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Abstract

The study sought to determine the effect of product innovation strategies, market innovation strategies, technological innovation strategies and process innovation strategies on organizational performance of tier-one banks in Kenya. The study is anchored on the following theories; Diffusion Theory, Institutional Theory and Goal Setting Theory. This study adopts a descriptive research design with a target population of 1400 respondents at the tier-one bank headquarters. Stratified proportion sampling was involved in order to get a suitable unit of representative of analysis that was 140 respondents. This research study used a questionnaire as the main data collection tool. The inferential results on the effect of product innovation strategies on organization performance show $R = 0.632$ indicating a strong positive correlation and $R^2 = 0.399$ and there was a significant effect between product innovation strategies and organization performance ($t = 8.668$, $p < 0.05$). The inferential results on the effect of market innovation strategies on organization performance show $R = 0.575$ indicating a strong positive correlation and $R^2 = 0.331$ and there was a significant effect between market innovation strategies and organization performance ($t = 7.480$, $p < 0.05$). The inferential results on the effect of technological innovation strategies on organization performance show $R = 0.557$ indicating a strong positive correlation and $R^2 = 0.310$ and there was a significant effect between technological innovation strategies and organization performance ($t = 7.121$, $p < 0.05$). The inferential results on the effect of process innovation strategies on organization performance show $R = 0.441$ indicating a strong positive correlation and $R^2 = 0.194$ and there was a significant effect between process innovation strategies and organization performance ($t = 5.216$, $p < 0.05$). The study further established that among the business innovation strategies included in the study, product innovation strategy had the most influence on performance of tier-one banks in Kenya. The study affirmed that market innovation strategy also had a significant effect on performance. The study further confirmed that among the business innovation strategies, that process innovation had the least impact on performance of tier -one banks in Kenya. The study recommends that tier-one banks in Kenya should continuously engage in product innovation to enhance the competitive advantage it possesses against other players in the banking sector. This can be achieved by conducting market research among banking clients and to identify products that they can

introduce into their product list that will not only attract new clients but as well as retain the old clients.

Keywords: *Product Innovation Strategies, Market Innovation Strategies, Technological Innovation Strategies, Process Innovation Strategies, Organizational Performance, Tier-One Banks*

1.1 Background of Study

The environment that an organisation operates in is not only dynamic and tumultuous but also constantly changing, sometimes at a mind-boggling pace. Turmoil connected with changing customer behaviour, globalisation, investor demands, deregulation of markets and increased competition are some of the market characteristics. There is a need for an organisation to move beyond solving the existing problems and improve changing conditions that it faces that the changing business environment continuously brings about. However, the environment poses challenges that cannot be easily resolved, due to their complexities. This has made organisations to develop and adopt strategic approaches in order to deal with changing needs (Bragg, 2015). Business innovation is the fundamental instrument of growth and entry into new markets, which increase the existing market share and gives organisations a competitive edge. Therefore, inventions are crucial elements of organisational strategies for various reasons like applying processes that are more productive, to improve the market, to look for positive image in the perception of the customer and hence to increase justifiable competitive advantage (Fouad, Tourabi, & Lakhanati, 2018).

Introduction of new and better products determines the future of organisations these days. Innovation can be seen to be successful introduction of specific, different and useful things. It typically exists in the stage of creative notions but is not similar. Innovation entails acting on the creative ideas to make particular and considerable differences in the scope in which innovation has been implemented. Therefore, business innovation is the implementation of new thoughts to the products, processes, management practices and marketing, or any other features of the organisation's activities that lead to better value (Cascio, 2014). Business innovation strategy describes the work of innovation and invention and gives the direction for their implementation. However, the role of innovation in assisting corporations attain their growth objectives is often not clear and the revenue development from innovation is not sufficient, except when managed with great precision. While there are many theories and articles on innovation strategies, many organisations fail to grow and implement an innovation strategy that is in line with market trends. The term strategy infers something having a potential and huge effect on the firm (Darawong, 2018).

1.1.1 Organizational Performance

Subjective measure of how well an institution can use assets from its business model to generate revenues is referred to as organizational performance and it is a general measure of overall financial capacity over a given period of time and it can also be used to compare similar organisations across the same sector such as banking, communication and insurance among others (Al-Tamini, 2014). Organizational performance can be measured in different ways and the unit of measurement used should be taken in aggregation. Items that are used for measurement include revenue from operations, operating income, total unit sales, profitability, debt repayment capacity, liquidity, solvency and financial efficiency of the institution. Internal and external forces affect organizational performance. The external forces

that influence performance include competition, technology and working environment while the internal forces are ability, motivation levels, skills and knowledge. Therefore, it is important to understand that internal forces as well as external forces affect performance of commercial banks in general (Sufian & Chong, 2016). Cascio (2014) defines performance as the degree of attaining an organisation's mission as measurement in terms of job outcome, customer link, quality service and intangible outcomes. Borman and Schmit (2015) describe performance as a multidimensional paradigm, which measurement of several factors is based upon. Performance ensures that an organisation is competitive in the market. Employee's ability to establish effectiveness of organizational performance is crucial for organizational survival. Employees who are motivated and possess the right knowledge and sufficient skills will remain relevant in the organisation hence increased output (Bichanga, 2014).

1.1.3 Product Innovation Strategies

Product innovation is referred to as process, product and firm changes that have not originated from discoveries but arise from a combination of existing applications and technologies in modern contexts (Dearing & Cox, 2018). Zhou and Wu (2017) have stressed that product innovation is critical to enable firms to adapt to turbulent environments and achieve a sustainable competitive edge. They further noted that whereas firms need a continuous innovation process to respond to the ever-fast changing environmental conditions, the goal of sustainability requires new ways of doing business. Leeuwen, Polder and Raymond (2016) describe innovation as the introduction of new products and services that brings about important improvements in the existing services or products. In innovation, the product should either be significantly improved features of a product or new product, its user-friendliness, intended use, material and component. There are several dimensions of product innovation.

