop financial services, and increase innovative access to these services. These steps aim to improve Pakistan's relatively low level of digital banking services.

Keywords: Firm performance, financial inclusion, Pakistan, Branches, ATMs. Credit, Deposit.

1 Introduction

Finance availability has been considered a significant obstacle to private sector performance in developing countries (Khan et al., [2021](#)). Thus, financial inclusion has become a substantial focus of attention in the development agenda of several developing countries (Ozili, [2021](#)), including

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Pakistan. Financial inclusion involves the approachability and use of reasonable and beneficial financial services, such as deposits, finance, and payments provided to businesses or individuals (Basheer, [2021](#)). Such financial services are delivered ethically and sustainably (Aracil et al., [2021](#)). It is proposed that improved financial inclusion boosts the efficiency and accessibility of financial services by providing a secure, suitable, and affordable solution (Vo & Nguyen, [2021](#)). Despite growing attention to taking initiatives to encourage financial inclusion in Asian countries, fostering it in the region remains a significant challenge (Marcelin et al., [2022](#)).

Recently, policymakers have directed their efforts toward integrating "unbanked" people into the current financial network. The insufficient availability of credit has been identified as unfavourable to economic growth and poverty reduction (Abdulkarim, [2023](#)). In less developed economies, people need help in increasing savings, investing in income-producing projects, and developing risk mitigation strategies (Khatib et al., [2022](#)). The limited availability of primary financial resources is still an essential problem for people in developing economies (Danladi et al., [2023](#)). Policymakers continuously consider the barriers financial institutions face to target unbanked people besides considerable revenues and performance development. Thus, the present study explores the association between financial inclusion and firm performance.

Banks can attract more customers to open regular accounts by providing them with advanced services (Prabhu & Aithal, [2023](#)), thereby increasing deposits, financing, and business investments. Banks can help people upgrade their lifestyles by providing them with education and healthcare facilities (Neacșu et al., [2023](#)). As a result, by expanding the number of persons and businesses that utilize loans and various financial services, financial institutions can boost their incomes and profitability, improving performance metrics (Muthia et al., [2019](#)). This will enable banks to allocate funds towards more cost-effective services for deprived communities, thereby continually encouraging financial inclusion within these societies (Jain et al., [2024](#)). Financial inclusion aims to enhance approachability to financial services by expanding banking channels, offering electronic facilities, and providing advances at reasonable rates (Kamran & Uusitalo, [2024](#)). Thus, financial inclusion helps to reduce poverty alleviation, lower unemployment (Wu et al., [2023](#)), and generate employment, ultimately leading to sustainable economic growth (World Bank, [2017](#)). Therefore, financial inclusion is crucial in fostering economic growth (Shihadeh, [2021](#)).

Pakistani banking companies provide banking facilities to around six million debtors, comprising 3.6% of the people, whereas 25 million account holders, comprising 15% of the people, connect with the banking network (Jafri, [2023](#); Raza et al., [2023](#)). However, only approximately one in four households in Pakistan hold a bank account or have access to other financial services (Kemal, [2019](#)). On average, there is only one bank branch for every 20,000 people, and only 14% of the rural people have availability of financial services, even though 67% of the total population lives in rural areas (Alonso et al., [2023](#)). To address the issue of this limited financial inclusion, the Pakistani financial sector, in collaboration with multiple stakeholders, developed a comprehensive National Financial Inclusion Strategy (NFIS). As a result, the Pakistani Government officially launched and adopted the framework in May 2015 (Ejaz & Hasan, [2023](#)). Its main objective is to create a nationwide framework to enhance general financial inclusion standards in Pakistan. The NFIS outlines its vision, framework, action plan, and expected outcomes for financial inclusion to enhance overall financial access for 50 % of the adult population by 2020.

Thus, this research study aims to assess the effect of financial inclusion on banks' performance: Does increased financial inclusion lead to improved firm performance? This question forms the central focus of the research. The analysis reveals that the impact of financial inclusion on banks' profitability varies based on the type of inclusion. The various kinds of financial inclusion include the number of branches and ATMs, the number of loan accounts, and the size of deposits.

Additionally, most empirical research on financial inclusion has primarily concentrated on its definition, methods of measurement, and the factors driving it (Khatib et al., 2022). Literature has paid limited attention to how changes in financial inclusion impact bank profitability in emerging economies. To address this gap, using a panel data framework, the current study incorporates financial inclusion indicators to analyze its impact on profitability in 22 commercial banks in Pakistan between 2010 and 2021.

Contrasting prior research studies, our study used two dimensions of financial inclusion comprising both the availability of financial products and the resultant consumption of these financial products (Ajefu et al., 2020; Goel & Sharma, 2017), and these dimensions further include six indicators. The four indicators of availability of financial inclusion are the bank branches per 1,000 km, bank branches per 0.1m adults, ATMs per 1,000 km, and ATMs per 0.1 m adults (Munir et al., 2024). Also, the two indicators of resultant usage of financial services are outstanding deposit percent GDP and credit percent GDP. Furthermore, this pioneering study investigates the association between six financial inclusion indicators and six operational firm performance dimensions.

