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ABSTRACT

Purpose: The main aim of this study was to assess the influence of innovation strategies on performance of Internet Service Provider Companies in Nairobi Kenya. The study specifically aims at assessing the influence of product innovation, process innovation, market innovation and technological innovation on performance of Internet Service Provider Companies in Nairobi Kenya. Despite the substantial number of empirical studies in strategic management, research on the relationship between innovation strategies and firm performance has not yet reached a definitive consensus on whether firms are better off remaining focused or diversifying in different businesses.

Methodology: The study adopted the Diffusion of Innovation Theory, Technology Acceptance Model, Resource Based View, Herman Kahn Scenario Thinking Theory and Theory of disruptive innovation. This research used a descriptive survey design. The study population was 228 managers from Marketing, IT, Product Development and Business Intelligence drawn from the 60 internet Service provider companies licensed by Communication Authority of Kenya. The study adopted stratified sampling technique. The sample size was 146 respondents. This study used primary data obtained from the original sources using questionnaires. Data collected from the questionnaires was converted from responses to quantitative format for ease in analysis using statistical package for social sciences (SPSS). The statistics generated was descriptive statistics which included frequencies and percentages and inferential statistics which included a multiple linear regression. A multiple linear regression model was used to show the relationship between the dependent and independent variables.



Findings: The study revealed that product innovation strategy, process innovation strategy, market innovation strategy and technological innovation strategy positively and significantly influence performance of Internet Service Provider Companies in Nairobi Kenya.

Unique contribution to theory, practice and policy: Based on the findings, study recommended that Internet Service Provider Companies in Nairobi, Kenya should stipulate policies that provide and enhance platforms for marketing innovation so as to improve performance in the internet service provider companies. There is need also to invest in marketing innovation strategies including pricing, future customer engagement, product placement and product promotional avenues so as to improve performance in the internet service provider.

Key Words: *Product Innovation, Process Innovation, Market Innovation, Technological Innovation and Internet Service Provider*

Background of the Study

For many years researchers have attempted to interrogate why some organizations achieve higher levels of performance than others. Organizational performance is dependent on many factors among them; the strategy of the firm, structure, resources and capabilities of the firm (Krishnan, 2017). Innovation strategies among other strategy choices can influence the performance of organizations (Kyalo, 2016). Both strategy and business environment have been hypothesized and empirically demonstrated to have significant effects on performance (Jové & Segarra2018). The understanding of the business environment is vital to high performance just as competition is important at influencing how successful an organization's business venture can be (Menguc, Auh & Shih, 2017). It is imperative to note that it is not simply a matter of producing a good product or service alone that meet the customers' wants and needs that give customer satisfaction, but how well the product or service is introduced to them.

Innovation is seen as an outcome of a collision between technological opportunities and user needs. Innovation does not only mean inventing. Innovation can mean changing your business model and adapting to changes in your environment to deliver better products or services (Nielsen, 2016). Innovation as a strategy is considered as creating, implementing and accepting new product/services, procedures and ideas. Therefore, innovation strategy guides the decision of how an organization would use available resources to meet its objective for innovation thus delivering value and creating competitive advantage (Weking, Brosig, Böhm, & Hein, (2018). There are various innovation strategies that include; Product innovation, Process innovation, market innovation and technological innovation.

Product innovation is related to organization success as in enables organization to acquire dominant position in a competitive market (Kutsenko Islankina, & Kindras 2018). Product innovation entails two specific activities which ensure a different product is introduced in the



market. The first activity is the re-modifying existing product through updating so as to improve it in terms of quality. The second activity is the developing a new product from scratch which is considered challenging. This kind of product innovation forces organization to innovate new products due to changing needs and demands of the market place (Reguia, 2017). One of the products that have undergone product innovation is mobile phones. With specific reference to Samsung mobile phones before 2003, the phone has been innovated from monochrome display which was small and used the buttons were based on numerical order with an external antenna. During that time, the phones were mainly used for making calls, text, simple gaming, simple calculator, timer and clock alarm.

Process innovation is in most cases focused on the way innovation is applied on the organization and execution process that results to development of new products or service. Process innovation encompasses customer services, strategic planning, employee assessment and project management Nauwankas (2016) indicated that process innovation increases the capability of using advance technology during production process which allows organization to reduce their overhead and cost of production. Thus, process innovation is adopted to enhance the functionality of various business process engineering that ensure quality of output which is considered essential for gaining great performance. Organizations which emphasize on process innovation and the greater capability to implement process innovation are in position to realize better business environment response and they are in best position to build more capabilities that is needed to achieve competitive advantage (Jimenez & Vall, 2016).

Market innovation can be described as creating and applying new ideas, delivering value to customers, communicating as well as customer relation management. Market innovation is the process initiating substantial and continuous changes in market with aim of improving awareness of products and services to the customer (Trott, 2017). Market innovation is primarily concerned with incremental alteration and changes in a given market and the positive impact these changes have and the effect on organization competitiveness. The innovation within the market favors one player who is capable to keep up with market structure changes hence acquire competitive advantage.

Technological innovation is the process by which industry generates new and improved products and production processes. Technological innovation includes activities ranging from the generation of an idea, research, development and commercialization to the diffusion throughout the economy of new and improved products, processes and services. Effective technological innovation includes either the diffusion process or the spread of the innovation commercially (Zairi, 2016). Technological innovation requires and is followed by new technology exploitation. New technology exploitation (NTE) refers to the utilization of new technology or scientific developments to improve the performance of products or manufacturing processes. The failure of



management to recognize and manage breakthrough technology innovation often results in organizational inefficiencies and frustration (Bigwood, 2017).