Leeuwen, Polder and Raymond (2016) argued that organisations introduce product innovation to meet their customer needs. Therefore, product innovation is seen as one of the key determinants that lead to the success of a firm. Product innovation and development is a significant strategy for enhancing the performance and market share of the business. Product innovation cushions a business from market threats and its competitors. Most organisations take up product innovation to compete with rivals in the market or industry.

Studies have shown that product innovation is associated with financial gain and growth in revenue. It is a strategy that organisations use to inject new lease of life into a product and address consumers' problem in a different approach that suits the organisation and the customer. External and internal factors both lead to the development of innovative products designed for special niches and specific needs. The internal factors can relate to monitoring and evaluation of existing products, in-house development of new products and feedbacks from consumers and employees (Lui, Wai, Ngugi & Takeda, 2017).

1.1.4 Market Innovation Strategies

According to Ul Hassan, Shaukat, Nawaz and Naz (2013), market innovation as adopting a new approach of marketing, which includes major changes in the product, pricing, packaging, design, placement or promotion strategy. The rationale for market innovation is to grow the sales, market share and opening up of the markets. The peculiar difference between marketing innovation and other innovation strategies is that it is adopting a new marketing innovation that the organisation has never used before. The OECD (2017) defines market innovation as

the implementation of new marketing method involving significant changes in packaging, product promotion, design and placement. In the 2005 Oslo manual, there was an important change to the definition of innovation. Before, technological process and product innovations were defined as the two kinds of innovations. The other two that is, organisational and marketing innovations were included at the same level as technological innovation (OECD, 2017). The most important responsibility of marketing professionals is to have such insights into the market dynamics to changing consumer needs and expectations. Often this responsibility is observed to mean solely in identifying of likely and present future geographical market opportunities.

Geographically, is that there is a simple approach for segmenting markets. A range of criteria exist including objectives criterion and segmenting based on interpretations of lifestyle of business and consumer buying trends as well as behaviour. The market innovation process is defined as planned changes in marketing activities to communicate and/or deliver services and products that provide value to customers (Varadarajan, 2015). It is looked upon as a powerful tool in gaining sustainable competitive advantage by combining inimitable certain marketing factors that provide both profit and value (Ren, Xie, & Krabbendam, 2016). The main objective of firms adopting innovation is the realisation of basic entrepreneurial values such as growth and revenue. In this sense, the aim of marketing innovation specifically on organisation customer value and performance has been acknowledged in the literature (Blazevic & Lievens, 2014). Marketing innovation stresses design changes and extensions, low-risk product modifications that provide quick innovative solutions and is therefore considered as an attractive approach to boost sales. Marketing innovation is also incremental and focuses on improvements in product placement, pricing or promotion, packaging and design (Nadoo, 2016).

1.1.5 Technological Innovation Strategies

Technological innovation strategies organisations adopt help them in the identification of new revenue opportunities and improved satisfaction of the customers through reliable delivery. The success of most businesses depends on the operational efficiency, which is a result of technology investments. Technological innovations involve adoption of systems or information systems such as ERP that provide capabilities that support and enhance the production process. The system promotes the improvements of organisational activities by automation of the process involved in the production of goods and services (Therrien, Doloreux, & Chamberlin, 2015). There is a need for an organisation to have four types of abilities for sustenance of technological innovation namely flexibility, Innovation processes, product development and superior manufacturing capability.

The success of technological innovation is not about technological capabilities of the organisation but other crucial abilities in the organisation, resource allocation, strategic planning, manufacturing and marketing. An investigation into whether or not all new products are successful while others have failed in the market has been related with prudent launching practices. These probes have isolated an array of success drivers such as development of a different product with a persuasive value intention, creating product/service base on the customer input, assuming front-end approach homework, initial product definition, seeking sharp, provision of sufficient resources and developing a team which dependable, efficient and cross-functional (Taleget, 2014).

1.1.6 Process Innovation Strategies

Wong (2014) defines process innovation as a way to improve or add new organisation processes, which are introduced via new equipment, materials or through the re-engineering of the operational processes. Process innovations target consumers in the organisation who are normally involved with new processes and usually include a second order effect on new product performance when compared to product development and research. Bauer and Leker (2016) defined process innovation as the bringing of new methods or changing the arranging processes, which direct efforts, procedures or work structures in firms as well as changes in individual and group behaviour roles. Technological innovations are being introduced within services as process innovations. Process innovation is the adoption of significantly improving production method and delivery process, among others. Process innovation is meant to reduce the unit cost in production and delivery significantly improved product and increase quality and innovation processes focuses on improving the efficiencies and effectiveness of production and also improve or change the way firms perform (Gudday, Ulusoy, Kilic, & Alpan, 2015).

Process innovation measurement is done through customer satisfaction surveys focusing on such elements as after-sales service, delivery time, quality and assistance given to customers. Operational effectiveness and efficiency are also a result of process innovation. The outcomes of process innovation that enable organisations to launch new technology and products with more value and cost effective to meet consumer needs, which are less expensive, reliable and quality products are sales growth, market ranking and image improvement (Noorahi, 2014). Process innovation in achieving economies of scale does not present any economic impact as it only brings changes to the whole operations of delivering services, producing products, distribution and manufacturing with efficiency (Johannessen, Olsen, & Lumpkin, 2014).

1.2 Problem Statement

Past studies have documented the relationship between business innovation and performance in selected industries across the globe. Banks face a myriad of problems that are as a result of changing business dynamics such as poor corporate governance, inadequate legislative and regulatory framework, negative public perception and competition from other financial institutions. Business innovation strategies can be proven by the number of new products released in the market every time, improvement of existing products, improved marketing strategies and also improved management tactics employed. The motive behind these numerous innovation activities is to improve firm performance in various aspects like increase of profits, increase market share, and reduce production cost. Business innovation is evident in nearly all organisations and banking sector is not an exception. Banks are under considerable pressure to deliver positive results to investors and shareholders and business innovation strategies are viewed as a strategic function working to improve the institution's profitability.