The structure of our paper is given below: Part 2 explores the relevant literature and develops our research hypotheses. Part 3 defines and calculates key variables, describes the conceptual framework, explains the sample construction, and details the data sources. In Part 4, we analyze the results, perform robustness checks, and conduct additional tests. Finally, Part 5 provides our concluding remarks.

2 Literature review and hypothesis development

2.1 Theoretical framework

Stakeholder theory clarifies how businesses fulfill stakeholders' expectations to acquire strategic advantage and persistence in the social landscape (Malik & Munir, 2024). Generally, financial institutions offer their financial services to those customers who can afford them, leaving the unbanked population without provision of financial services (Adelaja et al., 2024). Such a situation generates a societal issue, and serving this unbanked population could be expensive for financial institutions. Nevertheless, the requirement of these unbanked people to provide banking services classifies them as potential customers and significant stakeholders (Kamran & Uusitalo, 2024). Kujala et al. (2022) explain stakeholders as any organization or persons that can influence or be influenced by fulfilling the business's goals. However, such unbanked people can benefit from the financial resources banks provide. (Sanyaolu et al., 2024). For instance, a farmer who gains access to a low-interest loan, which they would not achieve otherwise, would likely be inclined to borrow money to invest in their organization.

Companies may prioritize the requirements of their primary and influential stakeholders, yet their ability to achieve achievement often depends upon whether they also fulfill the demands of various stakeholders (D'Souza et al., 2022). Furthermore, a social agreement exists between the organization and those impacted by its activities (Wirba, 2024). Therefore, this social contract exists between banks and unbanked individuals. Banks can improve the lifestyle of unbanked individuals by designing suitable financial products and services to fulfill their demands (Mogaji et al., 2021). Furthermore, these unbanked individuals perform an essential function for the development of the Pakistani community (Kamran, 2023), and such persons have implied rights to financial institutions whose products and services can benefit them. Thus, in the light of stakeholder theory, banks that fulfill the implied rights of stakeholders improve the firm image and positively impact their performance (Freeman, 2010). Various research findings have documented that businesses with proper stakeholder coordination can build a strong relationship with their stakeholders that can be considered valuable and, as a result, can help firms in attaining and sustaining financial and operational performance (Choi & Wang, 2009). Thus, the stakeholder

theory is the grounded theory of this present study.

2.2 Financial Inclusion

Financial inclusion by Munir et al. (2024) is the accessibility of formal financial products like simple lending and savings and the provision of more complex services such as pensions and insurance. Regulated financial inclusion is initiated by creating a standard bank account with any banking institution for the purpose of depositing and withdrawing money for savings. However, the advanced stage of financial inclusion encompasses financing options and insurance services that protect individuals from various monetary risks, such as floods, droughts, or other damages (Demirguc-Kunt et al., 2017).

Financial inclusion integrates unbanked and underbanked people into the financial system (Adelaja et al., 2024), providing them access to basic financing services and a range of other financial facilities. Financial inclusion promotes empowerment and drives economic sustainability while improving social security on an individual level (Niaz, 2022). Those excluded from the financial network are key target groups of the financial inclusion initiative (Lenka & Barik, 2018). Consequently, financial inclusion ensures that monetary facilities are accessible to individuals or groups, especially vulnerable people, within the effective financial framework (Ozili, 2018). This can be accomplished by providing microfinance services as a Societal policy to mitigate financial distress Lavinias (2018) and innovative financial services such as Internet banking and digital currencies (Clarke & Tooker, 2018).

Financial inclusion implements all essential measures to support economically disadvantaged or financially underserved populations (Lal, 2021). Social inclusion can also be promoted through financial inclusion initiatives by ensuring the approachability, attainability, and optimal utilization of banking services for the "newly financially integrated" people. It can improve the quality of life for every segment of society, particularly underserved communities, including remote areas, women, and financially disadvantaged households (Omar & Inaba, 2020). It also benefits financially excluded residents, such as the impoverished and unemployed (Ozili, 2021). Financial inclusion can provide millions of financially excluded individuals with access to and the ability to utilise affordable financial products tailored to their needs and financial capacity (Vo et al., 2021). Thus, financial inclusion emphasizes the provision of financial facilities that are easily accessible to individuals while ensuring that these services are utilized effectively and efficiently to meet their demands (Van et al., 2021).

As previously noted, few research studies examined financial inclusion performance outcomes. However, interest in this area has grown in recent years by evolving research increasingly exploring the effect of financial inclusion on economic stability (Ramzan et al., 2021). Various research studies have employed different proxies and measures of financial inclusion. Earlier research has utilized only a few measures for financial inclusion. For instance, previous studies have used just three or four indicators to calculate such variables (Kumar & Singh, 2021).

