

# Innovation Strategies and Competitiveness among Commercial Banks in Uasin Gishu County Kenya

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**Abstract:** The general objective of this study was to establish the influence of innovation strategies on competitiveness among commercial banks in Uasin Gishu County, Kenya. The specific objectives was to establish the influence of process innovation on competitive advantage among commercial banks in Uasin Gishu County, Kenya. The research was based by the diffusion of innovation theory. The study used a descriptive research approach. The study focused on a sample population consisting of nine commercial banks. The selection of commercial banks is predicated upon their substantial capital basis, extensive client base, and sizable loan portfolio. The research focused on a sample of 110 employees from the operations, marketing, and information and communication technology divisions of the aforementioned institutions, as indicated by the human resource records. Given the relatively limited size and convenient accessibility to the population, the census methodology was used. The needed data was gathered via semi-structured questionnaires. Quantitative and qualitative methods was used in this study. To do this, the study employed content analysis, a technique for delving into qualitative data. In this course, both descriptive and inferential statistics was used to analyze numerical data. Descriptive statistics may be calculated using variables like mean, standard deviation, frequency, and percentage. Regression analysis is one tool used in inferential statistics. In conclusion basing on the study findings, the study came up with the following conclusions; a unit increase in strategic process innovation will lead to a 0.137 increase in competitive advantage commercial banks in Uasin Gishu County Kenya when all other independent variables are held constant. Lastly, the p-values for all the variables are all below 0.05, which indicates that they are all statistically significant. The study recommended the following; the commercial banks should be involved in coming up with new process innovation strategies and use them in new marketing new markets and implementing of other new process innovation strategies.

**Keywords:** Strategic Process Innovation; Competitive Advantage.

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## 1. INTRODUCTION

Banks worldwide commonly employ strategies aimed at fostering economic expansion in nations through the augmentation of operating revenues, deposits, and credit facilities (Sarji, 2017). According to Asisi et. Al. (2023), banking institutions globally are confronted with intense competition as a result of shifting market dynamics, the socioeconomic circumstances of consumers, and ongoing technology advancements (Kiemo & Kamau, 2020).

According to the McKinsey Global Banking Annual Review of (2022), the global banking sector is currently facing challenges arising from elevated inflation, escalating interest rates, and market volatility. The competitive advantage achieved by commercial banks is contingent upon the level of sustainability of such advantage. The concept of innovation within the financial sector pertains to the capacity to develop and promote novel financial instruments, markets, and institutions, hence enhancing the availability of pertinent information and facilitating the process of transmitting payments (La Frame & White, 2014). In contemporary times, the concept of innovation has garnered significant significance due to three primary factors: the fast evolution of technology, the dynamics of the market, and the intensification of competition resulting from globalization (Aghion, et al. 2012). According to Johnston and Bate (2013), the presence of innovative abilities plays a crucial role in fostering economic growth and ensuring the sustainability of competitiveness within the commercial banking sector in Kenya.

Over the last couple of decades, industry-specific innovation strategies have evolved into competitive mechanisms and determinants of an institution's competitive position (Henrysson & Nuur, (2021). The banking sector has seen significant competition, severe shifts in the financial market, diverse client expectations, and modifications in banking goods and services (Diener & Špaček, 2021). The use of technology systems to facilitate banking operations has prompted banks to explore novel strategies for outperforming competitors within the business. Obeidat (2016) asserts that the financial sector in the United Kingdom has seen a significant number of advancements in payment systems. Communication and financial institutions have implemented novel solutions to address the demands of customers while also facilitating payments to suppliers. Technology is being used to facilitate advancements, such as the persistent utilization of barcodes, the widespread adoption of many cards, and the substantial proliferation of smart phones. These advances have fostered a climate conducive to innovative practices in the realm of payment systems. In light of these many advancements, it is crucial to conduct an examination of their impact on innovation and their connection to competitiveness. However, it is worth noting that there is little empirical information available on this subject, and the existing results are inconclusive.

