

Financial Innovations and Profitability of Commercial Banks in Uganda

*Gershom Atukunda¹, Benjamin Musiita¹, Johnson Atwiine¹, Aquilionus Atwine¹, Anthony Moni Olyanga²

¹Bishop Stuart University, Faculty of Business, Economics and Governance, Department of Economics, Uganda

²Makerere University Business School, Uganda

*gatukunda@beg.bsu.ac.ug, bmusiita@beg.bsu.ac.ug, jatwiine@beg.bsu.ac.ug, aaquilionus@bsu.ac.ug,
aolyanga@mubs.ac.ug

Abstract: The purpose of this study was to examine the relationships between financial innovation and profitability of commercial Banks in Uganda. The study was prompted by the low profitability evidenced by some banks being closed down because of low profitability. The study adopted a cross-section and descriptive research design using Roscoe 1975 to get a sample size of 24 commercial banks. Self-administered questionnaires were used to collect the responses. Based on the goals of the study, the data was examined for validity and reliability, examined using SPSS, and the results were reported. The results showed that the profitability of commercial banks in Uganda had a positive and significant association with both process and product innovation, suggesting that improving one will benefit the other. However, product innovation was found to be a stronger predictor of profitability in commercial Banks in Uganda. With these findings, the study contributes to providing empirical evidence that financial innovation in commercial banks is highly influenced by commercial banks introducing and improving their products/services since it results in profitability. There is also a need to put much emphasis on Financial Innovations by continuously introducing and improving on the existing products/services. The Commercial Banks in Uganda should promote and appreciate Financial Innovations as they are vital not only in enhancing cost minimization, thus improving profitability

Keywords: *Financial innovations, profitability, commercial Banks in Uganda*

1. Background of the Study

The commercial sector, particularly commercial banks, plays a decisive role in the development of an economy. They act as custodians of the wealth and resources of a country, which are necessary for a nation's economic development (Harper & Chan, 2003). They act as financial shock absorbers by providing emergency liquidity in the form of credit and overdrafts to many businesses and households (Chiu, Kokkinis & Miglionico, 2021). They provide financing to businesses, governments and even households, thereby contributing to economic growth and development (Alkhazaleh & Almsafir, 2014; Ji et al, 2021). Despite their contribution to the overall economic growth of all economies, commercial banks have gone through turmoil since the 2008 financial crunch, the sector has continuously faced financial performance setbacks informed of low profitability, liquidity challenges and non-performing loans which have seen several commercial banks close (Singh, Basuki, & Setiawan, 2021). The Federal Deposit Insurance Corporation (FDIC) closed 465 failed banks from 2008 to 2012 in the USA alone, in contrast to the five years before 2008, when only 10 banks failed (FDIC.gov, 2020) arousing a global debate. The survival of commercial banks is highly leveraged on their profitability (Obadire, Moyo & Munzhelele, 2022).

According to Jihadi et al. (2021), profitability is a subjective indicator of a company's ability to create income, operate profitably as a going concern to expand, and respond to opportunities and dangers in the external environment. The overall success of Commercial Banks is seen in their profitability which is a necessary condition for their survival (Tangngisalu et al, 2020). Several authors have investigated the factors influencing profitability among commercial banks and one of them is financial innovation (Al-Dmour, Al-Dmour & Rababeh, 2020).

The profitability of commercial banks has also been associated with Financial Innovations (Aduda & Kingoo, 2012). A key element of economic activity for several millennia, financial innovations are at the center of the debate on how to shape the future global financial system (Saksonova & Kuzmina-Merlino, 2017). Financial innovation is the act of creating and then popularizing new financial instruments, as well as new financial technologies, institutions, and markets (Irungu, 2014). Financial innovations are powerful strategic tools that commercial banks employ to stay competitive and enhance their performance (Ibekwe, 2021). They also help them cut expenses associated with providing other financial services (Nofie, 2011). To break down and

repackage various financial risks, the majority of commercial banks are investing substantial sums of money in ICT and financial innovations (Guo & Liang, 2016). (Hamilton, Jenkinson, & Penalver, 2007). Whether the anticipated financial gains can be realized is a crucial topic regarding business investment in innovation today.