The banking network size can measure access to finance and indicate financial inclusion (Kumar & Singh, 2021). Such an indicator is proposed to have a positive and significant impact on the economic performance of the banking sector. Branch networks are essential for unprivileged community sections, and reducing the number of branches restricts the availability of finance for small businesses. Expanding the branch network brings a larger customer base, enhancing deposit and credit exposure and risk mitigation strategies.

Banks must establish wide branches and ATM coverage in ATM networks to approach and serve a broader customer range, thereby improving their overall performance (Shihadeh, 2021). Adding

ATMs is crucial and highly effective, allowing consumers to approach their financial records by withdrawing or depositing cash (Byukusenge, [2021](#)). On the other hand, some research findings confirm that no relationship exists between ATMs and bank profitability (Kumar & Singh, [2021](#)), indicating that the direct expenditure might offset the additional revenue generated from extra loan accounts.

Outstanding deposits are essential sources of money that banks use for financing and profit. According to Ozili ([2021](#)), greater concentration in banks is related to improved availability of deposit and credit. A larger amount of bank deposits is related to improved financial performance. Similarly, outstanding credit is also associated with enhanced profitability.

2.3 Firm Performance

Firm performance is a crucial financial variable, often acting as the primary variable of interest across various disciplines (Munir et al., [2022](#)). Despite its importance, empirical studies on firm performance face many issues, such as a need for more consensus for selecting indicators, selecting dimensions based on suitability, and insufficient analysis of its dimensional aspects (Crook et al., [2008](#)). Most research on firm performance uses sole measure and considers firm performance as uni-dimensional, although they acknowledge its multiple dimensions (Nizamuddin, [2017](#)). Additionally, when various indicators are available, researchers typically choose the most related dimensions and investigate the practical implications of those chosen dimensions (Richard et al., [2009](#)). Thus, corporate governance necessitates a clearer understanding of firm performance, an examination of its dimensions, and enhancing measurement methods.

Financial and operational criteria are two distinct measurement methods for firm performance (Richard et al., [2009](#)). Thus, firm performance can also be assessed using the “perceived performance approach” (also referred to as qualitative performance measurement), which uses a Likert-like scale to measure firm performance from the viewpoint of senior management (Marimuthu et al., [2009](#)). The current research utilizes operational criteria to assess firm performance. For inter-firm analysis, subjective measures are advantageous (Ketokivi & Schroeder, [2004](#)).

Morgan and Turnell ([2003](#)) proposed that operational performance in the banking and finance sector should encompass market growth, customer satisfaction, customer retention, and employee retention. Operational performance is evaluated based on the efficiency and accuracy of a company's operations, product quality, accountability in practices, delivery efficiency and timeliness, effective resource management, and customer satisfaction (Chen et al., [2021](#)).

Market share growth is a key dimension of firm performance. It is the benchmark for evaluating a company's performance against industry averages, competitor performance, established targets, or previous results (Carneiro et al., [2007](#)). Market share growth can be assessed by the extent to which firms attain results compared to their industry competitors (Oh et al., [2015](#)). Aydiner et al. ([2019](#)) also utilized increased market share as a proxy for operational firm performance. Their research findings emphasize the significance of market share growth as a vital dimension of firm performance.

Wang & Wang ([2012](#)) emphasize that companies focused on fulfilling customer demands tend to attain improved performance and increased profitability. Firm performance can be evaluated by examining how successful companies perform relative to their competitors regarding customer satisfaction, attracting new clients, and cultivating loyalty (Rajapathirana & Hui, [2018](#)). Therefore, firm performance reflects how efficiently a company creates customer value by enhancing satisfaction, fostering retention, promoting positive word-of-mouth, and improving the overall quality of relationships (Tarsakoo & Charoensukmongkol, [2020](#)). Customer satisfaction arises when a product or service meets the consumer's demands, desires, standards, and expectations.

Customer satisfaction motivates consumers to consistently use products, nurturing loyalty and prompting them to recommend those products to others. Customer satisfaction indicates the feedback and evaluation customers provide regarding their level of satisfaction with a product or service (Ginting et al., [2023](#)). Customer satisfaction signifies a positive emotional attachment from favorable assessments of customer experiences with a firm. Various critical performance outcomes have been associated with consumer satisfaction, a key driver of intended behaviors (Agag et al., [2024](#)).

The firm's image encompasses customers' perceptions, shaped by a combination of subjective, perceptual, and rational analytical approaches in customer minds (Sanny et al., [2020](#)). Moreover, a strong firm image helps customers comprehend the company's position and differentiate it from its competitors. A firm or its products/services continuously upholding a positive public image will inevitably achieve a stronger market position (Dam & Dam, [2021](#)). Similarly, the bank's image is important, representing customers' perspectives and perceptions about the institution. (Narteh & Braimah, [2020](#)). This image encompasses customers' beliefs, awareness of the brand and its product offerings, and all related attributes (Khan & Fatma, [2023](#)).

