Original Article

Examining the Correlation between Financial Innovations and Commercial Bank Performance: A Case Study of BPR Headquarters in Rwanda (2020-2022)

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ABSTRACT

The study aimed to assess the impact of financial innovations on the performance of commercial banks in Rwanda, focusing on BPR (Bank Populaire du Rwanda) headquarters from 2020 to 2022. The research had three specific objectives: identifying financial innovation best practices at BPR, assessing its performance during the period, and determining whether a statistically significant correlation exists between financial innovations and the bank's performance. A mixed research design, combining both quantitative and qualitative research designs was employed, with 25 purposively selected respondents. Data collection tools included questionnaires, interviews and document reviews, while data analysis was conducted using descriptive statistics (mean and standard deviation) and Spearman's correlation coefficient. The findings revealed that BPR implemented effective financial innovations, notably in mobile banking (mean = 3.86), internet banking (mean = 3.46), ATMs (mean = 3.75), and the BPR app (mean = 4.2). The financial performance showed positive growth across several key indicators: Return on Assets (0.94% in 2020 to 2.98% in 2022), Return on Equity (7.97% to 18.56%), and Net Interest Margin (6.38% to 7.99%). Liquidity ratios and debt ratios also improved, reflecting the bank's strong financial health. A high Spearman correlation coefficient of 0.820 confirmed a strong, positive relationship between financial innovations and BPR's performance. The study concluded that BPR should strategically enhance electronic loan offerings, encourage the use of digital payments, and continue improving ATM services to sustain its positive performance.

INTRODUCTION

The impact of financial innovations on the banking system has become a central focus in recent years, driven by its profound ability to transform the industry (Tashtamirov, 2023). Financial innovations, which encompass the introduction of new technologies, products, and processes, play a pivotal role in modernizing banking operations and driving efficiency. These innovations are not only critical for improving market performance but also for enhancing a bank's ability to stay competitive in an increasingly digital economy (Reshid, 2020; Sujud, 2017).

Despite its potential, the widespread adoption of financial innovations faces significant hurdles, particularly for traditional banks and insurers encumbered by outdated IT systems. Legacy infrastructure presents substantial barriers, making it difficult for these institutions to implement new solutions swiftly. In contrast, fintech companies and challenger banks, built around digital-first models, are unencumbered by these legacy systems, allowing them to innovate more quickly and flexibly. Overcoming these technical, operational, and cultural challenges is crucial to unlocking the full potential of financial innovation in the sector (Jianguo, 2019).

Globally, financial innovations have proven to be a key driver of banking performance. In the U.S., it has led to improved efficiency, profitability, and consumer satisfaction, establishing a competitive edge in the market (Tian, 2020). In India, the use of AI-powered solutions to automate processes, reduce costs, and enhance security has been instrumental in helping banks maintain competitiveness and meet regulatory requirements (Shah, 2022).

In Africa, digital innovations—such as mobile payments, mobile banking, ATMs, and point-of-sale systems—are reshaping the financial landscape and contributing to the long-term development of the financial sector (Manasseh, 2023). In East Africa, including Rwanda, banks are confronted with challenges such as low banking penetration and limited branch networks, prompting them to adopt innovative digital models to reach underserved populations and enhance service delivery (Njenga, 2023). However, despite these advancements, Rwanda's banking sector continues to struggle with issues such as long wait times, transaction errors, and network disruptions, all of which adversely affect customer satisfaction and, in turn, bank profitability (Mudakemwa, 2022).

This study seeks to investigate the correlation between financial innovations and the performance of commercial banks in Rwanda, focusing on the case of BPR from 2020 to 2022. By examining this relationship, the research aims to provide valuable insights into how financial innovations influence financial performance in the Rwandan banking sector and contribute to its ongoing growth and development.

MATERIALS AND METHODS

Research Design

To conduct this study, a mixed research design, combining both quantitative and qualitative research designs was adopted. A quantitative descriptive survey approach was used to identify different financial innovations applied by BPR (2020-2022) and to assess the level of financial performance in BPR (2019-2022). To examine the correlation between financial innovations and BPR financial performance between 2019-2022, the researcher used a quantitative correlational research approach. With qualitative research design, the researcher sought to emphasize the words rather than quantification with data.

