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THE EFFECT OF FINANCIAL INNOVATION ON THE BANKING SECTOR'S PERFORMANCE

Dr. Santo Jose
Assistant Professor,
Department of Commerce,
Henry Baker College, Melukavu,
Mahatma Gandhi University, Kottayam

ABSTRACT

In this study, we look at how technological advancements like digital lending, mobile banking, artificial intelligence (AI) credit evaluation, blockchain products, and fintech partnerships have affected the success of financial institutions. The current study investigates the connection between financial performance as measured by Return on Assets (ROA) and the adoption of innovations. It does this by using a quantitative, descriptive, and correlational research approach with a sample of banking organisations. Rising bank profitability is positively correlated with the adoption of cutting-edge technology, according to the results. Although different institutions have different adoption rates, the general trend indicates that financial innovation is essential for improving competitiveness, consumer engagement, and company efficiency. Findings stress the need for ongoing innovation in banking from a strategic perspective and call for more study into the topic's far-reaching effects.

Keywords *- Innovation Strategies, Product and Service Improvement, Banking Competition, Banking Industry, Financial Performance, Market Competitiveness*

1. INTRODUCTION

The worldwide banking and financial industry is undergoing a change due to the increasing globalisation and deregulation. Financial innovations like automated teller machines (ATMs), telephone banking, online banking, debit and credit cards, agency banking, and smartcard

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applications are happening at a dizzying rate in the worldwide banking business, particularly in Delhi's financial climate. When banking first started in England in 1694, the Bank of England was also founded. The bank was established by a small group of moneylenders who intended to lend money on interest. The development of new financial instruments and methods is a tale in and of itself.

1.1 Background of the study

In the last 20 years, Delhi's financial sectors have gone through tremendous changes as a result of both global and domestic factors. There have been many sector reforms that have led to increased financial activities, products, and organisational frameworks that have promoted and elevated the efficiency of Delhi's financial system. This evolution has been induced by both changing economic conditions as well as by technology. Volatile financial innovation, especially that within Delhi's financial environment, has been brought about by all of these factors alongside changes in the international financial weather and by rising domestic/international financial markets interconnectivity. Interest by research in financial innovation has intensified thanks to the rise in financial institutions' relative role in the new economy, together with a rapidly increasing innovation speed in finance, particularly amid the emergence of Delhi's burgeoning financial infrastructure.

1.2 Financial Innovation and Financial Performance

Banks in Delhi can't do without financial innovations anymore if they want to improve their performance and stay competitive. To beat the competition, you need these factors, which are strong strategic variables. Because of this, people are curious about how financial developments relate to the success of banks in the Delhi area. In a very unpredictable market, a bank can get an edge and improve its financial performance through an innovation that establishes a distinct competitive position. The only way to keep this up is to constantly innovate while also improving processes and products. Particularly pertinent is the endogeneity of innovation as a variable accounting for financial success, given the rapidity of technology change and the intense competition among Delhi's financial institutions.

Furthermore, while there is a large body of descriptive literature on the subject, empirical research on financial innovation in Delhi are scarce. Researchers will be able to evaluate the

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impact of financial innovation on the performance of commercial banks in the region if they gain a better grasp of the variables affecting each type of financial innovation in the context of Delhi. Presently, most empirical research has concentrated on a small number of innovations.

2. REVIEW OF THE LITERATURE

Muigai, R. G., & Gitau, S. N. (2018) described how the banking sector has been compelled to be more innovative in their businesses in a bid to gain an enduring competitive advantage and their financial performance improved due to globalisation and increasing market competition. Since it was hard to distinguish between competitors' brands of a specific category of product, banks were competing not only based on services but also based on goods. Banks in Kenya are more competitive today, which has pushed their participants to innovate so they could stay in operation and perform well. The aim of this research was to establish how innovation strategies impacted the financial performance of Kenyan banking firms. Since it improved their financial performance, the research recommended Kenya's banking industry to improve their existing products and introduce new ones. Kenya's banking industry also had to offer more varieties of products than its competitors. The report recommended that floor management, contact centres, and electronic customer information databases be adopted by Kenya's banking industry.

Kapidani, M., & Luci, E. (2019) researched in the field of finance as a measure of economic expansion and a catalyst for innovation in technology that aids in the mobilisation of capital for expansion. On the other hand, different findings emerge when looking at developed and developing nations. Characteristics of emerging nations include lower levels of investment in innovation, lower levels of competitiveness in conducting research and development, fewer educational institutions conducting research, and fewer economic incentives for private innovation. In order to investigate the connection between financial development indices and innovation, this study analyses data for fifteen developing nations spanning 1996–2016. If we want to know how the financial system is holding up, we need to look at the credit institutions and the equities markets. More lending by the banking sector will lead to an increase in patent applications, according to the study's results.