Financial Innovations, particularly Process and Institutional innovations, also improve Credit Risk Management through real-time data processing, reporting, and monitoring to enhance overall risk-management capabilities (Ganguly et al, 2017; Juan, Antonio & Bahillo, 2016). They also enable efficient data management and integration of new data sources, offer greater transparency to risk profiles of current and prospective borrowers and offer better insights for credit decisions which ultimately lead to sound commercial banks' profitability (Brookes, 2016).

In Uganda, Commercial Banks continue to grapple with performance setbacks (Kessey, 2015). Recent statistics indicate a rise in the Non-Performing Loan portfolio rate (NPLR); and a fall in Return on Equity (ROE) as well as Return on Assets (ROA) (Bank of Uganda report, 2021). This is evidenced by the rise in the ratio of non-performing loans from 4.0% in June 2020 to 7.4% in June 2021. For example, four banks were closed between September 1998 and May 1999 for poor financial performance (Habyarimana, 2003). National Bank of Commerce was closed by BoU in 2012 to protect depositors' interests and maintain financial stability (Kasekende, 2014). Global Trust Bank was closed in July 2014 because of accumulated losses of up to Ushs 60 billion (BOU report, 2019) and in October 2019, BoU took over Crane Bank because NPLs had eroded capital; the NPLs had grown from Ushs 145 billion in December 2021 to almost Ushs 200 billion by October 2016 (BOU report, 2020/2021). These challenges could be attributed to inappropriate Financial Innovations.

2. Literature Review

Product Innovations and Profitability of Commercial Banks: Product innovation is divided into two categories of innovations: radical innovation which aims at developing a new product/service/idea, and incremental innovation which improves existing products/services/idea (Hoang, 2010). Antonnet (2014) suggests that banks should first understand all bank-related customer needs and then evolve a comprehensive product package that covers the entire range of these needs a product should be focused on the local market; that a bank's product policy should be localized by taking into account regional quirks. According to her, if a bank offers a customized product, it will instill a sense of psychological ownership in the consumer, which will sustain profitability and lead to customer retention. The introduction of new credit, deposit, insurance, leasing, hire purchase, derivatives, and other financial products including e-banking, investment, and retail banking are among the different facets of product innovation in banks, according to Anand & Mantrala (2019). They contend that the introduction of these products is intended to increase efficiency or better adapt to shifts in consumer demand. Commercial banks use product innovation as one of their competitive tactics, and it significantly increases their profitability.

Barbu et al. (2021) claim that product innovation arises from developing a novel approach to resolving a customer's issue, which ultimately serves the interests of banks and customers alike. Innovation in goods and services suited to particular markets and requirements is fueled by both internal and external forces. Market research, bank-to-bank exchanges of new product ideas, and technical advancements are examples of significant external forces. Internal considerations may include internal product development, employee and consumer feedback, and the monitoring and assessment of current products (Sok & O'Cass, 2015). According to Qi, Boyer, and Zhao (2009), products go through different stages in their productive lives, such as invention, maturity, and decline stage, creating a distinct cycle in the product life. This is similar to what happens to any living thing. Like any other living thing, the products deteriorate and eventually perish if they are not continuously improved. Creating a unique solution to a customer's problem leads to product innovation. He argues that if businesses hope to maintain profitability and growth, product innovations should be a constant and intentional strategic strategy (Maclean et al, 2021). These tactics could include ways to present the product differently, make adjustments, and introduce new ideas altogether (Kamakia, 2014). If commercial banks want to stay profitable and relevant, they must innovate their products (Chen, You, & Chang, 2021). Private businesses called Credit Reference Bureaus (CRBs) gather databases that prospective lenders can access to assist them in reviewing, analyzing, and assessing a customer's credit application. They give prospective lenders access to an applicant's credit history by generating a "credit report" that includes information about

the applicant's payment and credit history, financial accounts and how they have been handled, and other details of interest to the credit industry (Bussmann et al, 2021).

Since credit reference bureaus help lower the amount of non-performing loans, all banks and other lending organizations, including those in the agricultural and industrial sectors, should utilize them to reduce the number of repeat defaulters. Consequently, this lowers bad debt provisioning and write-offs, increasing bank profitability (Babu & Oyaro, 2018))

In Wairimu & Omagwa (2020) research, "The Effect of Credit Reference Bureaus, Non-Performing Loans on Profitability of Commercial Banks in Kenya," it was discovered that a significant portion of the credit extended by Kenya's banking industry has been secured by tangible assets like real estate and buildings, along with the associated evaluation expenses. To increase bank profits, banks have locked out interest income and commissions that would otherwise accrue from these decent borrowers and payers, particularly those from the informal sector and SMEs without access to such collateral.