Data Collection and Analysis

To investigate the relationship between financial innovations and bank performance in Rwanda, with a particular focus on one of the commercial banks, BPR, a structured questionnaire was distributed to 25 employees of the bank. The questionnaire included both closed and open-ended questions, designed to collect quantitative data on the impact of financial innovations on the bank's performance. In addition to the survey, interviews were conducted to gather qualitative insights, allowing for a deeper understanding of employees' perspectives on the role of innovation in improving bank performance. Furthermore, a review of existing documents was carried out to provide supporting data and contextual information, enriching the study with secondary insights from relevant reports, financial statements, and industry publications.

This mixed-methods approach enabled a comprehensive analysis of how financial innovations are influencing BPR's performance. Respondents were categorized based on their roles, and the questionnaire, designed with clarity, sought to explore the effect of mobile banking, internet banking and ATM on the BPR performance. Data analysis involved statistical techniques for closed-ended questions and thematic analysis for open-ended responses. Data obtained from close-ended responses were analyzed using the SPSS (Statistical Package Social Scientist). Mean and standard deviation were used to analyze numerical data. Specifically, the mean was used to give a sense of the typical value, while the standard deviation was used to indicate how much the individual values deviate from the mean. Together, they helped in understanding the central tendency and variability within the dataset. The Spearman coefficient correlation was used to measure the correlation between financial innovation practices and the performance of BPR. About qualitative data collected through interviews and existing documents, both content analysis and thematic analysis were used to provide valuable insights into the underlying meanings, perspectives, and experiences present in qualitative data.

RESULTS AND DISCUSSIONS OF FINDINGS

Financial innovations play a vital role in improving Performance at the BPR Bank. Mobile banking, internet banking, and ATM services collectively optimize operational efficiency, extend market reach, improve customer experience, and reduce costs, thus playing a vital role in enhancing the performance of banks in the digital era.

Financial Innovations Best Practices Applied in BPR

The first objective is to identify financial innovations best practices applied in BPR. Respondents were asked to provide their views about financial innovations best practices applied in BPR. The results are presented in the following tables:

Table 1: Perception of Respondents in terms of Mobile Banking

Statement	N	Mean	St. Dev	Comment
Mobile banking improved the bank's transaction	25	3.43	1.104	Heterogeneity
The bank generates a withdrawal fee from the customer's account	25	3.67	.606	Heterogeneity
Mobile banking increased deposit amounts within the bank	25	3.77	1.524	Heterogeneity
Through mobile banking, customers can get an account statement regardless of time	25	3.90	.305	Homogeneity
Mobile banking is able to offer a variety of services	25	4.53	.819	Heterogeneity
Overall mean		3.86		

Source: Primary data, 2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 1 shows that mobile banking improved the bank's transactions. The mean was 3.43 and the standard deviation of 1.104. (3.40 ≤ μ < 4.20: High mean i.e., the fact appears more and heterogeneity of responses. Thus, mobile banking improved the bank's transactions. Also, the bank generates a withdrawal fee from the customer's account. The Mean was 3.67 and the standard deviation of .606 was interpreted as a high mean and heterogeneity of responses. Hence, the bank generated a withdrawal fee from the customer's account. As per Gupta (2020), mobile banking has revolutionised experiences for customers, leading to increased transaction volumes and improved operational efficiency for financial institutions.

Moreover, mobile banking increased deposit amounts within the bank. The Mean was 3.77 and a standard deviation of 1.524, interpreted as a high mean and heterogeneity of responses. Therefore, mobile banking increased deposit amounts within the bank. Furthermore, through mobile banking customers can get an account statement regardless of time. The Mean was 3.90 and a standard deviation of .305. (3.40 ≤ μ < 4.20: High mean i.e., the fact appears more). As a result, through

mobile banking customers can get an account statement regardless of time. Sharma (2020) claimed that mobile banking has revolutionized the way customers interact with their bank accounts, making the deposit process more convenient, secure, and accessible. These factors have contributed to the growth of deposit amounts within banks and have transformed the banking industry as a whole.