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YuSheng, K., & Ibrahim, M. (2020) looked at the impact of innovation adoption on the efficiency of banks in Ghana. The study's data came from 450 people in Kumasi, Ghana, who were either bank employees or clients. Organisational, product, process, and marketing innovations were identified as the innovative dimensions that support innovation in banks, according to the research. A clear and favourable correlation between innovation dimensions (market, organisational, and product innovations) and bank performance was also found in the research. Furthermore, this study's results demonstrated a strong correlation between innovation capability and the four categories of innovation: organisational, product, process, and market innovations. In addition, the results showed that advancements in the market, processes, and products all contributed to a company's success.

Muthinja, M. M., & Chipeta, C. (2018) studied the rate of change in financial innovation relative to the variables that influence it, as well as the rate of change in firm performance as a function of financial innovation's implementation in Kenyan banks. We approximated the Koyck distributed lag model's dynamic panel using the System Generalised Method of Moments. On average, it takes 1.179 years for bank financial performance to adapt to the four financial innovations that are being studied. Additionally, it takes less than a year (0.368 years) to reach half of the whole change in the firm's performance after a unit-sustained shift in financial innovations. As an additional point, the mean lag is 4.926 for ATMs and 2.849 for mobile banking. In contrast to automated teller machines, which can take up to five years to adapt to firm-level drivers of financial innovation, mobile banking takes just around three years.

Akhisar, I., Tunay, K. B., & Tunay, N. (2015) analysed the impact on the bank's online banking services of its financial performance. Using dynamic panel data methodologies, we examined the effects of ROA and ROE performance on 23 developed and developing nations' electronic banking services data sets from 2005 to 2013. The study's approach to analysis and use of banking data from both developed and developing countries are its major variations from other studies in the literature. The findings highlight the importance of electronic banking services and the fact that the ratio of bank branches to ATMs has a substantial impact on bank profitability in both developed and developing nations. Some variables were discovered to have

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the opposite of the anticipated negative association, which can be explained by variations in the nations' levels of development, sociocultural makeup, and electronic banking infrastructure.

3. RESEARCH METHODOLOGY

Finding trends, patterns, and correlations between profitability metrics and technology adoption (such mobile banking) is the goal of the study, which employs structured data analysis techniques.

3.1 Research design

This research employs a quantitative, descriptive, and correlational research design, which is rooted in secondary data analysis. Its primary aim is to examine the way banks are adopting financial innovations and how this relates to financial performance of institutions, specifically return on assets (ROA). Employing systematic data analysis instruments, the research aims to determine patterns, trends, and relations between profitability levels and technology uptake (e.g., mobile banking).

3.2 Data Source and Nature

data for this study were retrieved from industry databases, central banking databases, banks' innovation indexes, and open-access financial statements. A research sample of a hundred banking entities having confirmed and comprehensive information related to the application of financial innovations and Return on Assets (ROA) were part of this research. The key elements in the dataset include the types and prevalence of bank financial innovations taken up, ROA as the primary measure of financial performance, and cross-tabulations to examine the relationship among various ROA categories and use of specific innovations, particularly mobile banking.

3.3 Data Processing and Analysis Techniques

The research applied a variety of analytical techniques to explore the relationship between bank performance and financial innovation. The adoption levels of a number of financial innovations were collated using descriptive information, i.e., frequency and percentage distribution, and banks were classified in terms of their Return on Assets (ROA). To enhance readability and foster intuitive understanding, trends in data were visually illustrated through tools such as bar

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graphs and comparative graphs. To identify potential connections between digital innovation and profitability, a cross-tabulation analysis was also performed to assess the connection between ROA categories and mobile banking adoption. To identify whether technology adoption enhances financial performance, interpretative analysis was also performed by setting the results against the backdrop of existing research and industry benchmarks.

4. Data Analysis and Interpretation

Table 1 demonstrates, based on a sample of 100 institutions, the distribution and percentage of banks that have adopted various financial innovations. From the data, 78% of banks have adopted mobile banking, hence being the most adopted innovation. This indicates a notable shift towards online consumer engagement.