The implementation of innovation methods on a global scale has facilitated the UK financial industry's capacity to maintain a competitive edge. This advantage is contingent upon firms effectively internalizing the advantages derived from inventive endeavors (Lashitew, Bals, Van & Tulder, 2020). According to Forbes (2022), success of a firm is about gaining competitive advantage and that innovation strategies are imperative in realization of it. In developed countries like United States of America, blue chip companies like Google and Apple are good examples of firms that have embedded innovation strategies into their daily operations. Innovation strategies allow firms to create value to their customers by lowering the prices of products relative to competitors while at the same time increasing reliability and durability of the products (Forbes, 2022). In United Kingdom, OGL (2021) shared that as the country has left European Union coupled with the negative shocks occasioned by COVID-19 pandemic, its recovery and thus overall competitive advantage is strongly hinged on adoption of latest innovation strategies. Within the context of China, Schmuckb and Benke (2020) argued that process, product, market and technology innovation strategies are crucial for competitive advantage of the firm by creating value of customers and shareholders. Alibaba is one good example of company in China that has sound innovation strategies that have resulted into radical changes in the manufacturing sector in the country (Schmuckb & Benke, 2020). Lee and Yoo (2019) assert that product innovation is a pivotal innovation strategy that may enable organizations to get a competitive edge.

According to Timotius (2023), in the Indonesian setting, organizations are facing a fast evolving business climate and more stringent competition. As a result, it is essential for these companies to adopt strategies centered upon innovation in people, processes, and products in order to maintain their competitiveness. According to a study conducted by Oktaviani, Roespinoedji, and Saudi (2020) in Indonesia, more data suggests that the implementation of an innovation strategy has a favorable impact on a firm's competitive advantage. According to Timotius (2023), the competitive advantage of a corporation is most influenced by product innovation, followed by process innovation, and finally people innovation. According to Farida and Setiawan (2022), a firm can best improve on its competitive advantage through adoption of innovation strategies. Therefore, from the reviewed literature on a global perspective, it is evident that key innovation strategies are process, product and technology innovation. A research done by Ilo, Wilson, and Chioke (2014) in Nigeria revealed a strong and favorable correlation between technological innovation and employee performance within the banking sector in Africa. Similar evidence in Nigeria by Ikpe, Ikechukwu, Okri, Okoi and Tabi (2021) indicate that

process and product innovation are important innovation strategies that can allow an organization to remain competitive. Within the context of Egypt, Abd-Imoaty–Ohamed and Soliman (2022) pointed out that market, process, product and technology innovation are important innovation strategies that firms have found imperative to gain competitive advantage. In Sudan, Mohamed, Ibrahim, Eltayeb and Abker (2019), radical innovation strategy does not significantly influence competitive advantage of the firm.

Evidence from Zimbabwe by Gwangwava and Muranda (2021) indicate that differentiation, focus and cost leadership are important dimensions of competitive advantage of the firms that are strongly influenced by market, process, product and technology innovation strategies. Within the context of Mozambique, Kahn (2021) technology, process, product and market innovation strategies provide an important opportunity for firms to achieve superior competitive advantage positions. According to Tesfaye's (2016) study on the Ethiopian banking system, it is observed that the use of Information and Communication Technology (ICT) has yielded favorable outcomes in terms of investment returns within the banking industry. Banks that use information and communication technology (ICT) as an innovative approach have shown a competitive advantage over their counterparts in the market. In Uganda, Wandega (2018) opined that competitive advantage at firm level can be enhanced through product, market and process innovation strategies. On this account, effective and efficient innovation strategies are imperative in achieving competitive among firms.

In Kenya, companies have recognized the prevailing high level of rivalry within their individual sectors, prompting them to develop innovative tactics in order to sustain their competitiveness within the business environment. According to Laban and Deya (2019), the implementation of effective innovative methods leads to enhanced levels of high performance and competitiveness. Mohammad (2018) posits that the implementation of process, product, market, and organizational innovation strategies enables organizations to strategically position themselves in order to recognize market opportunities and successfully capitalize on them, therefore establishing a lasting competitive advantage. Market innovation significantly influences the competitive landscape of a corporation. According to Mohammad (2018), companies may preserve their competitive advantage in the sector by expanding their market shares via market innovation, hence increasing awareness among consumers.