The firm must meet the needs of its various legitimate stakeholders. According to Phillips ([2003](#)), a firm's legitimate stakeholders are individuals and groups to which they are responsible due to their involvement in the cooperative framework that supports the firm and guarantees its sustainability. These stakeholders can be consumers, suppliers, societies where the business operates, and those who provide funding, tools, resources, and labor. Moreover, organizations may have other legitimate stakeholders relevant to their situations (Harrison & Wicks, [2013](#)). Stakeholder confidence is crucial for establishing trust and promoting collaborative relationships within an organization. It forms the basis for investment, partnerships, and long-term commitment, influencing the firm's overall success and reputation. Building and maintaining stakeholder confidence necessitates transparent communication, ethical conduct, and consistently fulfilling promised outcomes. As a result, confidence is shaped by internalized expectations formed from knowledge or previous experiences (De Filippi et al., [2020](#)).

Service quality is a commonly utilized measure of firm performance (Molina-Azorín et al., [2009](#)). Service quality is necessary for both manufacturing and service sectors. Organizations have increasingly prioritized competitiveness by assessing their service quality from the customers' viewpoint. Medberg and Grönroos ([2020](#)) define service quality as the customer's assessment of the services delivered by the firm to evaluate its overall performance. Service quality has been described as the capacity to meet customer expectations during the service delivery process. Moreover, some scholars have defined service quality as the outcome of customers' thorough assessment of a firm, which involves comparing their expectations with their perceived quality (Dam & Dam, [2021](#)). Employee turnover refers to the flow of personnel entering and exiting a company. High levels of employee turnover within a short period can pose substantial challenges for management. Suppose the recruitment and training processes are not effectively managed. In that case, key positions may remain unfilled, leading to unaddressed daily tasks and hindering the company's progress toward its developmental goals and objectives (Gao et al., [2019](#)). Turnover is defined as the voluntary termination of employment by an employee. It refers to the exit of employees from an organization, necessitating prompt replacements. It signifies a considerable loss for a company, particularly when numerous skilled employees decide to leave. Various factors can influence employee turnover rates (Ramlawati et al., [2021](#)).

Thus, based on all the above discussion, the following hypothesis can be designed:

- H1.** *The number of bank branches per 1,000 km significantly positively impacts firm performance.*
H2. *The number of bank branches per 0.1m adults has a positive significant impact on firm performance.*

H3. *The number of ATMs per 1,000 km has an insignificant impact on firm performance.*

H4. *The number of ATMs per 0.1m adults has an insignificant impact on firm performance.*

H5. *Outstanding deposits have a positive significant impact on firm performance.*

H6. *Outstanding credit has a positive significant impact on firm performance.*

3 Research methodology

3.1 Sample

The present study's sample comprises 22 banking firms from Pakistan from 2010 to 2021 (12 years). Financial inclusion data is gathered from the banking firms' financial statements. Meanwhile, primary data is collected from the 200 branch managers and operations managers for firm performance, as they are directly involved with the customers and top management. Consequently, they are well-placed to provide the necessary data.

3.2 Variable measurement

3.2.1. Financial Inclusion

The present study uses the two dimensions of financial inclusion:

(a) Availability or Accessibility of Financial Facilities

The banking network encompasses branch networks and automated teller machines (ATMs), serving as proxies for the accessibility of financial services offered by banking institutions. Additionally, the bank personnel who provide these banking services also serve as indicators of financial inclusion (Maity & Sahu, [2022](#)). This highlights the degree of geographical or demographic reach of financial services through the various channels of banking institutions, comprising head offices, regional offices, area offices, branches, and ATMs (Omar & Inaba, 2020).

Accessibility of financial facilities has been proxied by the following measures:

- Bank branches per 1,000 km;
- Bank branches per 0.1m adults;
- ATMs per 1,000 km; and
- ATMs per 0.1 m adults.

(b) Resultant usage of Financial Facilities.

This proxy measures the frequency and sufficiency of consumers' use of banking facilities across various activities, such as deposits, financing, withdrawals, remittances, etc. This measure of financial inclusion evaluates the efficacy of banking firms where the higher accessibility is inadequate to support comprehensive financial inclusivity (Omar & Inaba, [2020](#)). Nevertheless, due to inter-country equivalent data of withdrawals and remittances, the usage indication is measured with the help of two measures: outstanding deposits with banking firms per 1,000 adults. (Cámara & Tuesta, [2014](#)) And the exceptional creditors from banking firms per 1000 adults (Amidžic et al., [2014](#); Park & Mercado, [2015](#)).

The usage of financial facilities has been proxied by the following measures:

- Outstanding deposit per cent GDP; and
- Outstanding credit per cent GDP.

3.2.2 Firm Performance

The survey method was employed to collect data from the selected population regarding the primary measure of firm performance, following the recommendations of Saunders et al. ([2009](#)). This technique is deemed the most appropriate for obtaining a large volume of responses necessary for hypothesis testing, as it is easy to administer and relatively simple for respondents to complete. The questions were crafted to explore the current research variables' relationships and offer

descriptive insights (Saunders et al., 2009).