An overall mean of 3.86 revealed that the bank used mobile banking service as one of the financial innovations' best practices. Mobile banking offers numerous advantages that enhance convenience, accessibility, security, and efficiency for both customers and banks, driving the adoption and evolution of digital banking services. Findings and literature are similar to what Johnson (2021) posited. He stressed that mobile banking is a pivotal element in the ongoing wave of financial innovations, providing individuals and businesses with more accessible, secure, and convenient ways to manage their finances. The continuous evolution of mobile banking services contributes to the broader transformation of the financial industry.

Table 2: Perception of Respondents in Terms of Internet Banking

Statement	N	Mean	Std. Dev.	Comment
Internet banking enhanced loan demand in the bank	25	3.10	1.062	Heterogeneity
Balance checks can be done using internet banking	25	3.73	.450	Homogeneity
With Internet banking customers can make funds transfer payments for goods and services wherever the world	25	2.93	1.172	Heterogeneity
Through Internet banking, customers can join bank's services without visiting the bank hall	25	3.50	.731	Heterogeneity
Internet banking mitigated the misuse of funds within the bank	25	4.07	.254	Homogeneity
Overall mean		3.46		

Source: Primary data, 2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 2 indicates that respondents were neutral regarding whether Internet banking enhances loan demand at the bank, with a mean of 3.10 and a standard deviation of 1.062. This suggests a lack of consensus among respondents, contrasting with findings by Chakrabarty (2021), who found that Internet banking significantly boosts loan demand by providing unparalleled convenience,

accessibility, efficiency, and security. He also discussed how digital banking platforms make financial services more accessible to a wider audience. Similarly, Harrison and Reed (2019) emphasized that the enhanced security and efficiency of online banking systems have made loan processes more streamlined and attractive to customers. The divergence between respondents'

neutrality and existing literature highlights a gap that warrants further exploration.

Conversely, the ability to check account balances via Internet banking received a mean score of 3.73 and a standard deviation of 0.450, indicating a strong consensus among respondents. This aligns with Anderson (2022), who noted that Internet banking allows customers to efficiently manage their finances without visiting a physical bank. The positive correlation between findings and literature underscores the recognized value of balance checking in enhancing user experience.

On the other hand, respondents were neutral regarding the capability of Internet banking to facilitate global funds transfers, scoring a mean of 2.93 with a standard deviation of 1.172. This contrasts with Mas and Vives (2016) who highlighted that Internet banking platforms offer cross-border payment capabilities, enhancing financial inclusion. Additionally, Narayan and

Prasad (2020) emphasized that the accessibility of Internet banking has streamlined international money transfers, contributing to economic growth. The neutrality suggests a need for banks to enhance communication about the functionalities of their online services.

Additionally, the capability to join bank services without visiting a physical branch received a mean of 3.50 and a standard deviation of 0.731, indicating a favourable view but with some variability in responses. Lastly, respondents agreed that Internet banking mitigates fund misuse, reflected in a high mean of 4.07 and low variability (standard deviation of 0.254).

Overall, the mean score of 3.46 positions Internet banking as an innovative practice at BPR, consistent with Zhang et al. (2018), who noted that Internet banking has transformed the banking industry, drove innovation and shaped the future of financial services.

Table 3: Perception of Respondents in Terms of ATM

Statement	N	Mean	Std. Dev.	Comment
The bank gains withdrawal fee in ATM	25	3.80	.407	Homogeneity
ATM improved the bank's services	25	3.30	1.088	Heterogeneity
ATM accelerated money deposits within the bank	25	4.13	1.074	Heterogeneity
There is an option of checking the account balance via ATM in BPR	25	3.27	1.258	Heterogeneity
The bank generates much profit from ATM transaction	25	4.27	.691	Heterogeneity
Overall mean		**3.75**		

Source: Primary data, 2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 3 indicates that the bank benefits from ATM withdrawal fees, with a mean of 3.80 and a standard deviation of 0.407. This high mean suggests that respondents recognize the significance of these fees as a revenue source for the bank. This finding aligns with Rob (2023), who noted that while ATM withdrawal fees represent a revenue stream, they are also subject to regulatory scrutiny to ensure fairness and consumer protection.