Banking sector in Kenya is constantly affected by changes in the external environment that include government regulations, trading blocs, increasing cost of inputs, increased competition and improved customer awareness. A report by Cytonn Investment (2017) shows that loan deposit ratio has declined to 77.9 % from 81.1% in 2016, with banking institutions adopting more prudent credit risk assessment framework to ensure quality loan books as

banks channel more funds towards government securities with an expected growth of 14%. In 2017, bank earnings dropped by 13.3% compared to 2016, this was attributed to the capping of the interest rate through a law that was enacted in 2016 with the full effects shown in Organizational Performance of banks in 2017. Non-performing loans increased to 11.5 from 10.1 in 2016 and the banks expect levels to increase as they adopt an International Accounting Standard IFRS 9 that requires a forward looking approach to estimate credit losses (Cytton Investment, 2017).

Most innovation and performance studies seem to be in telecommunication industry such as the research Njoronge, Muathe, and Bula (2016) conducted on the influence of technology on performance on the mobile sector in Kenya. The study found out that there is a need for mobile telephony firms to invest more in new technologies to address the changes that are required to improve performance. Abdi and Ali (2013) carried out a study on innovation and business performance in the telecommunications industry in Africa with reference to Somalia. Oluseye, Ibidunni, and Adetowubo-King (2014) found out that innovation strategies had a positive effect on creating new markets and expanding market share. Despite the numerous studies on innovation, the researcher needs to determine if business innovation strategies affect the performance of tier-one banks as it does in telecommunications sector. This study, therefore, sought to establish the business innovation strategies and organizational performance in the banking sector a comparative study of tier-one banks in Kenya.

1.3 Objective

The main objective of the study was to establish the business innovation strategies and organizational performance in the banking sector, a comparative study of tier-one banks in Kenya. (Equity, KCB, Cooperative Bank, Barclays Bank, Standard Chartered, Commercial Bank of Africa, Stanbic Bank and Diamond Trust Bank).

1.3.1 Specific Objectives

- a) To determine the effect of product innovation strategies and organizational performance of tier one banks in Kenya
- b) To establish the effect of market innovation strategies and organizational performance of tier one banks in Kenya
- c) To ascertain the effect of technological innovation strategies and organizational performance of tier one banks in Kenya
- d) To discern the effect of process innovation strategies and organizational performance of tier-one banks in Kenya

2.1 Theoretical Literature Review

2.1.1 Diffusion of Innovation Theory

This theory is also called the Diffusion of Innovations that Everett Rogers came up with in 1955. The theory is concerned with the spread of innovation, concepts of invention as well as technology through culture. According to Diffusion Theory, humans have qualities that make them adopt or reject innovations. Diffusion Theory indicates that there are five stages of adopting an innovation. The beginning stage is when an individual knows of innovation but has no knowledge about it. The second phase is persuasion where an individual is interested in establishing knowledge about the innovation, while the third stage is decision-making where an individual compares the merits and demerits of an innovation and makes a decision

to adopt it or not. After the decision is made, the execution, in which the person really adopt and use it. Confirmation is the final phase. Here the person makes a final decision on whether to continue using the innovation based on experience (Dearing & Cox, 2018).

These stages apply in varying extent to individuals, groups and in addition to other persons. The study adopted this theory because simplicity of use is always a major factor that affects adoption of innovations, which it supports. Human beings naturally are hesitant to adopt innovation no matter how good and effective it can be. The important aspect of innovation is that when a person appreciates and realises its goodness one finds it difficult to work without it and this is the most significant characteristic of diffusion theory (Dearing, 2009). This theory is concerned with the extent to which business innovations are being developed, it explains that some people adopt an innovation instantly while others take time and will continue to use old technology. The rate of adoption is dependent on various issues. In most organisations people tend to give an innovation poor appraisal while others are likely to reject it.

2.1.2 Institutional Theory

Goguen and Burstall established this theory in 1984. Institutional Theory puts more emphasis on the organisation's environment as an important factor in shaping its structure and actions. Change in business environment could force an organisation to innovate or come up with a new strategy to adopt even if it did not wish to. For example, Standard Chartered Bank in July 2019 announced plans to launch mobile-based loans after earlier shunning the product. The theory states that organisational decisions are not purely driven by rational goals of efficiency but by cultural and social factors and apprehensions for acceptability. Organisations are elated by structures, routines, cultures and operate at several levels. According to institutional theory, organisations become similar due to isomorphic pressure and pressure for sincerity (Braton & Ahlstrom, 2015).

Institutional theory puts more emphasis on social behaviour, which considers an organisation's process by which configurations, schematics, guidelines, customs and procedures that are conventional as commanding strategies. According to the theory, organisational strategies are influenced by other external factors that include political, social and economic pressure as well as decision-making within the firm that seeks to legitimise its practices to other stakeholders. The study adopted this theory because it explains the changes brought about in an organisation by social values, regulations that affect decision and technological advancements. Institution Theory has put emphasis on the organisation's environment, which is important in shaping its structure and actions. The theory states that organisational decisions are not purely driven by rational goals of efficiency but by cultural and social factors and apprehensions for acceptability. Organisations are elated by structures, routines, cultures and operate at several levels (Bjorck, 2014). The study adopted this theory because it explains the changes brought about in organisation by social values, regulations that affect decision and technological advancements.

2.1.3 Goal-Setting Theory

This theory began with early works on levels of aspiration developed by Kurt Lewin and has been developed since then by Dr. Edwin Locke who began researching on the theory in the 1960s (Locke & Latham, 2010). A goal is the aim of an action or task that a person consciously desires to achieve or obtain. Goal-setting involves the conscious process of establishing levels of performance in order to obtain desirable outcomes (Latham, 2010). This

goal-setting theory simply states that the source of motivation is the desire and intention to reach a goal. If individuals or teams find that their current performance is not achieving desired goals, they typically become motivated to increase effort or change their strategy (Locke & Latham, 2010). The postulation of goal-setting theory is that their aim is to supervise human action. Studies specify exact aims lead to increased individual performance, according to Locke and Latham (2010). When an individual is in pursuit of certain targets, they don't seem satisfied until the goal is achieved (Locke & Latham, 2010).