As shared by Kisuya, Kihara and Macheru (2023), product innovation exerts the greatest effect on competitive advantage of the firm followed by process and lastly marketing innovation. Thus, effective determination of competitive advantage of the firm is strongly hinged on product, process and marketing innovation strategies. According to Wambua (2019), developing an innovation strategy that is in line with business trends is an important undertaking that can allow firms to gain superior competitive advantage. Most of firms in Kenya like Cytonn real estate have adopted innovation strategies with product innovation being the widely adopted strategy followed by technology, process, marketing and lastly organizational innovation strategies (Wambua, 2019). According to Obati (2019), process, product and market innovation are important innovation strategies that firms in Kenya have found imperative as they seek to attain superior competitive position in their industries.

The global banking industry is characterized by stiff competition driven by rapid technological advancements and increased financial legislation, leading banks to constantly strive to grow their market shares, profits, efficiency, and asset bases (Ejike, 2018). However, these revenue sources have been reduced, impacting the competitiveness of banks (Sarji, 2017; KBA,2021; CBK, 2018; McKinsey Global Banking Annual Review, 2021). Additionally, Kiemu and Kamau (2020) record that the cost-to-income ratio, measure of bank's efficiency, substantially edged upwards to 74.1 percent in 2020 from 60.2 percent in 2019. This pushed some banks into mergers/acquisitions in a bid to achieve economies of scale while others were edged out (Central Bank of Kenya, 2022). To address this challenge, banks need to embrace strategic innovation to remain competitive and responsive to changing customer needs (Osano & Koine, 2016).

Due to the small number of commercial banks compared to the size of the market as a whole, the banking industry is sometimes described as being uncompetitive. Commercial banks in Kenya need to comply with new capital adequacy standards from the Central Bank of Kenya if the sector is to remain healthy in the wake of several mergers and acquisitions (Cytonn, 2016).” Furthermore, the implementation of interest rate limiting legislation in 2016 resulted in a decrease in income streams for banks, hence necessitating the management of operational expenses (Barclays Bank,

2017). “To maintain their competitive edge, banks have made substantial investments in research and development endeavors with the aim of devising creative strategies to address the evolving demands of their customers. The performance of commercial banks in Kenya has shown a favorable growth trajectory, but with a declining rate (Juma & Atheru, 2018).”

The industry has been marketing financial goods that are mostly distinguished by their packaging, despite their substantial similarities. The decreasing competitiveness of banks is evident as they are unable to assert their ability to provide exceptional financial services (CBK, 2016). The evolving nature of the sector has necessitated that commercial banks adopt creative strategies in order to maintain their competitiveness. According to Cherop (2016), many factors have played a significant role in shaping innovation within the financial sector. These factors include intense rivalry, the dynamics of financial service markets, advancements in technology, the scale of financial institutions, macroeconomic situations, legislative frameworks, and heightened financial oversight. Hence, it is essential for commercial banks to implement innovative initiatives in order to maintain competitiveness within the operational landscape.

The existing literature includes Timotius' (2023) research conducted in Indonesia, which examines the relationship between innovation, competitive advantage, and small firms. Timotius highlights the need for organizations to adopt a people-centric approach in response to the dynamic and more competitive business environment, process and product innovation “strategies in order to remain competitive Wambua (2019) sought to establish the effect of innovation strategies on competitive advantage” taking a case of Cytonn Real Estate Kenya. It was shown that innovation strategies had been widely adopted by Cytonn with product innovation being the widely embraced one followed by technology, process, and marketing and lastly organizational innovation strategies. Obati (2019) conducted an analysis of innovation strategies and competitive advantage borrowing evidence from Kenya’s public sector through a case of Uber. The enhancement of Uber's competitive advantage has been heavily attributed to the implementation of process, product, and market innovation initiatives. However, the aforementioned studies create gaps for instance; Timotius (2023) did a study in Indonesia and not in Kenya. The study by Wambua (2019) adopted case study approach thus creating methodological gap. In order to fill these gaps, the present study seeks to establish the effect of process innovation on competitiveness commercial banks in Uasin Gishu county Kenya.”