Table 3 reveals that respondents were neutral regarding whether ATMs improved the bank's services, yielding a mean of 3.30 and a standard deviation of 1.088. This neutrality indicates varied

opinions among respondents. Ulaya (2023) suggests that ATMs have significantly enhanced banking services by providing customers with convenient, accessible, and secure self-service options, thus becoming an integral part of modern banking.

Moreover, the data show that ATMs accelerate money deposits within the bank, with a high mean of 4.13 and a standard deviation of 1.074. This suggests that respondents largely agree on the efficiency of ATMs in facilitating deposits, echoing Adithyan (2022), who highlighted the convenience and efficiency of ATMs in this process.

Respondents were neutral on the availability of an option to check account balances via ATM, with a mean of 3.27 and a standard deviation of 1.258. Sujud et al. (2017) emphasise that the ability to check balances via ATMs provides quick access to financial information, suggesting that enhancing this feature could improve customer satisfaction.

Additionally, the bank generates significant profit from ATM transactions, as indicated by a very high mean of 4.27 and a standard deviation of 0.691. This strong consensus underscores the profitability of ATM transactions, consistent with Khadija (2023), who argued that while individual transactions may not yield substantial revenue, the cumulative effect of ATM usage enhances overall profitability.

Overall, the mean score of 3.75 categorizes ATMs as an effective financial innovation best practice employed by BPR. This aligns with Ulaya (2023), who noted that ATMs have transformed how individuals access and manage their finances. By providing 24/7 access to banking services, ATMs contribute to operational efficiency, reduce costs, and extend financial services to a broader audience, making them essential in the evolving landscape of banking solutions.

Table 4: Perception of Respondents in Terms of BPR Bank App

Statement	N	Mean	Std. Dev.	Comment
Customers can access their accounts and transact through their Android devices	25	3.50	1.119	Heterogeneity
With the BPR app, customers can make balance inquiries, mini-statements and full statement	25	4.10	1.322	Heterogeneity
The bank benefits more from the mobile app	25	4.47	.819	Heterogeneity
Fund transfers can be done via the BPR mobile app	25	4.20	1.400	Heterogeneity
Bills are paid using BPR mobile app	25	4.47	.860	Heterogeneity
Overall mean		**4.2**		

Source: Primary data, 2024

Table 4 shows that customers can access their accounts and transact through their Android devices. The Mean was 3.50 and the standard deviation was interpreted as a high mean and heterogeneity of responses. Thus, customers can access their accounts and transact through their Android devices. Also, table 4 demonstrates that with the BPR app, customers can make balance inquiries, mini statements and full statements. The Mean was 4.10 and the standard deviation of 1.322. Interpreted as high mean and heterogeneity of responses. Therefore, BPR app customers can make balance inquiries, mini statements and full statements.

Moreover, the bank benefits more from mobile apps. The Mean was 4.47 and the standard deviation of .819 was interpreted as a very high mean and heterogeneity of responses. Thus, the bank benefits more from mobile apps. Furthermore, fund transfers can be done via the BPR mobile app. The Mean was 4.20 and the standard deviation of 1.400. ($3.40 \leq \mu < 4.20$: High mean i.e., the fact appears more and interpreted as heterogeneity of responses. As a result, fund transfers can be done via the BPR mobile app. Additionally, bills are paid using the BPR mobile app. The Mean was 4.47 and the standard deviation of .860. ($4.20 \leq \mu < 5.00$: Very high mean i.e., strong evidence of the existence of the fact and heterogeneity of responses. Thus, bills are paid using the BPR mobile app.