Goals serve as reference opinion that distinguishes satisfaction and dissatisfaction. As well as employee who produces the toughest goal line are hard to fulfil within a given time frame in the organisation. When goal-setting is applied to individual performance, this implies that an individual's ambitions have a responsibility to ensure that deficiency needs are met. That is, proper wages and safe environment, creating proper climate in which one can develop their full capabilities (Ferris, 2007). According to Ferris (2007), goal-setting is a set of decision theories of work motivation and performance. Perception plays a vital role in this theory because it emphasises cognitive ability to anticipate the likely consequences that result from behavioural action (Kinicki, 2013). Goal-setting theory has two major assumptions, that is, individuals have a perception about the concerns that result from their interactive engagements and causal relations among the outcomes and second assumption is individuals have effective reactions to certain outcomes that are both positive and negative value (Amit & Livnat, 2008).

According to this theory, individuals are motivated to perform by two expectations. Goal-setting is the probability that the effort will always lead to desired performance and second goal-setting is that particular performance will lead to preferred outcomes. While some efforts will not be rewarded, the employee will not be motivated to perform a specific task. Goal-setting theory relies upon motivators to clarify the causes of behaviour at a workstation, and external rewards are viewed as motivators that fuel behaviour as opposed to intrinsic motivators when behaviour is driven from internal forces (Ferris, 2007). In relation to the study, there is a need for assurance, obligation and maturity. Managing an organisation by objectives becomes the process in which financial institution's objectives are agreed upon, this way personnel know the expectation and hence they are able to set their own individual goals.

2.2 Empirical Literature Review

2.2.1 Product Innovation and Organisational Performance

Sattayaraksa and Boon-itt, (2018) examined the roles of the chief executive officer (CEO), transformational leadership and organisational factors on product innovation performance. The main aim of the study was to examine the indirect and direct effects of CEO transformational leadership on product innovation performance and mechanism to understand the process in which transformative CEOs exert their influence in product innovation. The study adopted a quantitative research design and data was gathered from 269 manufacturing organisations in Thailand. The questionnaire was emailed to the target population. The study applied a two-step structural equation modelling process. The study findings showed that CEO transformational leadership, indirectly affects product innovation through organisational learning, new product development process and innovation culture. The study also shows that CEO transformational leadership has a positive and strong effect on innovation culture and

organisational learning that are strongly associated with new product development process, which significantly influences product innovation performance. By integrating leadership knowledge and operations management fields, the study outlines the understanding of how organisational leadership influences the product development process and the product innovation outcome. Practical implication of the study findings is that to be a more effective CEO, leaders focusing on product innovation should develop behaviour and skills of transformational leadership that fosters organisational learning and innovation culture, which in turn will influences product innovation performance (Sattayaraksa & Boon-itt, 2018).

Darawong (2018) examined the dynamic capabilities of new product development teams in performing radical innovation projects. The study examined the impact of dynamic capabilities of new product development in relation to efficiency and effectiveness. Research data was collected from members of new product development teams in large manufacturing firms that comprised automotive, electronics and electric products. The study established that new product development teams with learning, sensing and integrating capabilities can increase project effectiveness and enhance project efficiency. The results indicate that new product development team with sensing, learning and integrating capabilities can increase project effectiveness. In addition, teams with high learning, integrating and coordinating capabilities will enhance project efficiency. The study implications for product effectiveness is that an organisation should consider investing in ICT that provide a wide range of products and organisational leadership can establish opportunities for team members that are both informal and formal during new product development (Darawong, 2018).

Fouad, Tourabi, and Lakhanati, (2018) investigated the innovation process impact on the new product performance in Morocco fish industry. The organisation strives to establish a modernised value chain that supports product innovation in its performance generation. The underlying objective of the study was to measure the impact of value chain on the performance of new product, taking into account the initial stages of development. Data was collected in a dichotomous quality form for the structure of the innovation process that included sequential and parallelism steps. The study established that there is a significant and positive relationship between partially and parallel structure and the internal improvement objectives of the new prototype. The theoretical implication of the study was that for product development process to succeed, it must be able to measure the resulting performance while the empirical implications of the study shows that accelerating the execution of innovation activity is enormously favoured to increase the performance of the innovative product over the medium term. This enables an organisation to be efficient in terms of market entry with good quality of new product (Fouad, Tourabi, & Lakhanati, 2018).

2.2.2 Market Innovation and Organizational Performance

Remirez, Parrra-Requena, Ruiz-Ortega, and Pedro, (2018) conducted a study to investigate external information and marketing innovation with reference to the mediating role of product and organisational innovation. The specific aim of the study was to analyse the mediating role of product innovation and organisational innovation in the relationship between external information and marketing innovation. The data used in the study was collected from 994 manufacturing firms and was analysed using partial least squares structural equation modelling. The study results show that external information obtained about relationships with customers, competitors and suppliers leads to market innovation. The findings demonstrated

that mediating effects of product innovation and organisational innovation in relation to external information and marketing innovation. The practical implications of the study are that organisations should utilise external information flows to innovate in both their products and organisation as requirement to market innovation. The study finding provides linkages between perspectives of network, innovation and marketing to a better understanding of the background of marketing innovation dimensions (Remirez, Parrra-Requena, Ruiz-Ortega, & Pedro, 2018).

Jose, Cabanelas, Lampon, and Tania, (2018) examined the impact on competitiveness of customer value creation through relationship capabilities and marketing innovation. The research's main aim to identify customer needs through relationship management and their transformation into marketing innovation. The purpose of the study was also to analyse the link between managerial relation capacity and market innovation in customer value creation and to determine how that value creation affects competitiveness. The study analysed data from 450 SMEs in Guadalajara, Mexico. The study adopted structural equation model that analysed the impact of management capabilities in relationship to market innovation on customer value creation in determination of competitiveness. The study results indicate those management capabilities in customer relationship and the method of converting customer needs knowledge into specific choices in the market have an impact on customer value creation, that positively influence Organizational Performance, use of technology and cost optimisation that are used to gauge organisational competitiveness (Jose, Cabanelas, Lampon, & Tania, 2018).