The current study utilizes the six-item scale for measuring firm performance developed by Malik (2009). The items include growth in market share, customer satisfaction, bank image, stakeholder confidence, service quality, and employee turnover. Data was collected using a five-point Likert scale, where "1" indicates strong disagreement and "5" indicates strong agreement. Responses were gathered from branch managers and operation managers. The questionnaire is included in the study's appendix

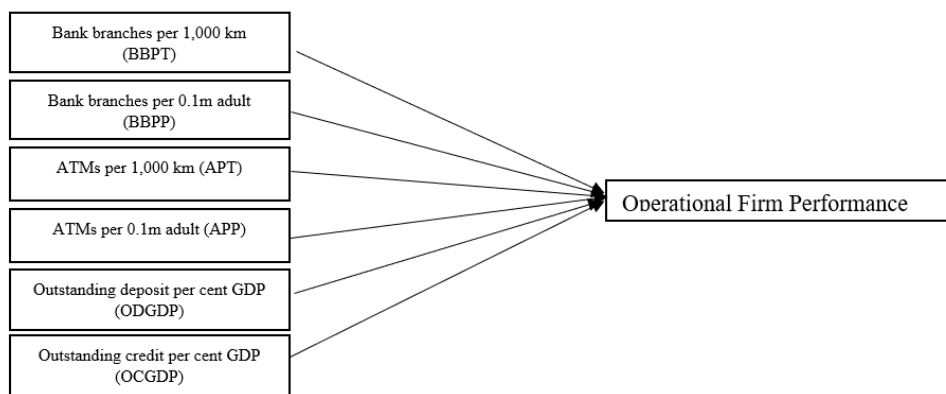


Figure 1: Conceptual Framework

4 Empirical results and discussion

Reliability Analysis

Cronbach's alpha is a widely applied metric for assessing the reliability (Internal consistency) of the primary scale or a test. Internal consistency indicates the extent to which all test items evaluate the consistent concept or construct by indicating the degree of interrelatedness among the items (Tuan et al., 2016). Mallery and George (2000) suggest that a reliability score of 0.7 or higher is considered satisfactory. For the present research, scales with a Cronbach's alpha coefficient of 0.7 or higher will be deemed acceptable. The table of Cronbach's alpha coefficient is included in the Appendix table.

4.1 Descriptive Statistics

Descriptive statistics are presented in table 4.1 indicates the number of observations (N), mean, standard deviation (S Dev.), minimum value (Min) and maximum value (Max). Number of observations is 264. The mean of BBPT is 0.665, the standard deviation is 0.640, and the minimum value is 0.016, while the maximum value is 2.525. Similarly, for BBPP, the mean is 0.241, the standard deviation is 0.247, the minimum value is 0.001, and the maximum value is 0.892 and similarly for the remaining elements.

Table 1: Descriptive Statistics

	<i>BBPT_{it}</i>	<i>BBPP_{it}</i>	<i>APT_{it}</i>	<i>APP_{it}</i>	<i>ODGDP_{it}</i>	<i>OCGDP_{it}</i>
<i>N</i>	264	264	264	264	264	264
<i>Mean</i>	0.665	0.241	0.709	0.282	1.561	0.777
<i>S Dev.</i>	0.640	0.247	1.861	0.798	1.502	0.697
<i>Min</i>	0.016	0.001	0	0	8.190	0.001
<i>Max</i>	2.525	0.892	17.537	7.454	6.171	3.163

4.2 Regression Results of Financial Inclusion (BBPT) and Firm Performance

The mixed method approach, as applied by O'Sullivan and Abela (2007), is used to analyze the impact of various secondary independent variables on the primary dependent variable.

Results discussed in Table 1 depict that the dimension (BBPT) of financial inclusion has a positive significant relationship with the banking firm's performance. The beta coefficient is 0.113, confirming that the variation of 1 unit in the financial inclusion will bring about a 0.113 percent change in operational performance. Empirical findings confirmed that the Bank branches per 1,000 km significantly affect operational performance. By increasing the branch network, the bank can attract more potential customers, which can improve the bank's profitability. This confirms the acceptance of H1. Our findings are similar to the study of Akhisar et al. (2015), Chen et al. (2018), Shihadeh (2021), and Khatib et al. (2022).

Table 2: Regression Results of Financial Inclusion (BBPT) and Firm Performance

	<i>Pooled OLS</i>
<i>C</i>	3.820*** (0.035)
<i>BBPT_{it}</i>	0.113** (0.038)
<i>R²</i>	0.032
<i>Root MSE</i>	0.400
<i>FStatistics</i>	8.650**

Results are significant at 1%,5% and 10% level and denoted by *,** and ***, respectively

4.3 Regression Results of Financial Inclusion (BBPP) and Firm Performance

Table 2 indicates financial inclusion (BBPP) regression results and firm performance. The empirical findings confirm the positive connection between financial inclusion and operational performance in the 95% confidence interval. We accept H2. According to these findings, increasing the bank network per 0.1m adults can improve operational performance.