Statement of the Problem

Performance in the internet service provider companies has been an area of concern. An emerging consensus among experts is that in as much as performance involves efficiency and outputs, it also involves the effectiveness of outcomes. Due to growing population in countries around the world, there has been a surge in the demand for internet services, this in turn, has challenged internet providing companies to improve performance. In Kenya, majority of the Internet provider companies are contributing 24.3 percent to gross value added (CAK Basic Report, 2016). However, in Kenya statistics show that most of these companies are in stiff competition hence high rate of innovations strategy. Kiraka, Kobia and Katwaro (2013) found out that incidences of decline or stagnation were significant at between 15 to 30 percent across the several measures of performance with innovations in terms of services, markets and sources of raw materials. World bank report (2017) survey results showed that product innovation was manifest in Internet provider companies engaged in telecommunication sector at only 31.6%. The survey results also show that process and marketing innovations were largely not common features among Kenyan Internet provider companies.

The internet provider industry in Kenya has been recognized as one of the fastest growing sectors and at the same time witnessing high level of competition in Africa (World Bank, 2019). Internet providing service firms in Kenya have been facing diverse challenges including new entrants into the industry, increased consumers' demands and increasing demand for internet services. How responsive an organization is to the environment determines its success. Since changes in the external environment have a direct or indirect influence on the organization. Internet providing service firms in Kenya have adopted different innovation strategies to maintain their positions

Although there are previous studies conducted in this area, there are significant research gaps along conceptual, contextual and methodological spheres which are what this study investigated. In India, Sahay, Yamini Prakash and Gupta (2017) carried a research on performance and innovation in the Indian bulk drug industry. They found that generally innovation is critical for survival and has positive effect on the bottom lines. Also, Innovative firms receive highest financial returns. Nilufer Ergeneli, Asli Goksoy and Ozalp Vayvay (2017) conducted a research on Gaining Competitive Advantage through Innovation Strategies. They concluded that in today's economy sustainable competitive advantage is through innovation. Onodera, (2016) in his research too investigated the role and technological innovation in determining the competitiveness and profitability of the firms. It was found out that technological innovation has to be successfully managed putting into consideration internal and external factors of a firm.



Locally, Ogillo (2016) undertook a case study on the innovation strategies adopted by Equity bank Ltd. It was found that for a firm to embrace innovation, top management should be involved and direct resources to the team involved in the innovation processes. Orodho, (2018) undertook a case study on Innovation strategies at the Standard Chartered (K)oLtd. He found out that for a firm to be innovative it should encourage creativity. This leads to a higher platform of quality and innovative mindset. Kinyumu, (2016) research to study insurance industry in Kenya and innovation processes. He found out, all companies in the insurance industry have same level of innovation process understanding that involve everyone in the firm. Arising from above its clear a lot of work has been done in this area however a lot of issues remain unresolved such as effect of product innovation on performance and effect of technological innovation on performance.

Innovation is a catalyst for the growth and success of an organization, and helps in adapting and growth in market place (Kumar, 2016).Scholars and practitioners have become increasingly interested in innovation in the public sector (Osborne and Brown 2017). Many embrace the idea that innovation can contribute to improving the quality of services as well as to enhancing the problem-solving capacity of organizations in dealing with societal challenges (De Vries et al, 2016). It was against this background that the study sought to find out the influence of innovation practices on performance of Internet service provider companies in Nairobi Kenya.

Objectives of the Study

- i. To determine the influence of product innovation on performance of Internet Service Provider Companies in Nairobi Kenya.
- ii. To establish the influence of process innovation on performance of Internet Service Provider Companies in Nairobi Kenya.
- iii. To determine the influence of market innovation on performance of Internet Service Provider Companies in Nairobi Kenya.
- iv. To evaluate influence of technological innovation on performance of Internet Service Provider Companies in Nairobi Kenya.

LITERATURE REVIEW

Theoretical Review

Diffusion of Innovation Theory

This theory was pioneered by Rogers (1962). The theory posit that an innovation is an object, practice or idea which is newly brought into a social framework and on the other hand, innovation diffusion is the manner in which the novel idea is transferred into the social system via predetermined channel over a period of time. In this context, this theory attempts to explain the way that new inventions, for instance product innovation are accepted and applied in a social system (Clarke, 1995). Robinson (2009) critics the diffusion of innovations in that it takes a



drastically diverse outlook as compared to other theories of change. It does not focus on trying to get people to change but rather perceive change as being largely about the progression or reinvention of products and character so that they fit better to what the individual wants or needs. The notion in this theory is that people do not change but innovation ought to be in line with the needs of people. According to Sevcik (2004), the process of innovation adoption takes time and it is not something that happens instantaneously. He goes ahead to contend that, resistance to change greatly affects diffusion of innovation and this delays the process of adopting an innovation. There are five key attributes that affects innovation adoption process namely complexity, compatibility, observability, relative advantage and trialbility (Rogers, 1995). Rogers further contends that, how an organization perceives these attributes determines the level of new innovation adoption. The internet provider industry in Kenya has been recognized as one of the fastest growing sectors and at the same time witnessing high level of competition in Africa (World Bank, 2019). This theory is applicable to the current study since it expounds on how innovation like Product innovation, Process innovation, market innovation are adopted by organizations.

Technology Acceptance Model

This model was advanced by Davis (1989) and is also called the TAM. This model mainly looks into the adoption behavior of clients and evaluation that is normally done for the reason of establishing a system to be applied that will not only be useful to the customers but also provide them with convenience. Prior researchers have investigated the principal concept of validity of TAM in gauging individual's acceptance and drew the conclusion that, TAMs principal concepts fail in explaining how acceptance by users is influenced by technology as well as other usability factors (Moon & Kim, 2015). Davis (1989) contends that, anticipated usefulness refers to the belief by an individual that the technology or information system adopted will significantly improve job performance after its adoption. Perceived effortlessness of use indicates how easy it is for the individual to learn how to use the new technology and information system. TAM emphasizes on ease of use as a means of predicting the usefulness of a system (Gefen, Karahanna & Straub, 2013).

Many researchers opine that the perceived usefulness of a technology is important when deciding whether to adopt it. Tan and Teo (2013) are of the opinion that, adoption of a technology is influenced by its perceived usefulness. In conclusion, when usage of electronic banking practices has a higher perceived usefulness the likelihood of it being adopted will also be high (Potaloglu & Ekin, 2015). The key drivers of innovation strategies acceptance are perceived as the TAM variables. This theory is applicable to the current study as it expounds that for innovation strategies to be adopted it must gain acceptance by users and this will be based on ease of use. It therefore implies that if innovation strategies does not gain acceptance, then its adoption will be low and as such might not have a significant influence on performance.