According to Migwi (2013) in his study on Credit Monitoring and Recovery Strategies Adopted by Commercial Banks in Kenya, the use of CRBs generates information collateral that commercial banks can rely on to lend to those well-paying customers who would otherwise be prevented from borrowing due to a lack of tangible collateral. Overall, the banks' profitability is increased by utilizing the interest money and commissions that these creditworthy borrowers—who would otherwise be denied credit—will generate.

Dankwah (2012) suggests that commercial banks and their regulators use CRBs to facilitate credit information sharing in their paper, "The Relevance of Credit Reference Bureau and its Effect on the Financial Industry in Ghana." This will make it possible for borrowers to establish a history—also known as collateral or reputational capital—that they can utilize to obtain loans. This is particularly important for borrowers in small and medium-sized businesses (SMEs) and informal sectors that have a solid performance history and rely on their reputational capital to obtain financing. This will increase the profitability of banks.

Another innovation in financial institutions is agency banking. It entails using engaged agents operating under a legitimate agency agreement to provide limited-scale banking and financial services to the underserved population as opposed to using tellers or cashiers. On behalf of a bank, the proprietor of an outlet handles banking transactions. These merchants, or agents, are being used more and more on a global scale as crucial financial inclusion distribution channels (Simboley, 2017). Because of agency banking's advantages, banks can grow without having to "break the bank." Since over 80% of adults in developing sub-Saharan Africa lack access to banking, banks have a clear need and potential to employ agents to grow their companies take back significant market share from telecommunications and connect with the underprivileged (Gitau, 2014). Ndung'u (2014) discusses how agency banking has improved many people's lives in underdeveloped nations despite its adoption's difficulties. In addition to providing bank customers with convenience, agency banking has evolved into a means for lenders to raise low-cost deposits with minimal overhead.

According to Nyaboga et al. (2012), agency-banking services draw the attention of criminals. The study examines the impact of agency banking on entrepreneurs in Kisii County, Kenya. Customers become suspicious of these bank employees and lose faith in them as a result of this. As a result, they start to choose which of these agents to deal with, which has an impact on how profitable commercial banks can be. Infrastructure expenses and security have a major influence on the profitability of commercial banks that can be linked to agency banking, according to Aduda, Kiragu, & Ndwiga, (2013) examination of the impact of agency banking on commercial banks' profitability in Kenya. She suggested that while implementing agency banking, security precautions, such as a risk-based approach, be given more consideration. Commercial banks should thoroughly vet their agents to make sure that big-ticket transactions are handled on their behalf; real-time, secure operating systems are available for such transactions; Data integrity and confidentiality are protected, and an audit trail can be created (Aduda, Kiragu, & Ndwiga, 2013).

According to Aduda and Kingoo (2012), the primary goal of all commercial banks is to boost profits by growing their branch network to reach a large number of their current and future clients who live in rural areas with restricted access to banking services. Commercial banks have entered rural areas through Agency Banking,

where it would otherwise be prohibitively expensive for them to directly participate in providing banking services. This is especially true in rural areas where transaction volumes and numbers are insufficient to cover the cost of a branch. Low-income clients also tend to feel more at ease banking at their local store rather than traveling to a faraway branch, which allows the bank to collect the income these customers give at a lower cost (Dawley, 2021). Mobile banking is another breakthrough in financial institutions. Koenig-Lewis, Palmer, and Moll (2010) define mobile banking as a system that lets customers of a financial institution use a mobile device—like a smartphone or personal digital assistant—to conduct a range of financial operations.

There is no distinction between mobile banking (also known as M-banking) and mobile phone banking. Mobile banking services include the ability to manage accounts, transact in the stock market and banks, and access tailored information such as balance inquiries, account statements, check statuses, checkbooks, fund transfers between accounts, and more (Karjaluo et al, 2021). Therefore, mobile banking is not the same as mobile payments, which are similar to using a debit or credit card to make an EFTPOS purchase and entail using a mobile device to pay for products or services at the point of sale or remotely.