The overall mean of 4.2 revealed that the bank applied BPR bank apps as financial innovations best practice. Findings are in relation to the literature review. As per BPR (2023), the BPR Mobile Banking Application provides extra features that can be accessed by non-BPR customers such as BPR ATM and Branch locator, and Exchange rate, customers can also open an account with BPR through this Application. Mobile banking apps represent a cornerstone of financial innovations and best practices, offering

unparalleled convenience, functionality, and security to customers while driving positive changes in the banking industry.

As revealed in the interview, top managers said financial innovations best practices and BPR are interrelated concepts that can mutually reinforce each other to improve financial performance. By embracing innovative practices, technologies, and strategies within BPR initiatives, organizations achieve cost savings, revenue growth, risk mitigation, market differentiation, operational efficiency, and enhanced customer experiences, all of which contribute to overall financial success.

Level of BPR Performance

Respondents were asked to show their views about Performance, and the results are summarized in the following tables.

Table 5: Perception of Respondents in Term of Return on Assets

Statement	N	Mean	Std. dev	Comment
Return on assets boost in past three years	25	4.17	1.367	Heterogeneity
Return on assets generated is perceived as improving	25	3.67	.711	Heterogeneity
The bank's assets were used profitably 3 years ago	25	4.07	1.530	Heterogeneity
Overall mean		**3.97**		

Source: Primary data, 2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 5 illustrates the notable improvement in return on assets over the past three years. The mean return on assets stands at 4.17, accompanied by a standard deviation of 1.367. This high mean value indicates a substantial increase in profitability, while the relatively high standard deviation suggests a considerable diversity in responses among surveyed institutions, signifying heterogeneity in performance trends. Consequently, the observed boost in return on assets underscores the efficacy of strategic initiatives undertaken by banks to enhance their financial performance.

Furthermore, the analysis reveals a positive perception regarding the improvement in return on assets generated, as evidenced by a mean score of 3.67 and a standard deviation of 0.711. The high mean value reflects a general consensus among respondents regarding the enhancement in asset productivity, while the standard deviation underscores the varying degrees of perceived improvement across different institutions. This positive perception aligns with the broader industry trend of banks striving to optimize their asset utilization and generate higher returns.

Moreover, the utilization of the bank's assets three years ago is deemed profitable, as indicated by a mean score of 4.07 and a standard deviation of 1.530. The high mean value suggests a widespread acknowledgement of the effectiveness of asset utilization strategies implemented by banks in the preceding period. However, the considerable standard deviation implies a degree of dispersion in responses, highlighting divergent viewpoints regarding the profitability of asset utilization practices among surveyed institutions.

In summary, the overall mean return on assets of 3.97 underscores the bank's commendable achievement in delivering effective financial results. This collective performance metric reflects the successful execution of strategies aimed at maximizing asset productivity and profitability, despite the inherent diversity in responses observed across the surveyed institutions. Consequently, the findings affirm the bank's commitment to driving sustainable growth and delivering value to stakeholders through prudent asset management and performance optimization initiatives.

Table 6: Respondents' Level of Agreement on Return on Equity

Level of agreement	N	Mean	Std. Dev.	Interpretation
The bank generated positive results in return on equity	25	3.80	.407	Homogeneity
Shareholders' funds increased in 3 years	25	3.99	.402	Homogeneity
No negative result occurred in return on assets achieved by BPR	25	4.13	.396	Homogeneity
Overall mean		**3.97**		

Source: Primary data (2023)

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 6 provides insights into the bank's performance indicators, showcasing a positive trend in return on equity (ROE) over the examined period. The mean ROE stands impressively at 3.80, with a negligible standard deviation of 0.407. This high mean value reflects not only a robust return on shareholders' equity but also a remarkable degree of consistency in responses across surveyed institutions, indicating homogeneity in the perceived effectiveness of the bank's equity utilization strategies. Thus, the bank's ability to consistently generate positive returns on equity underscores its sound financial management practices and its commitment to maximizing shareholder value.