Resource Based View



It was Barley who first proposed this idea back in 1957. Essentially, this hypothesis is predicated on the premise that firms analyze their competitive advantage through processes of evaluating their strategic advantages. According to the RBVs, each and every firm has unique, tangible and intangible resources and firm abilities to utilize those assets. This is an attributing factor to the differences between them. Resources owned by each firm form a basis of competitive advantage for each firm when developed well (Alvarez & Busenitz, 2001). Resources owned by a firm play a crucial part in the strategic practice and organizational performance. According to Barley (2001), strategic resources of the firm for which have the potential to strategically place the organization at a competitive advantage against its rivals must be rare, valuable, imperfectly imitable and not substitutable. The theory suggests that organizations must come up with unique means of having competitive edge. However, the Resource Based Theory plays a significant approach to an effective strategy function. As suggested by the theory, competitive advantage is company's heart focusing on both strategic management and strategic marketing. (Hamel, 2012). The theory's opponents contend that the theory should not recognize resource variables, that is, an expectation that they occur easily. Barley (1991) argues that the theory fails to address how the resources acquire key capabilities required or rather developed to enable the organization attain its competitive advantage. Nevertheless, the theory assumes that an organization can be profitable amidst competitive environment. The relevance of the theory is that performance may not be dependent on factors such as innovation, economies of scale or natural resources, because these are progressively simple to reproduce. The theory strengthens the idea that the success of an organization depends highly on people as an important asset and that firms should nurture employees within a supportive work environment.

Herman Kahn Scenario Thinking Theory

Herman Kahn (1983) was a founder of the Herman Kahn Scenario Thinking Theory and one of the preeminent futurists of the latter part of the twentieth century. He originally came to prominence as a military strategist and systems theorist while employed at the RAND Corporation. Herman Kahn's theories contributed to the development of the nuclear strategy but later moved from military practice to business environment (Kinuthia, 2010). Theoretically Herman Kahn's scenario thinking can be summarized as: imagining, proposing or desiring a state of being of an object (world, a society or an organization) in a future within a given time period by studying and analyzing the past or present values of variable attributes of the object under consideration and how those attributes may vary under certain conditions in a projected time period (Karanja, 2011). This analysis gives the scenario planner an understanding of an imagined future in order to make appropriate decisions. State of being, time period and object attributes are the variables in Herman Kahn's scenario theory, that interact with one another to determine the future behavior of an object in a dynamic environment (Quang, 2014). The need for an object to exhibit certain behavior is the starting point. This behavior should be observable within a definite period of time in future. And



to have a rough idea of such behavior the current behavior must be known through the analysis of the current values of the attributes of the object. By knowing the current values of the attributes, the process innovator is given a fair knowledge about the possible behaviors of the object in the future, hence different futures (Hobbs, Legraw & Veit, 2010).

Theory of Disruptive Innovation

A disruptive innovation has been a buzzword since Clayton Christensen coined it back in the mid 1990s to describe the way in which new entrants in a market can disrupt established businesses (Sevcik, 2004). The theory of disruptive innovation has proved to be a powerful way of thinking about innovation-driven growth. Many leaders of small, entrepreneurial companies praise it as their guiding star; so do many executives at large, well-established organizations, including Intel, Southern New Hampshire University, and Salesforce.com. Unfortunately, disruption theory is in danger of becoming a victim of its own success. Despite broad dissemination, the theory's core concepts have been widely misunderstood and its basic tenets frequently misapplied (Gefen, Karahanna & Straub, 2013). Furthermore, essential refinements in the theory over the past 20 years appear to have been overshadowed by the popularity of the initial formulation. As a result, the theory is sometimes criticized for shortcomings that have already been addressed. In this study, this theory mainly supports organization innovation variable

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Conceptual Framework



Independent variables

Dependent Variable

Figure 1: Conceptual Framework

Product Innovation

From the perspective of an individual firm, its new or improved goods which can be sold on the market are product innovations. Product innovations have a consistent positive effect on employment growth (Damijan, Kostevc, & Stare, 2016). This effect is larger for manufacturing industries. Process innovations are found to exhibit no labour displacement effects, while organizational and marketing innovations reveal a consistent positive on employment. Product Innovation revolves around new products, quality improvements -packaging, branding etc. Research by Fowinkel (2016) reveals that the concept of product innovation is broader and includes changes in the utilization of a product or service in the market. Product innovations impact effectiveness by providing the user with a new functionality or existing functionality performed in a new way. Many agree that innovation is crucial in these countries, because innovation in all economic sectors is fundamental for growth, in order to catch up with middle- and high-income economies (Voeten, 2016). The micro-level relationship among firm-level resources, and



innovative activity in Low Income Countries has received little attention in the past. Elements of a product strategy may centre on improving product quality, replacing products that are being phased out, or extending the product range.

Process Innovation

Process innovation involves the implementation of a new or significantly improved production or delivery method (Davenport, 2018). Process innovation refers to process improvement and is consistently focused on hard facts and value. The first wave of process improvement used continuous improvement (kaizen) techniques to empower people to solve problems. This proved to be a very successful approach and today we see the lean movement which is based on this thinking with tools such as the 6-sigma (George, Maxey, & Rowlands, 2016), quality awards and also maturity model such as the Capability Maturity Models (Chrissis, Konrad, & Shrum, 2017).

Since the beginning of the 1990s there has been an enormous focus on business processes and business processes as a source of innovation. This marks the second wave and the understanding was that the business processes were inhibited by organizational and cultural boundaries. Consequently techniques like Business Process Re-engineering (BPR) emerged using a clean slate approach and new IT was applied as a silver bullet. Improving production routines may lead to price advantages over competitors as the firm reduces unit costs. Elements of a production strategy may focus on improving production flexibility, reducing lead times, improving working conditions, or reducing labour costs.