Table 1: Frequency of Banks Adopting Financial Innovations

Financial Innovation	Frequency	Percentage
Mobile Banking	78	78%
Digital Lending	64	64%
Fintech Partnerships	52	52%
AI-based Credit Scoring	38	38%
Blockchain Applications	20	20%
Not Using Any Innovation	10	10%

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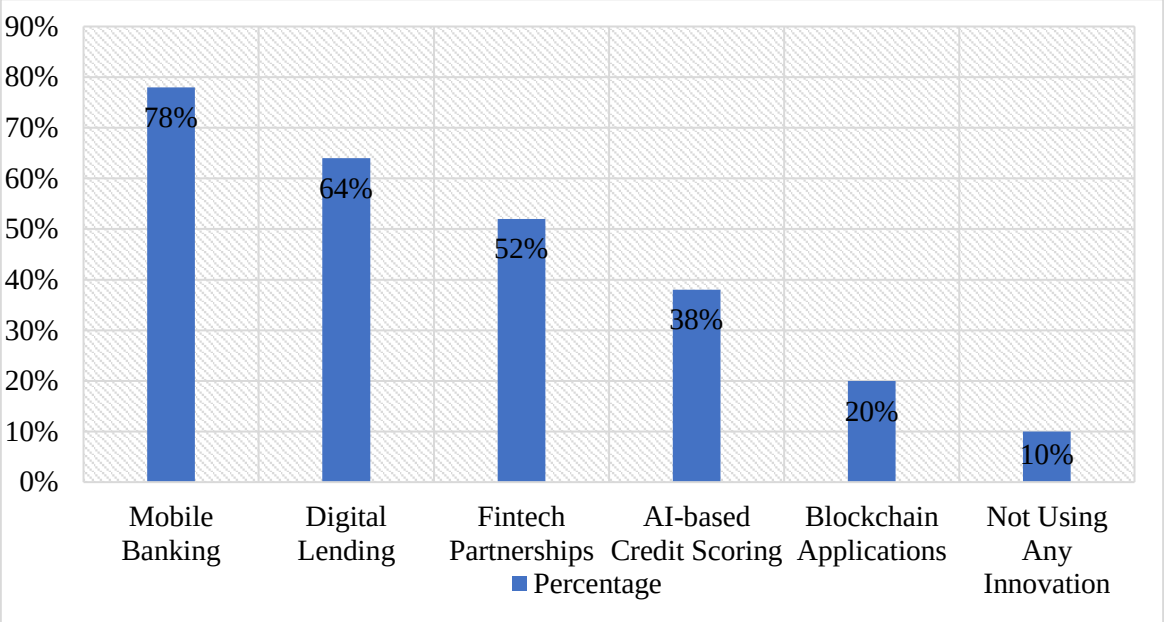

Figure: 1 Graphical presentation of percentage of Banks Adopting Financial Innovations

Source: self- generated

With 64% adoption, online lending follows next, marking a greater reliance on technology for accelerating the extension of credit. Moderate adoption rates for AI-powered credit scoring (38%) and fintech alliances (52%) reflect heightened interest in leveraging automation and external expertise for risk assessment. At just 20% acceptance, blockchain applications are still in their early stages. Most notably, 10% of banks responded that they were not making any use of financial innovation, which suggests a market that could be lagging behind when it comes to digital change. Overall, the statistics indicate a positive movement towards financial innovation, particularly in processes involving credit and consumer contact.

Table 2: Performance Categories Based on ROA (%)

ROA Category	Frequency	Percentage
< 1%	20	20%
1.0% – 1.5%	40	40%
1.6% – 2.0%	25	25%
> 2.0%	15	15%

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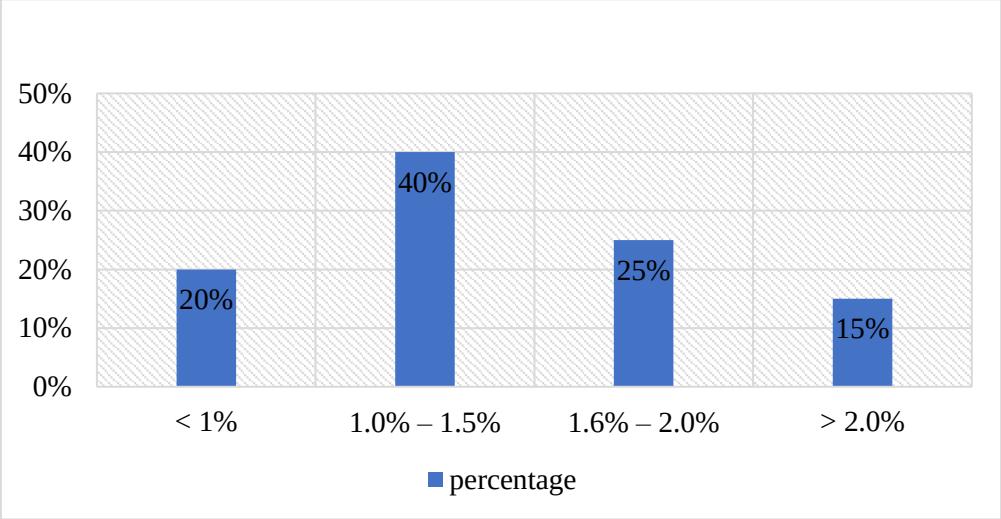