Table 3: Regression Results of Financial Inclusion (BBPP) and Firm Performance

	<i>Pooled OLS</i>
<i>C</i>	3.828*** (0.034)
<i>BBPP_{it}</i>	0.277** (0.099)
<i>R²</i>	0.028
<i>Root MSE</i>	0.400
<i>FStatistics</i>	7.680**

Results are significant at 1%,5% and 10% level and denoted by *,** and ***, respectively

4.4 Regression Results of Financial Inclusion (APT) and Firm Performance

Regression results presented in Table 3 empirically confirm the insignificant association between financial inclusion (APT) and operational performance. We accept the H3. ATM services incur maintenance and security costs. This increased cost can reduce the bank's profitability. Even though these services typically do not generate direct revenue, as basic transactions are often provided without fees, bank management should still prioritize expanding ATM services. These results are the same as the empirical studies of Akhisar et al. (2015), Chen et al. (2018), and Shihadeh (2021) and contradict the study of Khatib et al. (2022).

Table 4: Regression Results of Financial Inclusion (APT) and Firm Performance

	<i>Pooled OLS</i>
<i>C</i>	3.899*** (0.026)
<i>APT_{it}</i>	-0.005 (0.013)
<i>R²</i>	0.001

Root MSE	0.406
FStatistics	0.016

Results are significant at 1%,5% and 10% level and denoted by *,** and ***, respectively

4.5 Regression Results of Financial Inclusion (APP) and Firm Performance

Meanwhile, the regression results empirically confirm an insignificant association between financial inclusion and firm performance while taking APP as the dimension of financial inclusion. ATMs are essential and highly effective as they allow consumers to transact their accounts to withdraw or deposit money for digital banking (Byukusenge, 2021). We accept the H4 as increasing the ATM network can incur additional costs that will reduce the banks' operational performance.

Table 5: Regression Results of Financial Inclusion (APP) and Firm Performance

	Pooled OLS
C	3.900*** (0.026)
APP_{it}	-0.015 (0.031)
R²	0.001
Root MSE	0.406
FStatistics	0.240

Results are significant at 1%,5% and 10% level and denoted by *,** and ***, respectively

4.6 Regression Results of Financial Inclusion (ODGDP) and Firm Performance

Table 5 confirms that financial inclusion (ODGDP) and operational performance have a significant positive association with a 100% level of confidence. This also empirically proves that the banking firms that have a higher deposit ratio with respect to their GDP will have a better financial performance as deposits are the lifeblood of the banking firms. Empirical findings of Lee and Hsieh (2013) and Menicucci and Paolucci (2016) revealed that banks can maximise their profitability by increasing the volume of their deposits. Saeed (2014) found similar results in his study. Thus, we accept H5, as the deposits are considered a major driver of money for the banking firms, and the high volume of deposits can generate the opportunity for them to disburse maximum loaning and financing.

Table 6: Regression Results of Financial Inclusion (ODGDP) and Firm Performance

	Pooled OLS
C	3.782*** (0.034)
ODGDP_{it}	0.072*** (0.016)
R²	0.071
Root MSE	0.391
FStatistics	20.230***

Results are significant at 1%,5% and 10% level and denoted by *,** and ***, respectively

4.7 Regression Results of Financial Inclusion (OCGDP) and Firm Performance

Financial inclusion significantly impacts firm performance when using OCGDP as a measure. Additionally, the results in Table 7 indicate that a change in financial inclusion is associated with a 0.166 per cent positive change in firm performance. This finding confirms that banking firms with a higher ratio of credit relative to their GDP will experience a positive influence on their operational performance.

Table 7: Regression Results of Financial Inclusion (OCGDP) and Firm Performance

	Pooled OLS
C	3.766***

	(0.035)
<i>OCGDP_{it}</i>	0.166***
	(0.034)
<i>R²</i>	0.081
<i>Root MSE</i>	0.389
<i>FStatistics</i>	23310***

Results are significant at 1%,5% and 10% level and denoted by *,** and ***, respectively

Additional analysis

4.8 Regression results for financial inclusion and growth in market share

Table 7 depicts that the four dimensions of financial inclusion, BBPT, BBPP, ODGDP, and OCGDP, have a significant positive effect on operational performance, as confirmed by the pooled OLS regressing technique. The remaining two dimensions, namely APT and APP, have not had any kind of significant impact on firm performance.