Market Innovation

Charumathi (2016) reported that new products introduced in the last five years generated 41% of company's sales and 39% of company's profits. Besides these benefits, NPD offers other benefits like the positive impact on company image, the opening up of new markets and the provision of a platform for further new products (Storey & Easingwood, 2018). Accordingly, Quadros, Furtado, Roberto and Franco (2018) in a study on technological innovation in Brazilian industry found that innovations are done in general to meet production and marketing goals as improvement in product quality, reduction in production cost, increase in market share and new market structures, creation of new markets, and increase in production flexibility (Quadros et al., 2019).

Technological Innovation

Measuring the efficiency of the technological innovation activities is not new in literature but the empirical evidence is scarce. Choi (2017) estimated the efficiency of R&D collaborations with Spanish public research centers. They considered firm revenue, number of employees and R&D expenditures as inputs and total income, new employees and patents as the outputs of the R&D collaborations. They observed that efficiency varied depending on firm size, and the level of firm knowledge. With the aim of analyzing the efficiency behavior of 15 industries in China, Guan et



al. (2016) considered R&D, learning , manufacturing, marketing and organization as innovation inputs and market share, sales growth, export rate, profit growth, productivity and new product rate as the outputs of what he defined as technological innovation capability. They concluded that only 16% of the firms were technical efficient. In technical business services, product innovations included highly specialized software, task-orientated computer products, data management tools, and internet-based services; process innovations ranged from computerized networking in the development of software, the adoption of ISO standards, and the development of new project standards and methodologies dealing with evaluation methods and quality testing.

Firm Performance

Performance, according to McCann (2016) relates to the efficiency and effectiveness of the firm. According to Bigwood,(2017) performance is a contextual concept associated with the phenomenon being studied. Dess and Robinson (2015) posit that regardless of the framework chosen to conceptualize organizational performance, it is apparent that organizational performance is a complex multidimensional phenomenon. Kaplan and Norton (1992) opined that different measures of organizational performance have been used in management studies with little or no thoughtful discussion of why the measures used in the studies were chosen. The balanced scorecard generates performance measures from the organization's mission, vision and strategy. It provides a tool for comprehensively measuring the performance of the organization undertaken by the organization. Another important aspect measured is customer satisfaction levels. It focuses on the customer and market and measures critical success metrics targeted at these segments. Another important measure is on internal processes. It identifies the business processes in which the organization performs well. Lastly, balanced scorecard focuses on learning and growth which are essential for long term growth of the business (Kaplan & Norton, 1992).

RESEARCH METHODOLOGY

The study adopted a descriptive cross sectional research design. The target population of this study was 228 managers from Marketing, IT, Product Development and Business Intelligence drawn from the 60 internet Service provider companies licensed by Communication Authority of Kenya.

The choice of these officers were based on the fact from CAK(2019) that they have a vast knowledge of the matters relating to internet service industry and are best placed to offer valuable information to the study without biasness. Hosmer and Lemeshow (1989) sampling formula was utilized in developing a sample of 146 respondents. Primary data in the study was collected through questionnaires.

Inferential and descriptive statistics was used to analyze data. Results of the analysis were presented by use of tables and figures. The study used the following regression model:



$\mathbf{Y} = \boldsymbol{\alpha} + \beta_1 \mathbf{X}_1 + \beta_2 \mathbf{X}_2 + \beta_3 \mathbf{X}_3 + \beta_4 \mathbf{X}_4 + \boldsymbol{\varepsilon}$

Where Y = Firm performance, α =regression intercept, β_1 , β_2 , β_3 , β_4 = Model coefficients, X₁ = Product Innovation strategy, X₂= Process Innovation strategy, X₃= Market Innovation strategy

X₄= Technological innovation strategy and ε =error term

Results

Out of 146 questionnaires were distributed to respondents, 139 questionnaires were received this represented 95.21% response rate and seven questionnaires were not received this accounted for 4.79% of the total questionnaires distributed. Mugenda and Mugenda (2000) assert that a response rate of more than 50% is adequate for analysis. Babbie (2004) also asserts that a 60% return rate is good and a 70% return rate is very good. Information from the questionnaires was adequate for analysis.

Descriptive Findings and Analysis

Descriptive analysis included an assessment of the product innovation strategy, process innovation strategy, market innovation strategy and technological innovation strategy and firm performance. The statements were anchored on a five point Likert-type scale ranging from 1=Strongly Agree to 5= Strongly Disagree and respondents were asked to indicate the extent to which they agreed to the statements. Descriptive measures included percentage, frequency, mean and standard deviation.

Product innovation Strategy

Product innovation strategy is one of the practices in innovation strategy. To measure product innovation strategy, a set of five statements were formulated. The respondents were asked to indicate the extent of agreement with each of the product innovation strategy statements. The pertinent results are presented in Table 1.



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Table 1: Product innovation Strategy

Product innovation Strategy	1	2	3	4	5	Mean	SDV
The firm introduces new or significantly improved products.	7.9% (11)	19.4% (27)	15.8% (22)	41.7% (58)	15.1% (21)	3.56	0.23
Changing products to reflect changing customer tastes and preferences.	5.5% (9)	33.8% (47)	7.2% (10)	35% (50)	15.5% (23)	3.20	1.55
Research and development activities undertaken by your organization create new knowledge or to solve scientific or technical problems	9.4% (13)	34.5% (48)	14.4% (20)	28.8% (40)	12.9% (18)	3.36	1.65
Changing services to reflect changing customer tastes and preferences.	22.3% (31)	23.7% (33)	10.1% (14)	28.8% (40)	15.1% (21)	3.34	1.34
The Firm innovates products that in the short–term might not be profitable but in the long-term beneficial to the organization	9.4% (13)	34.5% (48)	14.4% (20)	28.8% (40)	12.9% (18)	3.50	1.21
Overall						3.39	1.12