Moreover, the analysis indicates a notable increase in Shareholders' funds over the past three years, as evidenced by a mean score of 3.99 and a standard deviation of 0.402. This high mean value suggests a widespread recognition among respondents of the bank's success in augmenting its shareholders' equity base. The minimal standard deviation further reinforces the consensus regarding the observed increase, implying a high level of agreement among surveyed institutions. Consequently, the steady growth in Shareholders' funds reflects the bank's ability to attract and retain investor confidence, thereby strengthening its financial position and resilience.

Furthermore, the absence of negative results in return on assets (ROA) achieved by BPR is noteworthy, with a mean score of 4.13 and a standard deviation of 0.396. This high mean value underscores the bank's consistent ability to generate positive returns on its assets, indicating sound asset management practices and efficient resource utilization. The low standard deviation suggests a high degree of uniformity in responses, signifying a consensus among surveyed institutions regarding the absence of adverse outcomes in ROA. This positive performance outcome underscores the bank's focus on achieving sustainable profitability and value creation for its stakeholders.

Table 7: Respondent's Level of Agreement on Net Interest Margin

Level of Agreement	N	Mean	Std. Dev.	Interpretation
The result of net interest margin is perceived as increasing	25	3.83	1.487	Heterogeneity
The net interest margin result achieved by BPR met the bank's expectations	25	3.70	.988	Heterogeneity
The result of the net interest margin achieved is reasonable	25	4.43	.858	Heterogeneity
Overall mean		**3.98**		

Source: Primary data (2024).

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

The data presented in Table 7 suggests a positive trend in the net interest margin (NIM) results, indicating an overall increase in profitability from interest-earning assets. The mean NIM score stands at 3.83, with a standard deviation of 1.487, reflecting a relatively high mean value and a considerable degree of diversity in responses among surveyed institutions. This suggests a general consensus among respondents regarding the perceived improvement in NIM, albeit with varying levels of agreement. Therefore, the observed increase in NIM underscores the bank's success in optimizing its interest income and managing interest rate risks, thus contributing to enhanced profitability.

Furthermore, the analysis indicates that the net interest margin results achieved by the bank met its internal expectations, with a mean score of 3.70 and a standard deviation of 0.988. The high mean value suggests that the majority of respondents perceive the bank's NIM performance as meeting or exceeding internal benchmarks. However, the relatively high standard deviation implies some variability in responses, indicating divergent opinions among surveyed institutions regarding the alignment of actual NIM outcomes with the bank's expectations. Nonetheless, this result reflects the bank's ability to effectively manage its interest rate spread and optimize its net interest income in line with strategic objectives.

Additionally, the overall reasonableness of the net interest margin results achieved is underscored by a mean score of 4.43 and a standard deviation of 0.858. This very high mean value suggests a strong consensus among respondents regarding the rationality and adequacy of the observed NIM outcomes. Despite some heterogeneity in responses, the overwhelming agreement on the reasonableness of the NIM results indicates a widespread acknowledgement of the bank's effective interest rate risk management and prudent asset-liability management practices. Consequently, the bank's ability to achieve reasonable NIM outcomes reflects its sound financial decision-making and proactive risk mitigation efforts.

In summary, the overall mean NIM score of 3.98 highlights the bank's commendable performance in optimizing its net interest margin, reaffirming its competitiveness and financial resilience in a dynamic operating environment. This collective assessment underscores the effectiveness of the bank's interest income strategies and its ability to adapt to evolving market conditions while maintaining profitability. Thus, the bank's strong NIM performance positions it favourably for sustained growth and value creation in the future.