There is now a greater level of connection between mobile banking and back-end core banking systems because mobile banking is seen as the "fifth channel" of banking, existing independently of online banking. As a result, banks have developed methods to draw in new clients and hold on to their current clientele, both of which could increase revenue (Ngumi, 2014). Financial institutions' adoption of mobile banking is crucial for enhancing the financial adequacy of commercial banks as well as for improving operations and lowering costs over time, all of which increase profitability, according to Mwange's (2014) discourse on mobile banking and the profitability of commercial banks in Kenya. Simplice (2012) asserts that mobile banking increases the number of channels a bank can employ to provide its services, improving operational effectiveness and preventing losses and costs associated with delayed client order fulfillment. Furthermore, a positive reputation for the company's logistical capabilities might lead to the creation of new orders. This is improved by mobile banking, which offers access to banking services at any time and from any location. It also makes push and pull services available for quick transactions. In terms of increased market share, increased banking penetration, customer satisfaction, customer loyalty, expanded product range, customized products, better response to client demand, lower operating costs, and meeting government service obligations, Wishart (2006) and Mwange (2011) lend that the use of M-Banking can contribute to improved bank performance. M-banking is still employed as a strategic instrument that affects the income structure of banks since profitable strategies that are successful in growing their clientele and retaining them are ultimately more profitable.

A study conducted by Gakure and Ngumi (2013) explored the relationship between financial innovations and the profitability of commercial banks in Kenya, revealing that bank innovations had a statistically significant effect on bank profitability. Nyathira (2012) similarly examined the relationship between financial innovation and profitability within Kenyan commercial banks. The results indicated that financial innovation had a positive correlation with profitability, particularly in the context of commercial banks. Despite the acknowledged significance of financial innovations and the wealth of descriptive literature on the subject, surprisingly little empirical research has been done. Owing to this situation, the banks have been denied access to vital information on this important field of financial innovation, which periodically results in the reversal of the relationship between innovation and performance. The influence of financial innovations on bank profitability in Uganda has not been thoroughly examined, which is why this study is necessary to address the gap.

Process Innovations and Profitability of Commercial Banks: Process financial innovations, such as digitization or business process automation (BPA), are the technologically enabled automation of tasks or services to complete a certain task or workflow. To cut expenses, resources, and investments, it is a method of managing information, data, and procedures. By using computer technology to automate important company operations, BPA boosts productivity (Ngugi & Karina, 2013).

According to a PwC and Strategy& consumer survey conducted in the United Kingdom, there is a big discrepancy between what customers want and anticipate from banks and what they want. They discovered that consumers, particularly SMEs, favored conducting the majority of their banking on mobile and Internet platforms. The largest difference between preferred and real online banking services was seen in the financing

and credit domains. Instead of visiting a bank branch, more than 30% of SMEs stated they would prefer to be able to apply for and receive loans online (Bitetto et al., 2024). The Association for Information and Image Management (AIIM) said in its 2014 white paper, "Automating Credit Processes," that small and medium-sized businesses are increasingly using nonbanks for loan access, payment processing, and transaction management. And SMEs will have even more incentives to start adopting these alternative services as they acquire traction and develop over the coming few years. They advised banks to start putting more effort into meeting consumer wants if they want to stave off competition from both established financial technology firms and other banks that have made a more forceful entry into the digital era. Banks should be able to reduce their operating expenses by handling more transactions automatically and in real-time as a result of a step toward digitization (AIIMWhitePaper, 2014). Capgemini Consulting Group UK and MIT in Boston investigated the strategies and tactics (both internal and external) that successful businesses are implementing to achieve successful digital transformation. Their findings suggest that banks should develop the digital end-to-end execution of transactions that is at the core of digital banking, with the hope that their rewards will partially manifest as lower operating costs (Capgemini Consulting Group, 2017). To operate with fewer staff members and provide fewer in-person services, they advise banks to automate their business processes, particularly credit. This will free up resources that the banks can use to either offer higher-value advisory services or reduce their cost basis. While digitizing credit risk protects bank revenue and may reduce leakage by 5 to 10 percent, automating credit operations and digitizing the critical steps in the credit value chain can result in cost savings of up to 50 percent (Kelly, 2014).