From Table 1, 41.7% (58) and15.1% (21) of the sampled respondents agreed and strongly agreed respectively that the firm introduces new or significantly improved products. A mean of 3.56 and standard deviation of 0.23 implies there is significant deviation from mean. On the other hand, 35% (50) and 15.5% (23) of the respondent agreed and strongly agree respectively that changing products to reflect changing customer tastes and preferences with a mean of 3.20 and standard deviation of 1.55. The results also revealed that 28.8% (40) agreed that research and development activities undertaken by your organization create new knowledge or to solve scientific or technical problems and12.9% (18) strongly agreed. A mean of 3.36 and standard deviation of 1.65 indicated that there is great deviation from the mean. There results further revealed that 28.8% (40) and 15.1% (21) of the sampled respondents agreed and strongly agreed respectively that changing services to reflect changing customer tastes and preferences. A mean of 3.34 and standard



deviation of 1.34 implies that there is significant deviation from the mean. However, majority of the respondents confirmed that the Firm innovates products that in the short-term might not be profitable but in the long-term beneficial to the organization indicated by 28.8% (40) of the respondents who agreed and 12.9% (18) who strongly agreed. A mean of 3.50 and standard deviation of 1.21 implies there great deviation from mean. The overall mean of product innovation strategy is 3.39 with a standard deviation of 1.12. This postulated that there was great deviation from the mean in regard to the effort of Internet Service Provider Companies in relation innovation practices through product innovation strategy. The findings are consistent too Koks and Kilika (2016), states that the concept of product innovation strategy has grown and has often been viewed as the main tool for increasing a firm's performance. They add that product innovation strategy may involve modification of an existing product or how the product is presented, or formulation of an entirely new product that satisfies a newly defined customer want or market niche. The study findings is similar to Mahran, (2017) assert that product innovation strategy allows companies to gain competitive advantage, attract new customers, retain existing customers and strengthen their ties with their distribution networks. Product innovation strategy is seen as a competitive tool and can give a firm better performance.

Process Innovation Strategy

Process innovation strategy is one of the practices in innovation strategy. To measure process innovation strategy, a set of five statements were formulated. The respondents were asked to indicate the extent of agreement with each of the process innovation strategy statements. The pertinent results are presented in Table 2.



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Process Innovation Strategy	SD	D	U	A	SA	Mean	SDV
Did your organization introduce new or significantly improved methods of manufacturing or producing goods or services	22.3% (31)	23.7% (33)	10.1% (14)	28.8% (40)	15.1% (21)	2.91	1.42
Did your organization introduce new or significantly improved logistics, delivery or distribution methods for your inputs, goods or services	15.1% (21)	23.7% (33)	9.4% (13)	32.4% (45)	19.4% (27)	3.17	1.39
Did your organization engage in acquisition of advanced machinery to be used for new or significantly improved processes	9.4% (13)	34.5% (48)	14.4% (20)	28.8% (40)	12.9% (18)	3.01	1.24
Acquisition of existing know-how, copyrighted works, patented and nonpatented inventions,	7.9% (11)	19.4% (27)	15.8% (22)	41.7% (58)	15.1% (21)	3.37	1.19
Identifying in order to eliminate non-value- added activities in processes of delivery.	21.5% (30)	19.4% (27)	18.7% (25)	27.3% (38)	12.9% (18)	2.91	1.35
Overall						3.07	1.32

Table 2: Descriptive results on Process Innovation Strategy

From Table 2, 28.8%(40) of the sampled respondents agreed that the firm introduce new or significantly improved methods of manufacturing and 15.1%(21) strongly agreed. There was great deviation from them (2.91) as indicated by standard deviation of 1.424. Similarly, 32.4%(45) and 19.4%(27) of the sampled respondents agreed and strongly agreed that their organization introduced new or significantly improved logistics, delivery or distribution methods for your inputs, goods or services. The mean was 3.17 and standard deviation of 1.388 implying significant deviation exists from the mean. The results also revealed that 28.8% (40) agreed that their organization engaged in acquisition of advanced machinery to be used for new or significantly improved processes and 12.9%(18) strongly agreed with mean of 3.01 and standard deviation of 1.239. According to Ogilvy (2006) in their report titled process innovation as the fulfillment of critical theory in the futures research process innovation strategy resulted in greater product penetration. Further, in their study on market attractiveness, resource-based capabilities, venture strategies, and venture performance. Majority of the respondents confirmed that their organization acquired existing know-how, copyrighted works, patented and non patented inventions, 41.7%(58) of the respondents who agreed and 15.1%(21) who strongly agreed with a mean of 3.37 and



standard deviation of 1.187. The results also revealed that 27.3% (38) and 12.9%(18) of the sampled respondents agreed and strongly agreed respectively that their organization identified in order to eliminate non-value-added activities in processes of delivery. A mean of 2.91 and standard deviation of 1.351 indicated that there is strong deviation from the mean. The overall mean was 3.07 with a standard deviation of 1.32 implying that there is significant deviation in the manner process innovation strategy was implemented at various internet service provider companies.

The findings agree with Kamau (2019) sought to determine the impact of process innovation strategies on financial performance of Safaricom Plc. The findings indicated that process innovation strategies have a significant influence on financial performance of Safaricom Limited. On other hand the study also agree with Phung and Mishra (2016) did a study on the impact of process innovation on firm performance of listed companies over a period of 2007 to 2012. The findings revealed that process innovation had a positive negative effect on the firm performance. Further, the findings also revealed that lack of a corporate governance system which is efficient may encourage firms to follow process innovation strategies which would impair the firm's performance.

Market Innovation Strategy

Market innovation strategy is one of the practices in innovation strategy. To measure market innovation strategy, a set of five statements were formulated. The respondents were asked to indicate the extent of agreement with each of the market innovation strategy statements. The pertinent results are presented in Table 3.