## 2. STRATEGIC PROCESS INNOVATION

In the contemporary business environment, organisations experience stiff competition and fierce rivalry in virtually every industry. In order for these companies to remain relevant in the market, they must develop and adopt new strategic plans aimed at developing, implementing and providing Process innovations (Almujaini, et al., (2022). The relevance of Process innovation to companies can therefore not be overemphasized as it serves as a vital competitive tool in manufacturing and oriented industries (Bogers, 2009). Differential of products and services allow an organization to effectively meet the ever changing needs and preferences of its customers. Providing differentiated products provide an incredible opportunity to customers who select from a range of product portfolio (Peter, Munga & Nzili 2021). Transformation of processes in an organization helps in improving the quality of products and services provided to customers and this improves competitive advantage of the business. Modification of products as a form of process innovation helps to stay in line with the changes in the needs of customers (Christopher, Jane & Yussuf, 2021).

There are different reasons for using process innovation; the most common one is rivalry with the competitive companies that produce similar of the same product (Arshad, Asif & Baloch, 2012). Process innovation can slow down competitors by giving the company advantages from the manufacturing context, such as cost efficiency, production speed, and quality consistency (Chen & Queater, 2006). Caraco and Crifo (2014) agree on the possibility to gain competitive benefits by implementing process innovations, further adding that the innovation is an important source of increased productivity. Having an increased level of process innovation can also enable the evolvement of the company’s products, and from this create more innovation project in the form of product innovation (Brettel, Mauer, Engelen & Kupper, 2012). However Doran & Ryan (2014) concluded that there is often focus groups within an organization that identifies areas of improvement for process innovation but introduction of new products could also be a trigger or opportunity to improve the production.

Process innovation can be a costly and difficult practice if the knowledge and experience is lacking. Letangule & Letting (2012) suggest that companies should invest in both technical and managerial innovations synchronously. Adoption of new technologies cannot be realized unless they work in harmony with new organizational processes and systems, since performance depends on how well innovation of different types advances organizational goals together. Corters et al (2012) also discuss how formalized roles in process innovation projects can have the adverse effect on its success. On the other hand, formalized processes are beneficial for reducing uncertainty. However, Shahzad et al. (2012) see a problem with introducing new process technology, other than all the uncertainties that need clarification, and planning that needs to be applied. The issue being that the company's products could suffer both from stops and quality. With an inflexible process line or a highly specific process solution, new process technology can possibly hinder product innovation. Gilbert (2022) argues that, to maintain a competitive edge, businesses must constantly improve their processes in order to achieve their goals, whether those goals are financial, social, or environmental (Mehmood, Alzoubi, & Ahmed, 2019). Only by consistently using techniques that set them apart from competitors can businesses hope to keep their competitive edge. A company may go much farther with this. A company has an edge in the market when it is able to keep its consumers happy while simultaneously increasing productivity and cutting down on most of its expenses (Emami-Langroodi, 2021).

The early exploration for the affirmative relationship between firm performance and firm level of innovation borrows heavily from (Schumpeter 1934). Schumpeter argues that when new products that are innovative are first introduced in the market there is usually low direct competition there by allowing the organization to enjoy high profit. But over time due to competition and imitation the profits are likely to erode (Sharma and Lacey, 2004). Varis and Bitumen (2010) suggest that improving firm performance and success is the major reason organizations involve in innovative actions. Process innovation is the application of novel or considerably better production or delivery technique. Significant changes in techniques are equipment or software updating or installation, better technology for manufacturing e.g. automation, or sensor installation that improves processes (Almujaini, et al., (2022). This type of innovation can advance the superiority of the product or decrease unit price of production (OECD Manual Oslo, 2005). Product innovation on the other hand is rolling out of a service, good that is significantly novel or enhanced as per its anticipated usage. This contains technical specification improvement materials, components or the software it come with e.g. plastics that are environmentally friendly or recyclable, detachable for replacement parts. (OECD Manual Oslo, 2005).