According to Busby (2017), there should be far more advantages to digitizing banking business processes than just cost savings. These advantages include increased customer satisfaction, higher rates of client retention, and higher revenues per customer. If the transformation is not completed, banks may find it difficult to retain profitable customers, particularly small and medium-sized enterprise (SME) borrowers. These customers, who make up 20% of the bank's clientele and account for 80% of its profitability and survival, may soon be walking out the door with a leg, an arm, or even their entire body. Another process of financial innovation is Internet banking, which is the act of a bank providing its services to customers via the Internet as a channel for the delivery of a variety of value-added goods and services to bank customers (Nielsen, Bukh, & Mols, 2000).). Online banking is another name for it (Gerrard & Barton Cunningham, 2003). It enables people to conduct financial operations from their homes, offices, or over the Internet. Customers can complete any normal transactions using Internet banking that they cannot complete through traditional banks, including account transfers, balance inquiries, bill payments, stop-payment requests, loan repayments, and online loan applications (Raza et al., 2020). While some Internet banks are solely online and do not have a physical location, others are traditional banks with online banking as well (Singh & Srivastava, 2020).

Both consumers and banks benefit from Internet banking since it increases the effectiveness of the services provided to them. It is economical and practical. Furthermore, the growth of Internet banking has changed the banking industry's distribution channel structure (Salem, Baidoun, & Walsh, 2019). Singh (2019) asserts that Internet banking significantly boosts bank profitability and ignites competition in the banking industry. Applications for online banking push banks toward technical advancements that lead to increased productivity and profitability (Naem, 2020).

According to Chedrawi, Harb & Saleh (2019), the effectiveness of online banking has a beneficial influence on banks' profitability because it can lower transaction costs by 40 to 80% compared to traditional branch banking. The typical operating costs and overhead physical expenses incurred by the banks are decreased by the costs of Internet banking services internet banking lowers the banks' operational risk (Ciciretti et al., 2009) and improves the quality of their assets, which directly raises operational profitability and return on equity (ROE) (Madugba et al., 2021). Nduta & Wanjira (2019) claim that because of the advancements in electronic infrastructure, using online banking has a cheaper cost per transaction than traditional banking.

According to Nejad (2022), banks that use Internet banking services extensively are categorized as "innovative" because of their higher distribution channels and lower costs compared to the sector average. High-education consumers demand Internet banking more than regular consumers do (Sullivan, 2000). Despite their smaller number, internet banking has had a positive impact on the profitability of banks that have used it.

The adoption of online banking has increased the profitability of the banking industry, according to the findings of his study on the effect of Internet banking on the profitability of financial institutions in Kenya. This can be linked to increased profitability, efficacy, and efficiency (Kaur, 2021).

Another breakthrough in banking processes is the automated teller machine (ATM). ATMs are the most well-known devices that give consumers electronic access, and their primary purpose is to carry out the bank's primary function. A plastic card with unique properties is used to operate ATMs (Milne, 2006). According to Olatokun and Igbinedion (2009), the plastic card is taking the place of checks, in-person customer attendance, restricted banking hours, and paper-based verification, all of which slow down the customer care process.

Using a plastic, chip, or magnetic-stripe card and a Personal Identification Number (PIN) that has been issued by the financial institution, Bank clients can now carry out several banking tasks, such as taking money out of their accounts, checking their balances, transferring funds between accounts, and purchasing prepaid mobile phone credits (McAndrews, 2003).

3. Methodology

Research Design: To comprehend the link between the variables as stated in the research objectives, a cross-sectional, quantitative survey approach was employed in this investigation. The cross-sectional survey method was selected due to its affordability and ability to collect a substantial amount of data quickly. Self-report surveys are frequently used to collect data, allowing the researcher to compile a sizable amount of data from a sizable participant pool. However, it also allows the researcher to gather information on a variety of other factors to examine potential correlations between the important variables of interest and variations in sex, age, income, and educational attainment (Sekaran, 2006).

Study Population and Sample Size Determination: The study population comprises 25 commercial banks in Uganda (Bank of Uganda, 2022). A major focus was on the head offices of these banks; by default, these are all located in Kampala. Based on the given population. A sample size of 24 commercial banks determined using the Krejcie and Morgan (1970) table for sample size determination was utilized in this study. Seven (4) respondents were selected per bank to fill out the questionnaire. These included the head of operations, manager, head of Business Development and head of Business Technology departments.