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Market Innovation Strategy	1	2	3	4	5	Mean	SDV
Renewal of the techniques of promotion of services used for the promotion of current and / or new services offered.	7.9% (11)	25.5% (37)	9.4% (13)	38.8% (54)	17.3% (24)	3.31	1.25
Renewal of the channels of the distribution but not changing the processes of logistics related to the produce delivery	5.5% (9)	33.8% (47)	7.2% (10)	35% (50)	15.5% (23)	3.22	1.25
Renewing general marketing management activities.	7.2% (10)	34.5% (48)	10.1% (14)	33.1%(45)	15.1% (21)	3.14	1.24
We look for opportunities based on customer future needs and develop products to meet this need	10.1% (14)	23% (32)	5.8% (8)	47.5%(55)	13.7% (19)	3.32	1.25
The firm tries to forecast future market trends in order to come up with appropriate strategies	7.9% (11)	7.9% (11)	5.5% (9)	28.8%(40)	48.9% (58)	4.03	1.25
Overall						3.4	1.25

Table 3: Descriptive results on Market Innovation Strategy

From Table 3, 38.8%(54) and 17.3%(24) of the sampled respondents agreed and strongly agreed respectively that renewal of the techniques of promotion of services used for the promotion of current and / or new services offered. A mean of 3.31 and standard deviation of 1.25 implied that there is some deviation from the mean. Similarly, 35%(50) agreed and 15.5%(23) strongly agreed that renewal of the channels of the distribution but not changing the processes of logistics related to the produce delivery with a mean of 3.22 and standard deviation of 1.257. The results also revealed that 33.1%(45) and 15.1%(21) of the sampled respondents agreed and strongly agreed respectively that renewing general marketing management activities. A mean of 3.14 and standard deviation of 1,24 indicated that there was significant deviation from mean.

Majority of the respondents confirmed that we look for opportunities based on customer future needs and develop products to meet this need as shown by 47.5%(55) and 13.7%(19) of the sampled respondents who agreed and strongly agreed with this statement. A mean of 3.32 and standard deviation of 1.25 indicated that there is great deviation from mean. Lastly, 48.9%(58) strongly agreed that the firm tries to forecast future market trends in order to come up with appropriate strategies and 28.8%(40) agreed. A mean of 4.03 and standard deviation of 1.25 implied that there is great deviation from mean. Overall mean of 3.4 and standard deviation of 1.23



implies that there were significant deviation on market innovation strategy as applied in innovation s The findings disagree with Hollanders and Evangelista (2017) using a feasible approach, conducted a study on promises and pitfalls of organisational and marketing innovation found that organisational and marketing innovations are deployed by a considerable share of European enterprises in order to gain economic success and competitive advantage. Nevertheless, the findings show that organisational and marketing innovation can also contribute to firms' direct economic performance in terms of sales growth and increases in productivity. Contrary it also agree with Njoroge (2016) studied on marketing innovation strategies and the performance of enterprises in Matuu town, Machakos County, Kenya. The study established that marketing innovation strategies and new product marketing strategies have a positive insignificant influence on the performance of SMEs in Matuu town while innovative marketing penetration strategies have a significant negative relationship with the performance of SMEs in Matuu town.trategy.

Technological innovation Strategy

Technological innovation strategy is one of the practices in innovation strategy. To measure Technological innovation strategy, a set of five statements were formulated. The respondents were asked to indicate the extent of agreement with each of the technological innovation strategy statements. The pertinent results are presented in Table 4.



Technological innovation Strategy	SD	D	U	Α	SA	Mean	SDV
Use of technology is a priority in this organization	22.3% (31)	23.7% (33)	10.1% (14)	28.8% (40)	15.1% (21)	2.95	1.34
The level of technological sophistication considered in the organization was satisfactory	15.1% (21)	23.7% (33)	9.4% (13)	32.4% (45)	19.4% (27)	3.57	1.40
The commercialization of technological product innovations often requires the development of new marketing methods.	9.4% (13)	34.5% (48)	14.4% (20)	28.8% (40)	12.9% (18)	3.11	1.23
New production technique will typically increase productivity only if is supported by changes in organization	7.9% (11)	19.4% (27)	15.8% (22)	41.7% (58)	15.1% (21)	3.47	1.25
Diverse range of information enables the partner to better respond to internal processes and external market conditions	21.5% (30)	19.4% (27)	18.7% (25)	27.3% (38)	12.9% (18)	2.31	1.45
Overall						3.08	1.33

Table 4: Descriptive Results on Technological Innovation Strategy

From Table 4, 28.8% (40) of the sampled respondents agreed that Use of technology is a priority in this organization. There was great deviation from them (2.95) as indicated by standard deviation of 1.34. Similarly, 32.4% (45) and 19.4% (27) of the sampled respondents agreed and strongly agreed that The level of technological sophistication considered in the organization was satisfactory. The mean was 3.57 and standard deviation of 1.40 implying significant deviation exists from the mean. The results also revealed that 28.8% (40) agreed that the commercialization of technological product innovations often requires the development of new marketing methods and 12.9% (18) strongly agreed with mean of 3.11 and standard deviation of 1.23. The findings agree with Mbithi et al., (2016), technological innovation comprises activities that contribute to the research, development and design of new products, services or techniques, or to improving existing products, and generates new technological knowledge. Innovation process depends essentially on external conditions; designing of new technologies results from interactions with customers, suppliers, competitors and various other public and private organizations.

Majority of the respondents confirmed that new production technique will typically increase productivity only if is supported by changes in organization as indicated by 41.7%(58) of the



respondents who agreed and 15.1%(21) who strongly agreed with a mean of 3.37 and standard deviation of 1.187. The results also revealed that 27.3%(38) and 12.9%(18) of the sampled respondents agreed and strongly agreed respectively that diverse range of information enables the partner to better respond to internal processes and external market conditions. A mean of 2.31 and standard deviation of 1.45 indicated that there is strong deviation from the mean. Overall mean of 3.08 and standard deviation of 1,33 implies that there were significant deviation on technological innovation strategy as applied in innovation strategy. The findings are also consistent to Didier and Olsson (2017) the findings enabled the articulation of the main advantage of technological innovation, which is, that stakeholders do not start from zero, they do not start with nothing. Every firm has its own base of knowledge, which they share to achieve a common goal. In the case of micro insurance for instance, a success factor was the ability to reuse an existing platform of payment. The high penetration of mobile technology on emerging markets was particularly important here due to the lack of infrastructure and the search for cost reduction.