An organization has competitive advantage whenever it has the ability to attract customers from its competitors and withstand the competitive forces (Thompson & Stickland 1998). Sustainable competitive advantage is achieved in non-profit organizations by proper adoption and utilization of innovative systems and processes that result in long term advantage to the organization. Prahalad and Hamel (1990), describes main competence as specialized expertise that comes from complementing work activity and technology. Examples of competitive strategy include high standards of products; cost efficiency, simpler mechanisms in achieving tasks. Artz et al. (2010) conducted a longitudinal study on the impact of product innovation and patents acquired on the organization performance in varied industries spanning from Canada and United States. They realized that firm performance was significantly affected by product innovation.

An investigation on if innovation has a direct influence on organization performance in particular service businesses was carried by (Therrien et al. 2011). The results showed that for a company to get more profit from its innovations it needs to arrive in the market early enough or have more novel products that can last the competition for a while. Another empirical study by (Gunday et al. 2011) done in Turkey covering the manufacturing firms in different industries explored the effects of process, product, marketing and organizational innovation. The research revealed that process means, product type, marketing and organizational innovation have an influence on organizational performance. The contribution of process innovation on performance in the non-profit organizations is not clear. This study therefore seeks to understand the effect of process innovation on performance of non-profit organizations in Kenya

In a study conducted by Kowo, Akinbola, and Akinrinola (2018), an investigation was undertaken to analyze the impact of process innovation on firms in Nigeria. The study conducted among 114 workers at prominent telecommunications businesses in Lagos State, Nigeria, reveals that process innovation has a substantial impact on organizational performance. Furthermore, the findings indicate a noteworthy correlation between service modification and sales volume. "In their recent study, Peter, Munga, and Nzili (2021) used a descriptive survey research methodology to

investigate the effects of process innovation strategies on the productivity levels of leading commercial banks in Kenya. A study was conducted on 494 executives and managers from the top, middle, and lower levels of the 8 major commercial banks. Data was collected from a total of 221 individuals using a stratified random sampling procedure. Primary data was obtained via the use of structured questionnaires. Based on the findings of the study, it has been observed that the leading commercial banks in Kenya use strategies centered on process innovation. "The study conducted by Christopher, Jane, and Yussuf (2021) aimed to examine the effects of process innovations on the productivity levels of small and medium-sized industries located in Nairobi County, Kenya. The research used a positivist approach in its methodology and adopted an explanatory research design. By using a stratified random sampling technique, a sample size of 254 individuals, consisting of managers or owner managers from small and medium-sized manufacturing enterprises (SMEs) affiliated with the Kenya Association of Manufacturers, was successfully selected. The data was gathered via a questionnaire. A strong positive link was shown between process innovation and corporate performance."

The impact of process innovation on corporate performance and the function of design management in Malaysia was investigated by Alshorman, Alzoughool, Khalaf, and Ahmed (2020). In this study, 386 participants were surveyed from the product industries in Malaysia using a quantitative research technique. The necessary information was gathered by a validated questionnaire and a simple random sample technique. The survey data was further evaluated using Structural Equation Modeling (SEM). The research found that design management not only mediated the connection between process innovation and the success of Malaysia's manufacturing sector, but that it also established a direct causal link between the two.