Operationalization and measurement of variables: The study variables were operationalized and measured using questionnaire items developed and tested by previous scholars. These are detailed in the table:

Table 1: Operationalization and Measurement of variables

Global variable	Definition	Dimensions	Measurement	Sample items
Profitability	Profitability a subjective measure of how well a business entity can use assets from its primary mode of business to generate revenues, perform efficiently as a going concern to achieve growth and be able to react to environmental opportunities and threats (Gilbert & Wheelock, 2007)	⇒ROA ⇒ROE ⇒NIM	Respondents rank 3 items included in the questionnaire on a five-point Likert scale.	*Level of ROA *Level of NIM *Level of ROE
	Financial Innovation involves the introduction of new financial products/services for the existing market, for the new	Product Innovations Process Innovations	Respondents rank 24 items included in the questionnaire on a five-point Likert scale.	* In the last three years, the bank has introduced the following products/services:

Financial innovations	market and a new process of delivering financial services	Mobile Banking Agency Banking Small scale Business Accounts * In the last three years, the bank has introduced new delivery or distribution methods for the following products/services: E-Banking Electronic funds transfer Small scale Business loans
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4. Results of the Study

Demographic Characteristics of the Respondents: Respondents were requested to furnish details about their demographic profile, encompassing gender, age, education, degree of education, and duration of current employment.

Table 2: Characteristics of the respondents

Categories	Items	Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	44	50.6	50.6	50.6
	Female	43	49.4	49.4	100.0
Age	25-29	6	6.9	6.9	6.9
	30 -34	20	23.0	23.0	29.9
	35-39	29	33.3	33.3	63.2
	40-44	22	25.3	25.3	88.5
	45-50	10	11.5	11.5	100.0
Level of Education	Degree	68	78.2	78.2	78.2
	Masters	19	21.8	21.8	100.0
Number of years in the present position	Less than 2 years	3	3.4	3.4	3.4
	2-5 years	35	40.2	40.2	43.7
	5-10 years	41	47.1	47.1	90.8
	11 years and above	8	9.2	9.2	100.0
	Total	87	100.0	100.0	

Source: Primary data

The results in Table 2 indicate that the majority of the respondents were male (50.6%) and women (49.4%). This implies that commercial banks are gender sensitive since the number of women is almost equal to the number of men in those higher positions and this improves the effectiveness of the bank and thus increases the performance of the bank. Concerning the age bracket of the respondents, the results indicate that the majority

of the respondents were between the age bracket of 35-39 years (33.3%), these were followed by those between 30-34 years (23.0%) and the least group had between 45-50 (11.5%). This implies that banks employ young energetic workers who are in a position to execute their duties well and this improves the overall performance of the bank.

The results also indicated that most of the responders (78.2%) were followed by master's degree holders (21.8%). This implies that the bank employees well knowledgeable workers who come and execute their duties well while applying different knowledge acquired while at school and this helps them in making informed decisions which improves the performance of the bank.

Finally, concerning the number of years employees had spent in their current positions, The results show that most of the responders had spent 5-10 years (47.1%), these were followed by those who had spent 2 to 5 years (40.2%) and the least group had spent less than 2 years (3.4%). This implies that employees have spent enough time in their current position and this increases their ability to judge well and make well-informed decisions based on their experience and this improves their performance.

Bank characteristics: The bank characteristics were distributed as indicated in Table 3

Table 3: Bank characteristics

Categories	Item	Frequency	Percent
Age of the bank	5-10years	4	34.8
	11-15years	4	34.8
	15yrs and above	15	59.4
Number of Branches in a country	Less than 20	10	45
	20-30	5	21.4
	31-50	3	13.7
	More than 51	5	19.9
	Total	23	100

The results in Table 4.2 indicate that the majority of the banks had spent 15 years and above in operation (59.4%), these were followed by those that had spent 11-15 years and 5-10 years (34.8%). This is an indicator of improved profitability and sustainability in the business.

The majority of the banks, according to the results, had less than 20 branches (45%), these were followed by those which had between 20-30 branches (21.4%) and the least ones had 31-50 branches (12.7%). This implies that most banks have been growing steadily and their revenues have increased, they increased the branches to serve more customers.