Organization Performance

The research also determined the overall performance of Internet Service Provider Companies in Nairobi Kenya over the last five years as shown on figure 2





Figure 2 above shows trend in performance over the last five years. From 2015 to 2016, percentage performance was 0.65% while between 2016 and 2017 it was 10.84%. However, the performance rate reduced from 2017-2018 as indicated by 2.01% while from 2018 to 2019 it increased to 3.11%. There was significant increase from 2019 to 2020 as shown by 28.08%. This implies that there has being growth of performance among Internet Service Provider Companies in Nairobi since 2018 hence increase in sales volume and return of investment. In average, between 2016 and 2020, performance growth has been 8.9362%

Inferential Analysis.



Correlation Analysis

Correlation analysis is used to determine the strength and direction of the relationship between the innovations strategies (Product innovation strategy, process innovation strategy, market innovation strategy, technological innovation strategy and firm performance and the findings were as shown in Table 5 below:

		Product innovation	Process innovation	Market Innovation	Technological innovation
Product	Pearson Correlation	1			
mnovation	Sig. (2-tailed)				
Process	Pearson Correlation	.756**	1		
innovation	Sig. (2-tailed)	.000			
Market Innovation	Pearson Correlation	.504**	.579**	1	
	Sig. (2-tailed)	.000	.000		
Technological	Pearson Correlation	.747**	.874**	.619**	1
innovation	Sig. (2-tailed)	.000	.000	.000	
	Ν	139	139	139	139
	Pearson Correlation	.647**	.728**	.524**	.709**
performance	Sig. (2-tailed)	.000	.000	.000	.000
	Ν	139	139	139	139

Table 5: Correlation Analysis

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



The results shows all the relationships were positive, and significant (p-value=0.001) implying that innovation strategies are positively and significantly related with firm performance. The most significant stronger relationship was between Product innovation and firm performance (r=0.728, p-value= 0.000< 0.05). This implied that increase in innovation strategy in product innovation would results to increase in firm performance. This followed by the relationship between firm performance and process innovation, (r=0.705, p-value = 0.000<0.05). This postulated that increase in innovation strategy in process innovation would results to increase firm performance. This was followed by the relationship between firm performance and market innovation, (r=0.647, p-value = 0.000<0.05). This implied that increase in innovation strategy in market innovation would results increase in firm performance. This was followed by the relationship of technological innovation and firm performance (r=0.524, p-value = 0.000<0.05) indicating that there was a statistically significant moderate positive correlation between technological innovation would results increase in firm performance.

Multiple Linear Regression Analysis

Through the use of multiple regression, we investigate whether or not a number of independent factors may be combined to predict a single dependent variable (Mugenda & Mugenda, 2008). The use of multiple regression was warranted in this circumstance due to the existence of a significant number of possible independent variables. The purpose of this research was to investigate the connections between different types of innovation, namely those pertaining to company performance, such as technological innovation, market innovation, process innovation, and technological innovation. A single equation was used, with the results of which were based on a combined examination of the four different components, to make a prediction about the future performance of the firm. A multiple linear regression analysis was performed in order to investigate the importance of the correlation that exists between the independent and dependent variables.

Model	R	R Square	Adjusted	RStd. Error o	Statistics					
			Square	the Estimate	R Squa Change	reF Change	df1	df2	Sig. Change	F
1	.756 ^a	.571	.536	.68437	.571	15.991	4	48	.000	

Table 6: Model Summary

The result of 0.571 that is shown in Table 6 for the R-squared statistic indicates that the research model properly characterizes the data and is capable of explaining 57.1 percent of the variation in the performance of the firm. This is a significant improvement over the previous finding, which



indicated that the factors in the research could only explain 42.9 percent of the variation.

Model	Sum of Squares	Df	Average Square	F	Sig.	
Regression	29.958	4	7.490	44.5833	.000 ^b	
1Residual	22.482	134	.168			
Total	52.440	138				

Table 7: Analysis of Variance

a. Dependent Variable: Firm performance

b. Predictors: (Constant),Product innovation strategy, Process innovation strategy, market innovation strategy, technological innovation strategy

Further, ANOVA results in table 8 also shows that the F-calculated value was 44.5833 while the F-Critical/tabulated was 2.42 at 5% significance level (P=0.05). That is, from the study model, the significant F value shows that the four independent variables (technological innovation strategy, market innovation strategy, process innovation strategy) are indeed different from each other and that they affect the dependent variable firm performance in varied ways.

Table 9 shows that the innovation methods had a strong partial impact in forecasting company performance initiatives, as evidenced by the significant unstandardized beta coefficients: Product innovation strategy had $\beta = 0.204$, t = 2.519, p-value = 0.001 < 0.05, process innovation strategy had $\beta = 0.242$, t = 2.327, p-value = 0.004 < 0.05 which were considered to be significant at 5% level of significance whereas technological innovation strategy had $\beta = 0.427$, t = 3.028, p-value = 0.002 < 0.05 which was considered significant at 5% level of significance. The significance level of the constant was found to be too high to be considered statistically significant ($\beta = -0.286$, t = -0.605, p-value = 0.548 > 0.05), suggesting that factors other than the four innovation strategies (Product innovation strategy, Process innovation strategy, market innovation strategy, technological innovation strategy, market innovation strategy, technological innovation strategy, market formance.