Lui, Wai, Ngugi, and Takeda, (2017) conducted a study to establish proactive entrepreneurial behaviour, market orientation and innovation outcome a case study of SMEs manufacturing firms in the United Kingdom. The study adopted resource-based theory to analyse proactive entrepreneurial behaviour to achieve new product development performance. The study surveyed 401 SMEs in the manufacturing sector and the findings indicate that there is an upward curvilinear relationship between proactive entrepreneurial behaviour and new product performance and SMEs market innovation capability that translate to new product performance. The study also established that upward curvilinear relationship between proactive entrepreneurial behaviour and innovation capability flips to a downward curvilinear relationship when organisations pursue a customer and competitor orientation (Lui, Wai, Ngugi, & Takeda, 2017).

2.2.3 Technological Innovation and Organisational Performance

Sawng, Park, Jo, and Park (2018) examined technology adoption and company performance a correlation analysis with evidence of Korean export companies. The study purpose was to examine the useful implications for Korean export companies adopting smart technology for the improvement of their performance in the era of industrial convergence. The researchers adopted five-stage procedure and methods. In the first stage, items were measured based on four performance factors (internal process, customer, finance and learning and growth) and in the second stage data was collected using surveys. In stage three, the study model was verified with structural equation modelling while in the fourth stage data was analysed using AHP and fifth stage post RFID was adapted to measure performance of the firms. The study established that the effects of technology on export companies performance was still unsatisfactory and Organizational Performance proved to be top priority area, the study also established that

strategic decision-making is required for adoption smart technology in the perspective of technology convergence to improve the performance of companies among heterogeneous firms. The practical implications of the study findings are in the global market, not only technology convergence in the same sector but also industrial convergence in different organisations is essential for service firms with a perspective of innovation (Sawng, Park, Jo, & Park, 2018).

Zhu, Wang, and Wang, (2018) conducted a comparative study of the effects of different factors on firm technological innovation performance in different high-tech organisations, the study examined six variables using semi-parametric models based on data of GEM listed firms between 2010-2015. The model used ensured that influencing factors of firm technological innovation performance are no longer restricted to a particular aspect but can provide a comprehensive comparative analysis of the factors. Study finding shows that research and development expenditure have positive impact on organisational technological innovation performance, investment and government subsidies have a significant and positive impact on an organisation's technological innovation performance in knowledge oriented industries. Technology diversity has a significant and positive impact on organisational innovation performance (Zhu, Wang, & Wang, 2018).

Milewski, Fernandes, and Mount (2015) explored technological process innovation from a lifecycle perspective. Technological process innovation is a distinctive organisational phenomenon that is characterised by an organisation's internal and underlying components such as mutual adaptation of modern technology and technological change. The main objective was to investigate modern technology and technological change in different stages of the innovation life cycle. The study adopted an exploratory case based research design and conducted a multiple case studies of five large successful manufacturing companies operating in different industries. Fifty-five semi structured interviews were used for data collection. The study adopted a cross case synthesis and replication logic to identify patterns of how companies address process innovation components at different stages. The study established that modern technology and technological change identify differences between development of core and non-core process and based on the findings the study describes asymmetric adaption as a theoretical construct and propose that organisation's seek different level of process standardisation that depends on the types of processes developed which affects to a great extent technological and organisational change (Milewski, Fernandes, & Mount, 2015).

Bichaga (2014) conducted a study to establish the methodologies adapted by small and medium-sized enterprises in Nairobi that have adopted technology innovation as business strategy. The study found out that SMEs in Nairobi use technology as strategy to a greater extent in marketing, communication and modes of payments as well as in global entrepreneurship.

2.2.4 Process Innovation and Organisational Performance

Schniederjans (2018) examined business process innovation on quality and supply chains and the main objective of the study was to assess the role of business process innovation on the relationship between supply chain performance and social quality management. The study further distinguished social quality management from soft quality management and refines the impact of level of business process innovation that is radical and incremental on the relationship. The research data was collected using a questionnaire that was distributed to manufacturing organisations in the United States. The study adopted hierarchical moderated

regression to examine the research hypothesis. The study finding shows that there is positive association between social quality management and supply chain performance. The results also confirmed a positive moderating relationship with incremental business innovation process between social quality management and supply chain performance. Radical process innovation was found to have negative moderating role on this relationship. The practical implication of the research study is that it distinguishes social quality management from soft quality management thus making it easier to determine which aspects of soft quality management will enhance supply chain performance and provides evidence of the differentiating models in which business process innovation moderates the relationship between social quality management and supply chain performance by identifying the positive and negative moderating roles of incremental and radical business process innovation (Schniederjans, 2018).

Nguyen and Harrison (2018) examine leveraging customer knowledge to enhance process innovation as a moderating effect from market dynamics. Studies show that organisations compete and win on the basis of their capabilities. The main objective of the study was to empirically test a conceptual framework to investigate the roles of customer leverage process innovation and the relationships to performance. The research data was obtained from 650 manufacturing organisations in different regions. From the knowledge-based view, the study established that customer leverage is a determinant of an organisation's process innovation and process innovation mediates the relationship between an organisation's performances based on transactional organisational cost economics. The findings further showed a strong association exists between organisational customer leverage and performance and it strengthens the positive impacts on process innovation (Nguyen & Harrison, 2018).

Huesig and Endres (2018) explored the digital innovation process the role of functionality for adoption of innovation management software by innovation managers. The research purpose was to explore the influencing factors on the adoption of specific software tools to support innovation management methods that is referred to innovation management software. The study used an online questionnaire that was distributed to 99 managers of a German industrial organisation in data collection. The study findings indicated that adoption of innovation management software has positively influenced the innovation management and that software tools offer support functionality for ideas and portfolio management but decreased for idea generation and scenario management. The study findings show that digitalisation of the innovation process through information technology tools is more finely nuanced than the more logic often promoted in the digital context and proposed in the study of innovation management software (Huesig & Endres, 2018).