### 3. METHOD

A descriptive research design was used for the study. The target population included operations department: branch managers and credit managers, marketing department: marketing managers, ICT department ICT managers. Data collection instrument was structured questionnaire. Primary data was collected by the use of a structured questionnaire. Questionnaire was administered to respondents by self, a strategy that is expected to increase the response rate. A pilot test is a small-scale study carried out to test the suitability of the data collection instrument before the actual study is done (Zikmund, 2003). It is aimed at testing the reliability and validity of the data collection instrument before the actual data collection is done. Once data is collected, it was crosschecked and verified for errors, completeness and consistency. It was coded, entered and analyzed descriptively using IBM Statistical Package for Social Sciences (SSPS 23). Pearson correlation analysis was used to test the relationship between variables in the study hypotheses. Multiple linear regression analysis model was computed to determine the statistical relationship between the independent variable and the dependent variables.

### 4. DISCUSSION

The descriptive statistics results of strategic process innovation on competitive advantage commercial banks in Uasin Gishu county Kenya are shown in Table 4.1. According to the results, 63.6% of the respondents either agreed or strongly agreed that effective management of processes facilitate coordination of operations and this may allow an organization to achieve superior competitive edge. This statement had a relatively high mean score of 3.6186 indicating that the majority of the respondents agreed with it. Additionally, 88.1% of the respondents either agreed or strongly agreed that process innovation can slow down competitors by giving the company advantages from the manufacturing context, such as cost efficiency, production speed, and quality consistency. This indicated that there was a high level of affirmation by the respondents which was reinforced by the high mean score of 4.2034.

The results also showed that 83.1% of the respondents either agreed or strongly agreed that the organization is involved in coming up with new products and marketing them to the existing customers through process innovation. This statement had a mean score of 4.4237 indicating a very high affirmation by the respondents and agreeing with it. Further, only 41.5% of the respondents either agreed or strongly agreed while 30.5% were neutral towards the assertion that the organization is involved in coming up with new process innovation strategies and use them in new marketing new markets. This high level of uncertainty was also reflected in the mean of 3.3644.

According to the results, 70.3% of the respondents either agreed or strongly agreed that the organization is involved in implementation of other new process innovation strategies. This statement had a mean score of 3.9322 indicating a high level of agreement. Lastly, 72.9% of the respondents either agreed or strongly agreed that strategic process innovation enhances performance. This was an indicator of the affirmation by most of the respondents which was supported by the high mean score of 3.8305. A review of the standard deviations of the statements showed that all the standard deviations ranged between 0.76691 and 1.12216 indicating a low variation between each response and the mean responses.

**Table 4.1: Descriptive Statistics of Strategic Process7Innovation**

Statements on Strategic Process7 Innovation	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
Effective management of processes facilitate coordination of operations and this may allow an organization to achieve superior competitive edge.	0.0%	19.5%	16.9%	45.8%	17.8%	3.6186	0.99503
Process innovation can slow down competitors by giving the company advantages from the manufacturing context, such as cost efficiency, production speed, and quality consistency.	0.0%	6.0%	5.9%	50.0%	38.1%	4.2034	0.80127
The organization is involved in coming up with new products and marketing them to the existing customers through process innovation.	0.0%	0.0%	16.9%	23.8%	59.3%	4.4237	.76691
The organization is involved in coming up with new process innovation strategies and use them in new marketing new markets.	0.0%	28.0%	30.5%	18.6%	22.9%	3.3644	1.12216
The organization is involved in implementation of other new process innovation strategies	0.0%	0.0%	29.7%	47.4%	22.9%	3.9322	0.72476
Strategic process innovation enhances performance	0.0%	10.2%	16.9%	52.5%	20.4%	3.8305	0.87026

#### 4.1 Competitive Advantage Commercial Banks in Uasin Gishu County Kenya

The results of the descriptive statistics of Competitive7 Advantage7 Commercial Banks in Uasin Gishu County Kenya are presented in Table 4.2. According to the results, 86.4% of the respondents either agreed or strongly agreed that to maintain a competitive edge, businesses must constantly improve their processes in order to achieve their goals, whether those goals are financial, social, or environmental. This statement had a mean of 4.3390 indicating a very high level of affirmation by the respondents. Additionally, 70.3% of the respondents strongly agreed that a company has an edge in the market when it is able to keep its consumers happy while simultaneously increasing productivity and cutting down on most of its expenses. This is an indicator that most of the respondents agreed with this statement, a fact that was reinforced by the high mean score of 4.1702.