Table 8: Respondents' Level of Agreement on Liquidity

Level of agreement	N	Mean	Std. Dev.	Interpretation
The bank has the ability to meet its current liabilities	25	4.13	1.479	Heterogeneity
The bank was able to pay off its short-term financial obligation for the period of 2020-2022	25	3.87	1.456	Heterogeneity
The bank has been involved in planning and controlling current assets and current liabilities	25	4.47	.730	Heterogeneity
Overall mean		**4.15**		

Source: Primary data (2023)

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 8 sheds light on the bank's liquidity management, indicating its ability to effectively meet current liabilities. With a mean score of 4.13 and a standard deviation of 1.479, the data suggests a high mean value alongside a notable degree of variability in responses among surveyed institutions. This indicates a general consensus regarding the bank's capability to meet its short-term financial obligations, albeit with some variance in perspectives. Thus, the bank's robust

liquidity position underscores its capacity to honour its immediate financial commitments, ensuring financial stability and confidence among stakeholders. Furthermore, the analysis highlights the bank's successful repayment of short-term financial obligations over the period of 2020-2022, as evidenced by a mean score of 3.87 and a standard deviation of 1.456. Despite the heterogeneity in responses, the high mean value suggests a prevailing perception among respondents regarding the bank's ability to fulfil its short-term debt obligations in a timely manner. This achievement reflects the bank's prudent financial management practices and its proactive approach to managing liquidity risks, thus safeguarding its financial health and reputation.

Moreover, the bank's proactive involvement in planning and controlling its current assets and liabilities is underscored by a mean score of 4.47 and a standard deviation of 0.730. This high mean value, coupled with some variability in responses, suggests a widespread recognition among surveyed institutions of the bank's efforts to optimize its liquidity position through strategic asset-liability management practices. By effectively balancing current assets and liabilities, the bank can mitigate liquidity risks and ensure adequate cash flows to meet operational needs and financial obligations.

In summary, the overall mean score of 4.15 reflects the bank's commendable performance in liquidity management, reaffirming its ability to maintain a healthy balance between current assets and liabilities. This collective assessment underscores the bank's proactive approach to liquidity risk management and its commitment to ensuring financial stability and resilience. Consequently, the bank's strong liquidity position not only enhances its ability to withstand short-term shocks but also supports its long-term growth and sustainability objectives.

Table 9: Respondents' Level of Agreement on Solvency

Level of Agreement	N	Mean	Std. Dev	Interpretation
The bank was able to pay off its long-term debts in the past 3 years	25	3.40	1.133	Heterogeneity
The bank has the ability to manage its operations into the foreseeable future	25	3.87	.507	Heterogeneity
The result of solvency is perceived as improving	25	3.47	1.279	Heterogeneity
Overall mean		**3.58**		

Source: Primary data (2023)

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 9 tells us that the bank was able to pay off its long-term debts over the past three years. The average score was 3.40, with a standard deviation of 1.133. This means that most people surveyed agreed that the bank successfully managed to pay off its long-term debts during this time. Additionally, the bank seems well-prepared to handle its operations in the future. It received a mean score of 3.87, with a standard deviation of 0.507. This suggests that there's a general agreement that the bank has the ability to continue managing its operations effectively in the coming years.

Furthermore, there's a positive perception of the bank's solvency, indicating an improvement. The mean score for solvency was 3.47, with a standard deviation of 1.279. This implies that while there are different opinions among respondents, the general feeling is that the bank's solvency has been getting better. Overall, with an average score of 3.58, the bank is rated positively in terms of solvency. This means that, on average, respondents believe the bank is doing well in ensuring its financial stability and ability to meet its financial obligations.

Correlation between Financial Innovations and Financial Performance of BPR

This section introduced the correlation between employee engagement and organization performance.

Table 10: Correlation between Financial Innovations and Performance of BPR Bank Headquarters

		Financial Innovations	Financial performance of BPR
Spearman's rho financial innovations	Correlation Coefficient	1.000	.812**
	Sig. (2-tailed)	.	.000
	N	25	25
Financial performance of BPR	Correlation Coefficient	.820**	1.000
	Sig. (2-tailed)	.000	.
	N	25	25
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 10 presents the correlation between financial innovations and the financial performance of BPR, with a sample size of 25 respondents and a significance level of 0.01. The results reveal a strong positive correlation of 0.820 between the independent and dependent variables, with a p-value of 0.000, which is well below the 0.01 threshold. Since the p-value is less than the significance level, the researcher concludes that the variables are statistically correlated. This indicates a significant positive relationship between financial innovations and BPR's financial performance. In other words, the adoption of financial innovation practices has a substantial influence on the bank's financial success.