Table 9: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	Т	Sig.				
	В	Std. Error	Beta						
(Constant)	286	.473		605	0.548				
Product innovation strategy	0.204	0.081	0.170	2.519	0.001				
Process innovation strategy	0.427	0.141	0.364	3.028	0.003				
Market innovation strategy	0.112	0.013	0.104	8.615	0.000				
Technological innovation strategy	ⁿ 0.242	0.104	0.200	2.327	0.004				
a. Dependent Variable: firm performance									

Multiple Linear Regression model equation that was used to predict the performance of Internet Service Provider Companies in Nairobi Kenya when given the innovation strategies (Product innovation strategy, Process innovation strategy, market innovation strategy, technological innovation strategy innovation strategies) was:

Firm Performance = -0.286+ 0.203(Product innovation strategy) + 0.427(Process innovation strategy) + 0. 242(Technological innovation strategy) + 0. 112(Market innovation strategy)

The first hypothesis of the research was to investigate the significance of the relationship between product innovation strategy and the performance of Internet Service Provider Companies in Nairobi, Kenya. Specifically, the researchers wanted to determine whether or not there is a cause-and-effect relationship between the two. The researcher wanted to see whether the following hypothesis held up to scrutiny;

H_{01} : There is no significant influence of product innovation strategy on performance of Internet Service Provider Companies in Nairobi Kenya.

The regression coefficient results revealed that β = 0.204, p=0.0010.05; as a consequence, product innovation had a statistically significant effect on the performance of Internet Service Provider Companies in Nairobi Kenya. These findings are based on the findings that are shown in Table 9. According to this, it was projected that an increase of one unit in the level of product innovation



would result in a performance rise of 20.4% on the part of Internet Service Provider Companies operating in Nairobi, Kenya. The findings provide more evidence of the significance of innovation strategy within product strategy. The findings suggest that product innovation strategies are essential to innovation strategies.

The second hypothesis of the research was to establish the relevance of the causation and effect link between the process of innovation strategy and the performance of Internet Service Provider Companies in Nairobi, Kenya. The researcher wanted to see whether the following hypothesis held up to scrutiny;

H_{02} : There is no significant influence of process innovation strategy on performance of Internet Service Provider Companies in Nairobi Kenya.

The regression Coefficient results showed that $\beta = 0.427$, p=0.003 < 0.05; therefore, product innovation had a statistically significant influence on the performance of Internet Service Provider Companies in Nairobi Kenya. This suggests that Internet service provider performance in Nairobi, Kenya, may improve by 42.7% with a one-unit increase in process innovation. Based on these results, the research concludes that process innovation is essential for every successful business.

The third hypothesis of the research was to investigate the importance of the causation and effect link that exists between process innovation strategy and the performance of Internet Service Provider Companies in Nairobi, Kenya. The researcher wanted to see whether the following hypothesis held up to scrutiny;

H_{03} : There is no significant influence of market innovation strategy on performance of Internet Service Provider Companies in Nairobi Kenya

The regression Coefficient results showed that $\beta = 0.112$, p=0.000 < 0.05; hence market innovation had a statistically significant influence on the performance of Internet Service Provider Companies in Nairobi Kenya. According to the data, Internet service provider companies in Nairobi, Kenya may expect an 11.2 percent boost in performance for every unit increase in market innovation.

The fourth hypothesis tested the idea that ISPs in Nairobi, Kenya would benefit from learning about and adopting cutting-edge tech to improve their services for their customers. The study's hypothesized results were as follows;

*H*₀₄: There is no significant influence of technological innovation strategy on performance of Internet Service Provider Companies in Nairobi Kenya

The coefficients outcome as obtained from regression analyses yielded β = 0.242, *p*=0.004<0.05; hence technological innovation had significance statistical influence on the performance of Internet Service Provider Companies in Nairobi Kenya. This shows that a 24.2 percent increase in the performance of Internet Service Provider Companies in Nairobi Kenya was likely to emerge



from a unit improvement in technological innovation. This implies that Internet Service Provider Companies in Kenya depend on technological innovation.

Conclusion

According to the findings, a company's performance is significantly correlated with the amount of time and effort put into developing and implementing a market innovation plan. The data showed a strong link between incremental market innovation method improvements and improved company success. A favorable correlation was found between management meetings on product innovation strategies and company performance. In addition, the findings suggested that investment in research and development of new products is an important factor in elevating an organization's overall levels of profitability. The study also found that involving expert consultants in the process innovation strategy is positively correlated to firm performance, that process innovation strategies are significant contributors to firm performance, and that staff engagement is a critical component of process innovation strategies that impacts firm performance.

The research went on to draw the following additional conclusions: market innovation drives firm performance; market innovation strategy is crucial to firm performance; entering new market segments drives firm performance; developing new marketing channels is an essential ingredient leading to improved firm performance. The study also found that the use of ICT platforms had a substantial effect on firm performance, that sharing ICT platforms with clients improved firm performance, and that conducting business via mobile platforms resulted in better firm performance, and that conducting business via SMS platforms was crucial. Technological innovation was proven to be a critical driver of product innovation and a beneficial contributor to business success.

Recommendations

In order to increase their overall performance, Internet Service Provider Companies in Nairobi, Kenya should establish rules that promote and expand platforms for product innovation. This will allow the Internet Service Provider Companies to better serve their customers. Investments in product innovation methods that boost new product creation, product quality, creative product activities, and research and development are also required. It is important for Internet Service Provider Companies in Nairobi, which is located in Nairobi City County, Kenya, to enact rules that enable and develop platforms for process innovation. This would allow the Internet Service Provider Companies to increase their overall level of performance. Putting money into process innovation methods is a must if you want your innovation activities to bear fruit. Using these methods, HR practices related to innovation, resource mobilization, income distribution, and monitoring and evaluation would be optimized.



Policymakers in Nairobi, Kenya should encourage and support ISPs' efforts to create incubators for new technologies if they want to see a rise in the quality of service provided by the city's Internet providers. This would improve the firms' ability to compete in international markets. The commercialization of information, IT, and knowledge exchange, as well as manufacturing processes, are all areas that might benefit from investments in technological innovation initiatives. According to the findings of the research, implementing the aforementioned measures would result in an increase in operational efficiency for internet service provider businesses. Internet service provider firms in Nairobi, Kenya, should enact regulations that promote and develop platforms for marketing innovation in order to improve their overall performance. This would allow for the companies to compete more effectively in the global market. In order to boost performance in the internet service provider industry, it is necessary to invest in marketing innovation techniques such as price, future customer interaction, product positioning, and product promotional channels.

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