Further, 77.2% of the respondents either agreed or strongly agreed that the organisation has been able to improve its profitability over years. This statement had a mean score of 4.2081 indicating that the majority of respondents affirmed it. The results also showed that 87.3% of the respondents either agreed or strongly agreed there has been a decrease in cost relative to the organisation revenue. This indicating a strong affirmation of the statement and was supported by the high mean score 4.3190. 55.1% of the respondents either agreed or strongly agreed, while 22.9% were neutral towards the statement that the firm's competitiveness has increased over the years. This statement had a mean of 3.6017 indicating a moderate level of agreement. The standard deviations of all the statements ranged between 0.58792 and 1.36639 indicating that there was minimal variation between each response and the average response.

Table 4.2: Descriptive Statistics of Competitive7 Advantage7 Commercial Banks

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
To maintain a competitive edge, businesses must constantly improve their processes in order to achieve their goals, whether those goals are financial, social, or environmental.	13.6%	0.0%	0.0%	11.9%	74.5%	4.3390	1.36639
A company has an edge in the market when it is able to keep its consumers happy while simultaneously increasing productivity and cutting down on most of its expenses.	0.0%	29.7%	0.0%	0.0%	70.3%	4.1702	1.37613
The organisation has been able to improve its profitability over years.	0.0%	5.9%	16.9%	47.5%	29.7%	4.2081	.84222
There has been a decrease in cost relative to the organisation revenue.	0.0%	0.0%	12.7%	40.7%	46.6%	4.3190	.69455
The firms competitiveness has increased over the years	11.0%	11.0%	22.9%	16.9%	38.2%	3.6017	1.37834

## 4.2 Inferential Statistics

### 4.2.1 Pearson Correlation Coefficient Analysis

According to Benesty, Chen, Huang and Cohen (2009), Pearson correlation coefficient refers to the extent to which two or more variables have a linear association. The Pearson correlation coefficients of this study are illustrated in Table 4.3. According to the results, the independent variables, strategic process innovation, s had positive correlations of  $r = 0.791$ , with the dependent variable competitive7 advantage7commercial banks in Uasin Gishu County Kenya. Thus, a change in strategic process innovation by one unit will lead to a corresponding change of 0.791 in competitive7advantage7commercial banks in Uasin Gishu County Kenya.

Further, an assessment of the p-values showed that the independent variabl had p-values that were below 0.05 indicating that there a statistically significant relationship between independent and the dependent variable. This affirmed that in instances where there are confidence intervals of 95%, p-values are supposed to be below 0.05 so that the observed differences between groups are not likely to be down to chance and, as such, statistically significant.

Table 4.3: Pearson Correlation Coefficients

		Strategic process innovation	Competitive advantage of commercial banks
Strategic process innovation	Pearson Correlation	1	
	Sig. (2-tailed)		
Competitive advantage of commercial banks	N	70	
	Pearson Correlation	.791*	1
	Sig. (2-tailed)	.039	
	N	70	70

### 4.2.2 Multiple Regression Analysis

Regression is a statistical technique that deals with the determination of linkages between one or more independent variables and a dependent variable by fitting a line of best fit through a series of observations (Mooi & Startstedt, 2014).

The summary of the study's multiple regression model is presented in Table 4.4. These results show that the R Square value for all the variables was 0.714 indicating that the model explained 71.4% of any changes in the dependent variable, competitive7 advantage7commercial banks in Uasin Gishu County Kenya whenever there is a one percent change in the independent variable. This means that the model managed to reach the 0.7 threshold for significance of the R Square value as recommended by Hamilton, Ghert and Simpson (2015). This demonstrates a fairly strong goodness-of-fit of the regression model.