Table 8: Regression Model for Growth in Market Share

	<i>Coefficient</i>	<i>T Statistics</i>	<i>P Values</i>	<i>Remarks</i>
Financial Inclusion(bbpt) → Growth in Market Share	0.262	5.140	0.000	Supported
Financial Inclusion(bbpp) → Growth in Market Share	0.642	4.830	0.000	Supported
Financial Inclusion(apt) → Growth in Market Share	0.025	1.360	0.174	Not Supported
Financial Inclusion(app) → Firm Performance	0.052	1.230	0.222	Not Supported
Financial Inclusion(odgdp) → Growth in Market Share	0.120	5.580	0.000	Supported
Financial Inclusion(ocgdp) → Growth in Market Share	0.258	5.550	0.000	Supported

4.9 Regression results for financial inclusion and customer satisfaction

Table 9 empirically confirms that BBPT, BBPP, ODGDP, and OCGDP generate a positive significant connection with customer satisfaction, while the APT and APP confirm no significant association with customer satisfaction.

Table 9: Regression Model for Customer Satisfaction

	<i>Coefficient</i>	<i>T Statistics</i>	<i>P Values</i>	<i>Results</i>
Financial Inclusion(bbpt) → Customer Satisfaction	0.085	1.750	0.082	Supported
Financial Inclusion(bbpp) → Customer Satisfaction	0.208	1.650	0.099	Supported
Financial Inclusion(apt) → Customer Satisfaction	-0.011	-0.71	0.481	Not Supported
Financial Inclusion(app) → Customer Satisfaction	-0.029	-0.750	0.455	Not Supported
Financial Inclusion(odgdp) → Customer Satisfaction	0.048	2.350	0.019	Supported
Financial Inclusion(ocgdp) → Customer Satisfaction	0.100	2.260	0.024	Supported

4.10 Regression results for financial inclusion and image of the bank

Table 10 empirically confirms that BBPT, BBPP, ODGDP, and OCGDP significantly influence the bank's image. In contrast, APT and APP confirm no significant impact on the bank's image.

Table 10: Regression Model for Image of Bank

	<i>Coefficient</i>	<i>T Statistics</i>	<i>P Values</i>	<i>Results</i>
Financial Inclusion(bbpt) → Image of Bank	0.241	4.830	0.000	Supported
Financial Inclusion(bbpp) → Image of Bank	0.591	4.550	0.000	Supported
Financial Inclusion(apt) → Image of Bank	0.026	1.510	0.133	Not Supported
Financial Inclusion(app) → Image of Bank	0.058	1.410	0.159	Not Supported
Financial Inclusion(odgdp) → Image of Bank	0.155	7.760	0.000	Supported
Financial Inclusion(ocgdp) → Image of Bank	0.341	7.940	0.000	Supported

4.11 Regression results for financial inclusion and stakeholder confidence

Table 11 depicts that BBPT, BBPP, APT, and APP have not impacted stakeholder confidence, while the ODGDP and OCGDP confirm a significant positive effect on stakeholder confidence.

Table 11: Regression Model for Stakeholder Confidence

	Coefficient	T Statistics	P Values	Results
Financial Inclusion(bbpt)→Stakeholder Confidence	0.050	1.340	0.182	Not Supported
Financial Inclusion(bbpp)→Stakeholder Confidence	0.123	1.260	0.210	Not Supported
Financial Inclusion(apt) → Stakeholder Confidence	0.011	0.880	0.380	Not Supported
Financial Inclusion(app) → Stakeholder Confidence	0.024	0.800	0.426	Not Supported
financial Inclusion(odgdp)→ Stakeholder Confidence	0.049	3.130	0.002	Supported
Financial Inclusion(ocgdp)→Stakeholder Confidence	0.114	3.330	0.001	Supported

4.12 Regression results for financial inclusion and service quality

Table 12 empirically confirms that BBPT, BBPP, APT, and APP have not impacted banks' service quality. In contrast, ODGDP and OCGDP confirm a positive significant effect on the service quality of banking firms.

Table 12: Regression Model for Service Quality

	Coefficient	T Statistics	P Values	Results
Financial Inclusion(bbpt) → Service Quality	0.070	1.290	0.198	Not Supported
Financial Inclusion(bbpp) → Service Quality	0.170	1.210	0.227	Not Supported
Financial Inclusion(apt) → Service Quality	-0.018	-1.000	0.318	Not Supported
Financial Inclusion(app) → Service Quality	-0.046	-1.060	0.290	Not Supported
Financial Inclusion(odgdp) → Service Quality	0.041	1.810	0.071	Supported
Financial Inclusion(ocgdp) → Service Quality	0.110	2.230	0.027	Supported

4.13 Regression results for financial inclusion and employee turnover

Table 13 empirically confirms that BBPT, BBPP, APT, and APP positively affect employee turnover in banks. In contrast, ODGDP and OCGDP confirm no significant impact on employee turnover.