2.6 Conceptual Framework

The research is guided by the theoretical structure. The conceptual framework presents and defines the philosophies that attempt to explain the research problem under study with a keen focus on the specific variables being sought in the study.

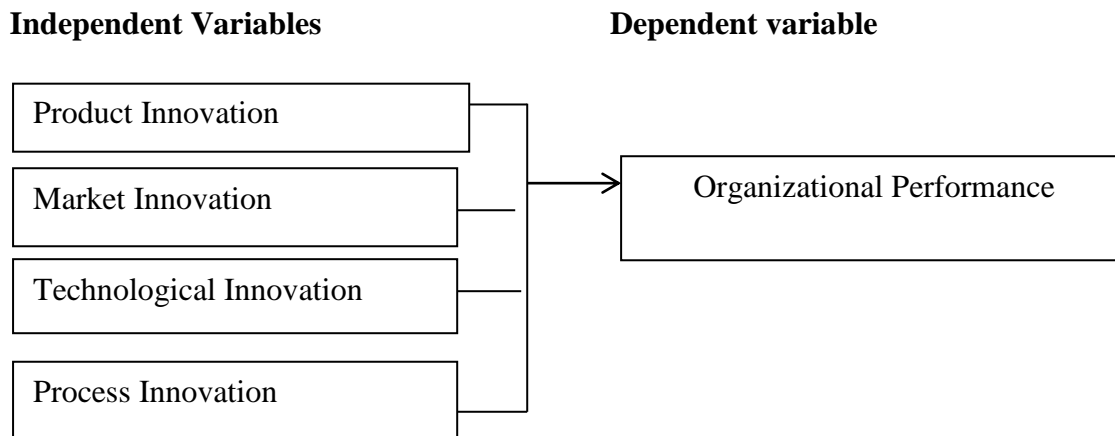


Figure 1: Conceptual framework

3.0 Research Methodology

The study employed descriptive research design. Senior managers, middle level managers and non-management at Equity (215), KCB (205), Cooperative Bank (230), Barclays Bank (185), Standard Chartered (165), Commercial Bank of Africa (155), Stanbic Bank (140) and Diamond Trust Bank (105) head offices in Nairobi were the study target population. Kombo and Tromp (2009) indicated that a sample size of 10% or 20% of the target population selected using stratified sampling is adequate to generalise the study findings. In this context, the researcher used the minimum which is 10% because of limited resources. Kothari (2009) observed that sample drawn randomly is unbiased in a way that no number of populations has any chance of being selected more than the other. This research study used questionnaire as the main data collection tool. Data gathered from correctly filled questionnaires was coded, tabulated and analysed using SPSS Version 24 by both descriptive statistics, which include mean and standard deviation, to capture the characteristics of the variables under study. Additionally, to test the significance of organisational factors on the uptake of venture capital, the study conducted inferential statistics. Since most organisational factors are constructs factor analysis was used to reduce the constructs into factors that were used in the regression mode. The data was presented using graphs and tables. The analysis of variance (ANOVA) was checked to reveal the overall model significance. A critical p value of 0.05 was used to determine whether the overall model was significant or not. A multiple linear regression model was used to test the significance of the influence of the independent variables on the dependent variable. To estimate model of composite index of uptake of venture capital measure, y a regression constant or intercept, β_1 to β_4 are the regression coefficient.

4.0 Findings

The researcher distributed the questionnaire to the sample population and a total of 115 respondents completely filled the questionnaire representing 82% of the target population. The research study response rate was excellent. The study asked the respondents to provide bio data that constituted information that explains attributes of the study that included gender, age group, education level, years in service, position held in organisation and the name of the organisation that the respondents worked for. Out of the 115 responses that were adopted for analysis, the majority of employees who participated in the research were 54% female and 46% male. The majority of them at 33% represented respondents aged between 31 and 35, 26% of the respondents indicated their ages were between 40 and 45, 21% of the respondents indicated they age between 26 and 30 while 10% respondents represented both employees aged between 18 and 25 as well as those aged 46 and above.

The majority had attained a bachelor's degree level of education at 51%, closely followed by respondents with post-graduate degree (master) at 35% while 9% of the respondents indicated diploma level of education, 5% had PhDs and none had indicated secondary level of education or primary. The majority indicated that they have worked in the organisation for between six and 10 years, 37% had worked for between one and five years while 10% had worked for between 11 and 15 years and 4% had worked for 16 years and above. Respondents were asked to indicate position held in the organisation. The study finding showed that 14% were senior managers, 30% were middle-level managers and 56%, who were the majority in the study, indicated that they were non-management. And finally, respondents were asked to indicate the tier-one bank they work for and the responses were as follows: 16% of the respondents worked for Equity Bank, 17% worked for Cooperative Bank, 17% worked for KCB, 13% worked for Barclays Bank, 10% worked for Standard Chartered, 11% worked for Commercial Bank of Africa, 10% worked for Stanbic Bank and 9% worked for Diamond Trust Bank. This shows that all tier-one banks were all represented and the study findings can be associated with all the tier-one banks in Kenya.

Table 1: Model Summary for Product Innovation

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.632 ^a	.399	.394		.60908

a. Predictors: (Constant), Product Innovation

The values of $F = 75.141$ show that product innovation strategies statistically and significantly affects organizational performance which means the regression model is a good fit of the data and that product innovation strategies significantly influences the performance of Tier One Banks in Kenya. The level of significance is 0.000 which is less than 0.05 hence the regression model significantly predicts the dependent variable. The results were enumerated as seen in Table 1

Table 2 ANOVA^a Results for Product Innovation

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	27.875	1	27.875	75.141	.000 ^b
Residual	41.920	113	.371		
Total	69.796	114			

a. Dependent Variable: Organization performance

b. Predictors: (Constant), Product Innovation

The study outcome indicated that addition of Product Innovative Strategies to Tier One Banks in Kenya has a significant positive impact on organizational performance. The results indicate that there is a significant relationship between Product Innovation Strategies and organizational performance; $p < 0.05$ ($P = 0.01$). Thus, the values of Product Innovation Strategies are statistically significant ($t = 8.668$, $p < .05$) which means an increase in mean index of Product Innovation Strategies should increase organizational performance by a positive unit mean index value of .688 (68.8 per cent). The regression model explaining the results enumerated in Table 2 is given by: *Organizational Performance = 1.095 + 0.688 (Product Innovation Strategies)*. The model shows that Product Innovation Strategies positively affects organizational performance at Tier One Banks in Kenya.