**Table 4.1: Regression Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.848 <sup>a</sup>	.714	.682	.32978

a. Predictors: (Constant), Strategic Process Innovation

#### 4.2.3 Analysis of Variance

Sawyer (2009) affirmed that the Analysis of Variance (ANOVA) is a statistical procedure that attempts to find out existing differences between experimental group means in situations where there are one or more independent variables and a dependent variable. The results of the ANOVA of the study are presented in Table 4.5. The results indicate that the ANOVA F-test score, calculated value  $F_{cal}$  at 5% level of significance is equivalent to 27.836, which is greater than the F critical value ( $F_{crit}$ ) of 2.45 indicating that there is a significant relationship between the independent variable and the dependent variable of competitive advantage commercial banks in Uasin Gishu County Kenya. The p-value of 0.000 is less than 0.05 indicating that there is a statistically significant relationship between each of the independent variables and competitive7 advantage7commercial banks in Uasin Gishu County Kenya in accordance with the recommendations of Kao and Green (2008). This demonstrates the goodness of fit of the model.

**Table 4.5: Analysis of Variance**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	13.804	1	2.907	27.836	.000 <sup>b</sup>
	Residual	22.289	69	.107		
1	Total	35.093	70			

a. Dependent Variable: Competitive7 Advantage7commercial Banks in Uasin Gishu County Kenya

b. Predictors: (Constant), Strategic Process Innovation,

#### 4.2.4 Beta Coefficient Analysis

Beta Coefficients as unknown constants that are projected from the data which are connected to particular independent variables (Peterson & Brown, 2005). These coefficients enable the measurement of the size of change in an independent variable and the manner in which this affects the dependent variable when the rest of the independent variables are held constant. The results of the Beta Coefficients of the study variables are shown in Table 4.6. The values of the constants and coefficients enabled the generation of the following multiple regression model:

$$\begin{aligned}
 Y &= \beta_0 + \beta_1 X_1 + \varepsilon \\
 &= 5.120 + 0.137 X_2 + 0.582
 \end{aligned}$$

Where, Y refers to the dependent variable (competitive7 advantage7commercial banks in Uasin Gishu County Kenya),  $X_1$  refers to the strategic process innovation variable.

According to the equation, taking all the independent variables to be zero, competitive7 advantage7commercial banks in Uasin Gishu County Kenya will be a constant equivalent to 5.120. A review of the findings also shows that a unit increase in strategic process innovation will lead to a 0.137 increase in competitive7 advantage7commercial banks in Uasin Gishu County Kenya when all other independent variables are held constant. Lastly, the p-values for all the variables are all below 0.05, which indicates that they are all statistically significant.

Table 4.6: Beta Coefficients

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
(Constant)	5.120	.593		3.211	.000
1 Strategic process innovation	.137	.053	.197	2.112	.037

a. Dependent Variable: competitive advantage commercial banks in Uasin Gishu County Kenya

## 5. CONCLUSION AND RECOMMENDATION

The findings on effect of strategic process innovation on competitive advantage commercial banks in Uasin Gishu county Kenya are showed that effective management of processes facilitate coordination of operations and this may allow an organization to achieve superior competitive edge. The findings also revealed that process innovation can slow down competitors by giving the company advantages from the manufacturing context, such as cost efficiency, production speed, and quality consistency and that the organization is involved in coming up with new products and marketing them to the existing customers through process innovation. The findings implied that the organization is involved in coming up with new process innovation strategies and use them in new marketing new markets and that the organization is involved in implementation of other new process innovation strategies. The findings revealed that strategic process innovation enhances performance.

In conclusion basing on the study findings, the study came up with the following conclusions; a unit increase in strategic process innovation will lead to a 0.137 increase in competitive advantage commercial banks in Uasin Gishu County Kenya when all other independent variables are held constant. Lastly, the p-values for all the variables are all below 0.05, which indicates that they are all statistically significant. The study recommended the following; the commercial banks should be involved in coming up with new process innovation strategies and use them in new marketing new markets and implementing of other new process innovation strategies.

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