Figure: 2 Graphical presentations of Performance Categories Based on ROA (%)

Source: self- generated

Table 2 demonstrates how the distribution of 100 randomly selected institutions' bank performance is, based on Return on Assets (ROA). Most banks (40%) have relatively low levels of profitability, with ROAs between 1.0% and 1.5%. Although only 15% of banks achieved ROA over 2.0%, a lesser percentage (25%) achieved relatively higher ROA between 1.6% and 2.0%, showing relatively fewer high-performing institutions. At the lower end of the scale, 20% of banks had ROA < 1%, which could be due to inefficient asset use or weaker financial performance. Overall, the statistics show the potential for development and performance enhancement in the sector by proving that while a large percentage of banks are performing at moderate levels, only a small percentage are making excellent returns.

Table 3: Cross-tabulation – Mobile Banking Adoption vs. ROA Category

ROA Category	Adopted Mobile Banking	Did Not Adopt	Total
< 1%	10	10	20
1.0% – 1.5%	30	10	40
1.6% – 2.0%	22	3	25
> 2.0%	16	0	16
Total	**78**	**23**	**100**

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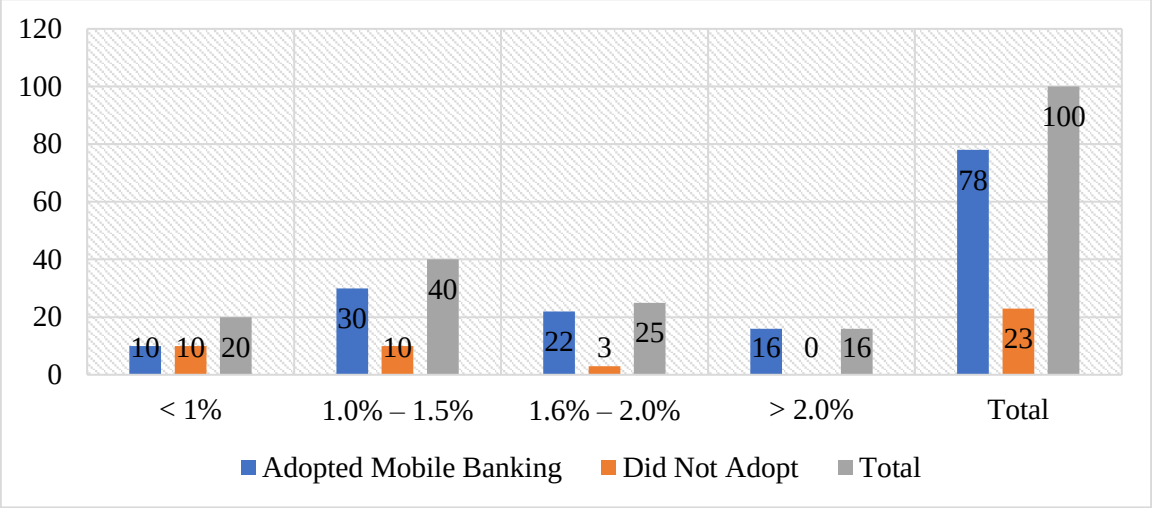

Figure: 3 Graphical presentation of Cross-tabulation – Mobile Banking Adoption vs. ROA Category

Source: self- generated

Table 3 provides cross-tabulation of 100 banks' mobile banking adoption and ROA groups, revealing the link between digital innovation and financial performance. Based on the study, banks employing mobile banking generally experience higher financial performance. None of the non-adopters reached this highest level of performance, but 100% (16 banks) with ROA greater than 2.0% had adopted mobile banking. Again, showing a good pattern, 22 of 25 banks fell in the 1.6% to 2.0% ROA adopter group. In contrast, adoption and non-adoption were evenly split (10 each) in the less than 1% lowest ROA category and suggested that poor performance is linked to less mobile banking. In general, the evidence is consistent with the hypothesis that digital innovation enhances bank efficiency by showing a high correlation between the adoption of mobile banking and higher profitability.

5. CONCLUSION

This research ends on a positive note, with a strong emphasis placed on the key role financial innovation, especially mobile banking, has to play in enhancing banking institutions' performance. Better financial performance is marked by higher Return on Assets (ROA), which is visibly directly related to digital advancements usage. Banks which implemented digital lending, mobile banking, and other technical innovations tend to be more profitable; usage of

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mobile banking is particularly directly associated with better financial outcomes. While many banks may present average performance, the evidence suggests that continued investment in technological innovation is crucial to the competitiveness and growth of the banking sector. The research does note, however, that results are correlational and that additional research is necessary to establish causality between finance performance and uptake of innovation.

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