Table 3 Regression Coefficients^a for Product Innovation

Model	Unstandardized Coefficients	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B	
					Std. Error	Lower Bound
(Constant)	1.095		3.309	.001	.439	1.751
Product Innovation	.688	.632	8.668	.000	.531	.845

a. Dependent Variable: Organization performance
 Organizational Performance = 1.095 + .688 (Product Innovativeness)

The study sought to investigate the product innovation strategies and organizational performance. Regression analysis was done with organizational performance as the dependent variable and product innovation strategies as the predictor factor. The regression analysis revealed a relationship $R = 0.575$ which showed a strong positive correlation and revealed that market innovation and organizational performance are fundamentally related, and $R^2 = 0.331$ which meant that 33.1% of variation in organizational performance can be explained by a unit change in market innovation. The results were enumerated as seen in Table 4.

Table 4: Model Summary for Market Innovation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.575 ^a	.331	.325	.64274

a. Predictors: (Constant), Market Innovation

The values of $F = 55.950$ show that market innovation strategies statistically and significantly affect organizational performance which means the regression model is a good fit of the data and that market innovation strategies significantly influences the performance of Tier One Banks in Kenya. The level of significance is 0.000 which is less than 0.05 hence the regression model significantly predicts the dependent variable. The results were enumerated as seen in Table 5.

Table 5: ANOVA^a Results for Market Innovation

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	23.114	1	23.114	55.950	.000 ^b
Residual	46.682	113	.431		
Total	69.796	114			

a. Dependent Variable: Organization Performance

b. Predictors: (Constant), Market Innovation

The study outcome indicated that addition of Market Innovative Strategies to Tier One Banks in Kenya has a significant positive impact on organizational performance. The results indicate that there is a significant relationship between Market Innovation Strategies and organizational performance; $p < 0.05$ ($P = 0.01$). Thus, the values of Product Innovation Strategies are statistically significant ($t = 7.480$, $p < .05$) which means an increase in mean index of Market Innovation Strategies should increase organizational performance by a positive unit mean index value of .644 (64.4 per cent). The regression model explaining the results enumerated in Table 6 is given by: *Organizational Performance = 1.379 + 0.644 (Market Innovation Strategies)*. The model shows that Market Innovation Strategies positively affects organizational performance at tier one banks in Kenya.

Table 6: Regression Coefficients^a for Market Innovation

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error				Lower Bound	Upper Bound
(Constant)	1.379	.345		3.993	.000	.695	2.063
Market Innovation	.644	.086	.575	7.480	.000	.473	.814

a. Dependent Variable: Organization performance

Organizational Performance = 1.379 + .644 (Market Innovativeness)

The study sought to investigate the technological innovation strategies on organizational performance. Regression analysis was done with organizational performance as the dependent variable and technological innovation strategies as the predictor factor. The regression analysis revealed a relationship $R = 0.557$ which showed a strong positive correlation and revealed that technological innovation and organizational performance are fundamentally related, and $R^2 = 0.310$ which meant that 31% of the variation in organizational performance can be explained by a unit change in technological innovation. The results were enumerated as seen in Table 7.

Table 7: Model Summary for Technological Innovation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.557 ^a	.310	.304	.65296

a. Predictors: (Constant), Technological Innovation

The values of $F = 50.702$ show that technological innovation strategies statistically and significantly affect organizational performance which means the regression model is a good

fit of the data and that technological innovation strategies significantly influences the performance of Tier One Banks in Kenya. The level of significance is 0.000 which is less than 0.05 hence the regression model significantly predicts the dependent variable. The results were enumerated as seen in Table 8.

Table 8: ANOVA^a Results for Technological Innovation

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	21.617	1	21.617	50.702	.000 ^b
Residual	48.179	113	.371		
Total	69.796	114			

a. Dependent Variable: Organization performance

b. Predictors: (Constant), Technological Innovation

The study outcome indicated that addition of Technological Innovative Strategies to Tier One Banks in Kenya has a significant positive impact on organizational performance. The results indicate that there is a significant relationship between Technological Innovation Strategies and organizational performance; $p < 0.05$ ($P = 0.01$). Thus, the values of Product Innovation Strategies are statistically significant ($t = 7.121$, $p < .05$) which means an increase in mean index of Market Innovation Strategies should increase organizational performance by a positive unit mean index value of .688 (68.8 per cent). The regression model explaining the results enumerated in Table 9 is given by: *Organizational Performance* = $1.620 + 0.586$ (*Technological Innovation Strategies*). The model shows that Technological Innovation Strategies positively affects organizational performance at Tier One Banks in Kenya.

Table 9: Regression Coefficients^a for Technological Innovation

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error				Lower Bound	Upper Bound
(Constant)	1.620	.329		4.926	.000	.969	2.727
Technological Innovation	.586	.082	.557	7.121	.000	.423	.749

a. Dependent Variable: Organization Performance

Organizational Performance = $1.620 + .586$ (Technology Innovativeness)

The study sought to investigate the process innovation strategies on organizational performance. Regression analysis was done with organizational performance as the dependent variable and process innovation strategies as the predictor factor. The regression analysis revealed a relationship $R = 0.441$ which showed a strong positive correlation and revealed that process innovation and organizational performance are fundamentally related, and $R^2 = 0.194$ which meant that 19.4% of variation in organizational performance can be explained by a unit change in process innovation. The results were enumerated as seen in Table 10.