Pearson Correlation: The degree of linear correlation between the research variables was assessed using Pearson's correlation analysis, which is represented by the letter r. The Pearson correlation coefficient, known as r, ranges from +1 to -1. A value of 0 suggests no correlation exists between the two variables. A value above 0 signifies a positive correlation, indicating that as one variable's value rises, so does the other's. A value below 0 indicates a negative correlation, suggesting that as one variable's value increases, the other's decreases. Since the study variables were measured on a continuous scale, it was determined that the best method for examining the relationships between the variables was the Pearson correlation.

Table 4: The Correlation Table

Variables	1	2	3	4	5	6	7	8	9	10
Products introduced-1	1									
Products improved-2	.495**	1								
Product Innovations-3	.592**	.535**	1							
Process introduced-4	.491**	.571**	.608**	1						
Process improved-5	.506**	.673**	.671**	.617**	1					
Process innovation-6	.555**	.695**	.714**	.683**	.514**	1				
Total income to total assets-7	.601**	.686**	.738**	.504**	.664**	.656**	1			
Net Income after Taxes to Total Equity Capital-8	.620**	.777**	.798**	.582**	.720**	.729**	.527**	1		
Net interest income to total earnings assets-9	.077	.047	.074	-.009	.056	.029	.192*	.025	1	
Profitability of Commercial Banks-10	.606**	.422**	.560**	.522**	.681**	.675**	.596**	.700**	.431**	1

** . Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Relationship between Product Innovation and Profitability of Commercial Banks in Uganda: Table 4's findings demonstrate a substantial positive correlation ($r=.560$, $p>.05$) between product innovation and the profitability of Uganda's commercial banks. This implies that any improvement in product innovation will also improve commercial banks' profitability. This further suggests that an improvement in the current products and the introduction of new ones will lead to an improvement in the profitability of commercial banks.

Relationship between Process Innovations and Profitability of Commercial Banks in Uganda: Table 4's findings demonstrate a substantial positive correlation ($r=.675$, $p>.05$) between process innovation and the profitability of Uganda's commercial banks. This implies that any improvement in process innovation will also improve commercial banks' profitability. This further implies that raising the standard of operations and implementing novel approaches will boost commercial banks' profitability.

Regression Analysis

Table 5: Ordinary least square analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.260	.544		-7.827	.000
	Product Innovations	1.195	.165	.567	7.230	.000
	Process innovation	.655	.190	.270	3.445	.001
	R					
	R Square					
	Adjusted R Square					
	F					
	Sig.					
		.783 ^a	.614	.608	101.622	.000 ^b

a. Dependent Variable: Profitability of Commercial Banks

The results in Table 4.4 indicate that process innovation and product innovations are significant predictors of the profitability of commercial banks. This is because a unit increase in product innovation will result in to 0.567 unit (Beta =.567, $p<.01$) increase in profitability of commercial banks in Uganda. In addition, a unit increase in process innovation will result in a 0.270 unit increase in the profitability of commercial banks (Beta-.270, $p<.01$). Finally, the results indicate that process innovation and product innovation explain 60.8% (Adjusted R Square= .608) of the fluctuations in Uganda's commercial banks' profitability. This also implies that the remaining 39.2% is explained by other factors not considered in this study.

5. Conclusion and Recommendations

It is clear from the research and debate that process improvements have a favorable impact on the profitability of commercial banks in Uganda. This implies that Commercial Banks' profitability will continue to rise as they roll out new products and services and make improvements to those already available. It is clear from the results and discussion that process innovations and the profitability of commercial banks are significantly positively correlated. This suggests that for commercial banks to increase their profitability, they must place a high priority on both implementing new processes and distribution channels and streamlining their current ones. It can finally be concluded that both process and product innovations are significant predictors of the profitability of commercial banks. This is because they explain 60.8% of the fluctuations in Uganda's commercial banks' profitability. This further implies that financial innovations are very important for the banks to reduce costs and also increase their profitability.

Recommendations: There is also a need to put much emphasis on Financial Innovations by continuously introducing and improving the existing products/services. The Commercial Banks in Uganda should promote and appreciate Financial Innovations as they are vital not only in enhancing cost minimization but also in improving profitability.

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