Table 13: Regression Model for Employee Turnover

	Coefficient	T Statistics	P Values	Results
Financial Inclusion(bbpt) → Employee Turnover	-0.151	-2.340	0.020	Supported
Financial Inclusion(bbpp) → Employee Turnover	-0.366	-2.180	0.030	Supported
Financial Inclusion(apt) → Employee Turnover	-0.082	-3.740	0.000	Supported
Financial Inclusion(app) → Employee Turnover	-0.188	-3.690	0.000	Supported
Financial Inclusion(odgdp) → Employee Turnover	-0.028	-1.030	0.305	Not Supported
Financial Inclusion(ocgdp) → Employee Turnover	-0.020	-0.340	0.733	Not Supported

5 Conclusion

In the present empirical study, we investigate the relationship between financial inclusion and firm performance by employing data from Pakistan's banking firms. For financial inclusion, data was collected from the financial statements of 22 banking firms from 2010 to 2021. Data is collected from the branch manager and operation managers of the same banks for firm performance through a questionnaire. The empirical findings depict that the two indicators of financial inclusion, including bank branches per 1,000 km and bank branches per 0.1 m adults present the accessibility of financial facilities and two indicators of financial inclusion outstanding deposit as a percentage of GDP and exceptional credit as a percentage of GDP represent the resultant usage of financial facilities generates a significant positive impact on firm performance. The two indicators of financial inclusion, namely ATMs per 1,000 km and ATMs per 0.1 m adults, represent the accessibility of financial facilities and generate an insignificant impact on firm performance. Furthermore, the empirical findings from the additional analysis confirm that the banking firms engaged in financial inclusion activities are more prone to enhance their growth in market share, customer satisfaction, image of the bank, stakeholder confidence, service quality, and employee turnover.

Our findings add to the limited literature on the role of financial inclusion in enhancing firm

performance in Pakistan, with a specific focus on financial institutions. These results hold significance for shaping targeted policy interventions. Furthermore, the empirical results of the present research can be utilized as a benchmark across banking firms. By enacting policies that promote accessible financial services, fostering technological innovations that reach underserved populations, and developing supportive ecosystems that are not only beneficial for stakeholders but can collectively amplify the positive effect on the financial performance of the financial institution.

One practical implication of the present study is that policymakers in Pakistan should prioritize financial inclusion by implementing legislation that promotes lending practices among financial institutions. Additionally, banks should encourage customers to diversify their assets beyond cash and deposits. As such, the findings of this research could aid in shaping more effective financial sector reforms by demonstrating how expanding access to banking services can directly influence a bank's performance. Although the Pakistan banking sector serves as the primary source of credit in the domestic market, it has yet to fully meet its developmental responsibilities.

Furthermore, financial inclusion initiatives have the potential to reduce income inequality by providing availability to financial services for economically disadvantaged communities. This can lead to enhanced social equity and cohesion. Financial development strategies should include targeted policies to promote financial inclusion, ensuring alignment with initiatives to develop financial markets and expand credit access. These strategic plans should tackle challenges such as mitigating information asymmetries that may result in credit rationing, strengthening consumer protection, and promoting a better business environment within the banking sector.

To advance financial inclusion, it is essential to establish regulations that encourage the delivery of financial services to underserved communities, including low-income individuals, women, rural populations, and small businesses. These policies aim to expand the availability of banking outlets, such as ATMs and branch networks, to improve access to financial services. Policymakers focused on financial inclusion include monetary specialists from central banks and government authorities tasked with developing strategies to promote financial inclusion. The research findings highlight that, for financial institutions, deposit interest rates need to be competitive to encourage financial inclusion. Moreover, the interest rates on loan facilities should also be reasonable to stimulate borrowing and financing.

The present research study has certain limitations that further studies can address. The findings are derived from a very small sample of banking firms listed on the Pakistan Stock Exchange, so future studies might consider using a larger sample. Additionally, investigators are encouraged to utilize an inter-country database to emphasize the role of varying state rules about financial inclusions. The present study only employed operational performance measurements for firm performance; therefore, forthcoming researchers might consider utilizing various accounting and market-based measures.

In conclusion, this study offers valuable insights and sets the stage for future research directions. We suggest future research explore the relationships across different sectors, such as production, trading, or manufacturing. Additionally, it would be beneficial to examine previously overlooked variables, including corporate governance, corporate social responsibility, and FinTech developments. Moreover, we recommend incorporating various qualitative research methods, such as case studies, professional interviews, or group discussions, to understand better how industry professionals apply these concepts.

6 References

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7 Annexure

Table I: Reliability analysis for primary construct by using Cronbach's alpha coefficient

Test Scale	Mean (Unstandardized Items)
Average interitem covariance	.3163917
Number of items in the scale	6
Scale reliability coefficient	0.800

8 Questionnaire

1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5=Strongly Agree

Sr. No.	Firm Performance	1	2	3	4	5
1	The growth of our market share is higher than our main competitor.					
2	Customer satisfaction is higher than our main competitor.					
3	The image of our bank in market is better than our main competitor.					
4	The stakeholder confidence of our bank is better than our main competitor.					
5	The service quality of our bank is better than our main competitor.					
6	The employee turnover of our bank is lower than our main competitor.					