Table 10: Model Summary for Process Innovation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.441 ^a	.194	.187	.70554

a. Predictors: (Constant), Process Innovation

The values of $F = 27.210$ show that process innovation strategies statistically and significantly affects organizational performance which means the regression model is a good fit of the data and that process innovation strategies significantly influences the performance of Tier One Banks in Kenya. The level of significance is 0.000 which is less than 0.05 hence the regression model significantly predicts the dependent variable. The results were enumerated as seen in Table 11

Table 11: ANOVA^a Results for Process Innovation

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	13.545	1	13.545	27.210	.000 ^b
Residual	56.250	113	.498		
Total	69.796	114			

a. Dependent Variable: Organization performance

b. Predictors: (Constant), Process Innovation

The study outcome indicated that addition of Process Innovative Strategies to Tier One Banks in Kenya has a significant positive impact on organizational performance. The results indicate that there is a significant relationship between Process Innovation Strategies and organizational performance; $p < 0.05$ ($P = 0.01$). Thus, the values of Process Innovation Strategies are statistically significant ($t = 5.216$, $p < .05$) which means an increase in mean index of Process Innovation Strategies should increase organizational performance by a positive unit mean index value of .688 (68.8 per cent). The regression model explaining the results enumerated in Table 12 is given by: $Organizational\ Performance = 1.938 + 0.512$ (*Process Innovation Strategies*). The model shows that Process Innovation Strategies positively affects organizational performance at Tier One Banks in Kenya.

Table 12 Regression Coefficients^a for Process Innovation

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	1.938	.386		5.020	.000	1.173	2.702
Process Innovation	.512	.098	.441	5.216	.000	.318	.707

a. Dependent Variable: Organization Performance

Organizational Performance = $1.938 + .512$ (Process Innovativeness)

4.1 Overall Multivariate Analysis

The study applied regression with organizational performance as the dependent variable and business innovation strategies as the predictor factor. Data from 114 respondents was tested. The regression analysis shows an overall relationship of $R = 0.684$ and $R^2 = 0.468$ which meant that 46.8% of variation in organizational performance can be explained by a change in all the predictor factors. The results were enumerated as seen in Table 13.

Table 13: Model Summary Multivariate Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.684 ^a	.468	.449	.58089

a. Predictors: (Constant), Process Innovation, Market Innovation, Technological Innovation, Product Innovation

The values of $F = 24.210$ show that all the predictor factors statistically and significantly affect organizational performance which means the regression model is a good fit of the data and business innovation strategies significantly influences the performance of Tier One Banks in Kenya. The level of significance is 0.000 which is less than 0.05 hence the overall regression model significantly predicts the dependent variable. The results were enumerated as seen in Table 14.

Table 14: ANOVA^a Results for Model Summary

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	32.678	4	8.169	24.210	.000 ^b
1 Residual	37.118	110	.337		
Total	69.796	114			

a. Dependent Variable: Organization Performance

b. Predictors: (Constant), Process Innovation, Market Innovation, Technological Innovation, Product Innovation.

The study outcome indicated that the predictor variables have a significant positive impact on organizational performance at Tier One Banks in Kenya. The results indicate that there is a significant relationship between business innovation strategies and organizational performance; $p < 0.05$ ($P = 0.01$). Thus, the values of predictor variables are statistically significant with $p < .05$ which means an increase in mean index of predictor variables should increase organizational performance. The results were enumerated as seen in Table 15.

Table 15 Regression Coefficients^a for Multivariate Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.552	.367		1.504	.136
Product Innovation	.358	.118	.329	3.027	.003
Market Innovation	.307	.114	.274	2.697	.008
Technological Innovation	.246	.106	.233	2.323	.022
Process Innovation	-.071	.115	-.061	-.623	.535

a. Dependent Variable: Organization performance

Therefore, the optimal regression model for the study is: $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4$

Organizational Performance = .552 + .358 (Product Innovativeness) + .307 (Market Innovativeness) + .246 (Technology Innovativeness).

The model shows that Product Innovation Strategies were the predictor variable that highly affected organizational performance at tier one banks in Kenya, followed by Market Innovativeness and Technological Innovation Strategies. Process Innovation Strategies had the least effect on Organizational Performance.

5.0 Conclusion

The study reaffirmed that there is a positive and significant relationship between technology, product innovation and performance at tier-one banks in Kenya. The study, therefore, concludes that there is a positive and significant effect of product innovation strategy on performance of tier-one banks in Kenya. The study further concludes that among the business innovation strategies included in the study, product innovation strategy had the most influence on performance of the tier-one banks in Kenya. The study affirmed that market innovation strategy had a significant effect on performance. The study also concludes that there is a positive and significant effect of market innovation strategy on performance of tier-one banks in Kenya. The study concludes that market innovation strategy was the second most significant innovation strategy to affect performance of tier-one banks in Kenya. The study confirmed that there was significant influence of the process innovation strategy on performance in the industry. The researcher, therefore, concludes that process innovation strategy has significant effect on performance of tier-one banks in Kenya. The study further confirmed that among technology innovation, market innovation and product innovation, process innovation had the least impact on performance of tier-one banks in Kenya.

6.0 Recommendation

The study recommends that tier-one banks in Kenya should continuously engage in product innovation to enhance the competitive advantage they possess against other players in the banking sector. This can be achieved by conducting market research among bank clients and to identify products that they can introduce into their catalogue that will not only attract new clients but also retain the old customers.

The study recommends that to increase the number of customers and for business to grow further they should invest more in consumers. Tier-one banks in Kenya should embrace

market innovation strategies by taking advantage of the numerous communication technologies and mediums to reach a larger audience.

The study recommends that the lenders should consistently analyse and evaluate their services in an effort to enhance operations efficiency. This can be achieved by keeping up with best practices in the world and integrating these processes in their operations to maintain their competitive advantage.

Tier-one banks in Kenya require the latest technology both software and hardware that should be adopted in most of their operations and link different departments for effective operationalization of organisation activities. Considering that other firms are in the rush to acquire technology, which helps to reduce workload and promote efficiency. Adequate funds should be set aside on the banks' quarterly budget to meet the needs of changing IT landscape. IT officers should be tasked with ensuring regular training of the employees to equip them with the necessary skills for their operations. On a day-to-day basis, the officer should update the system, to be in up to date in order to avoid wrong delivery of information from the systems.

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