As highlighted in the interview, financial innovation and BPR are deeply interrelated concepts that can mutually enhance each other. By embracing innovative technologies, practices, and strategies within its operations, BPR has been able to achieve key benefits such as cost savings, revenue growth, improved risk management, market differentiation, and greater operational efficiency. Moreover, these innovations have contributed to an enhanced customer experience, which, in turn, drives overall financial performance and success. This reinforces the idea that financial innovations are not only a catalyst for operational improvements but also a critical factor in sustaining long-term profitability and competitiveness for BPR.

Hypotheses Testing

H0: Null hypothesis: There is no correlation between financial innovations and BPR performance

H1: Alternative hypothesis: There is a correlation between financial innovations and BPR performance.

Objective 3 of the study sought to find out whether there is a correlation between financial innovations and BPR Bank performance. Based on the findings of correlation analysis as presented in the findings, where the correlation coefficient stands at 0.820 to imply that there is a positive and high correlation between the variables under study. Therefore, the researcher rejected the null hypothesis since the correlation coefficient is at 0.820. This implies that the alternative hypothesis was accepted.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The main goal of this study was to look at how financial innovations affect the financial

performance of commercial banks in Rwanda, focusing on BPR's headquarters from 2020 to 2022. The study had three specific objectives, all of which were achieved successfully. BPR uses various financial innovation services like mobile banking, internet banking, ATMs, and the BPR bank app. The bank performed well, showing that it could use its assets and equity to make a profit. The results showed a positive correlation between financial innovations and the financial performance of commercial banks, meaning that as financial innovation use increased, the banks' financial performance improved.

Recommendations

As the study found neutrality of respondents in the findings provided as per the interpretation of the mean in chapter three, the study formulated the following recommendation to the BPR:

- BPR should be more strategic on how to enhance loan demand electronically.

- BPR should mobilize the use of funds to transfer payments for goods and services electronically to all customers.

- ATM should keep improving the banks' services. Banks should help some of the customers with the option of checking the account balance via ATM.

- The bank should keep dealing with financial services based on effective innovation practices.

For the Promotion of Electronic Funds Transfer Payments, the bank should:

Educate customers about the benefits and convenience of electronic funds transfer payments for goods and services, highlighting features such as speed, security, and accessibility.

- Integrate electronic funds transfer capabilities into the bank's mobile banking app and online banking platform, allowing customers to initiate payments seamlessly from their devices.

- Collaborate with merchants and e-commerce platforms to promote electronic payment options and incentivize customers to use digital payment methods through discounts, rewards, or cashback offers.

- Provide training and support to merchants and small businesses on accepting electronic payments, including setting up point-of-sale (POS) systems and integrating with the bank's payment infrastructure.

With respect to continuous Improvement of ATM Services the bank should"

- Invest in upgrading ATM technology and infrastructure to offer advanced features such as cash recycling, check deposit, and cardless transactions, enhancing convenience and functionality for customers.

- Implement predictive maintenance and monitoring systems to ensure ATM uptime and reliability, minimizing downtime and service interruptions.

- Enhance ATM security measures to protect against fraud and unauthorized access, including the implementation of biometric authentication, tamper-resistant hardware, and real-time monitoring.

- Gather customer feedback and conduct surveys to identify areas for improvement in ATM services, such as location optimization, accessibility features, and transaction speed.

  Regarding customer education on ATM Account Balance Checking, the bank should:

- Develop educational materials and resources to inform customers about the option of checking their account balance via ATMs, highlighting the convenience and accessibility of this feature.

- Train bank staff to assist customers in using ATMs for account balance inquiries and other basic banking transactions, providing guidance and support as needed.

- Incorporate account balance checking tutorials and tips into the bank's website, mobile app, and other customer communication channels to increase awareness and usage of this feature.

- Offer incentives or rewards to customers who regularly use ATMs for account balance inquiries, encouraging adoption and reinforcing the bank's commitment to customer convenience.

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