

**T.C.  
ISTANBUL GEDİK UNIVERSITY  
INSTITUTE OF GRADUATE STUDIES**



**ROLE OF INNOVATION ON GROWTH OF MANUFACTURING FIRMS  
REGISTERED BY THE KENYA ASSOCIATION OF MANUFACTURERS**

**M.Sc. THESIS**

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**Engineering Management Department**

**Engineering Management Master in English Program**

**AUGUST 2022**

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**İSTANBUL GEDİK ÜNİVERSİTESİ  
LİSANSÜSTÜ EĞİTİM ENSTİTÜSÜ MÜDÜRLÜĞÜ**

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## **DEDICATION**

I dedicate this thesis to my loved ones, including my family and friends. My devoted parents deserve a special thank you because they have never left my side and are truly exceptional.

I also thank all of my numerous friends who have helped me throughout this process by dedicating this dissertation to them.

## **FOREWORD**

My master's thesis in **ROLE OF INNOVATION ON GROWTH OF MANUFACTURING FIRMS REGISTERED BY THE KENYA ASSOCIATION OF MANUFACTURERS** at Istanbul Gedik University in Turkey. The focus of this thesis is the study of role of innovation on growth of manufacturing firms in Kenya. This is very fascinating topic as it contributes a lot to the innovation and manufacturing firms in Kenya.

August,2022

Ismail Mohamed Ali  
M.Sc. Student

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## **LIST OF ABBREVIATIONS**

<b>APA</b>	American Psychology Association
<b>KAM</b>	Kenya Association of Manufacturers
<b>VIF</b>	Variance Inflation Factor

## **ROLE OF INNOVATION ON GROWTH OF MANUFACTURING FIRMS REGISTERED BY THE KENYA ASSOCIATION OF MANUFACTURERS**

### **ABSTRACT**

This study focused on product, process, marketing and organizational innovation as they relate with growth of the manufacturing firms. The Schumpeterian Theory of Innovation and Entrepreneurship and the diffusion of innovation theory provided anchorage to the study. Descriptive survey design was adopted targeting 38 manufacturing firms as the unit of analysis and the sales and marketing managers and the operations managers from these firms formed the unit of observation. Census was utilized. Primary data was gathered supported by the questionnaire that was tested for validity and reliability. The processing of the data was conducted in a descriptive and inferential manner. It was established that marketing innovation ( $\beta=.696$ ,  $p<0.05$  &  $t>1.96$ ) had the largest and significant effect on growth of the manufacturing firms registered by KAM in Kenya followed by process innovation ( $\beta=.341$ ,  $p<0.05$  &  $t>1.96$ ), organizational innovation ( $\beta=.319$ ,  $p<0.05$  &  $t>1.96$ ) and lastly product innovation ( $\beta=.309$ ,  $p<0.05$  &  $t>1.96$ ). The study concludes the innovation is a significant predictor of the growth of the manufacturing firms registered by KAM. The recommendations include the need for sales and marketing managers to continuously enhance the research and development capability that is critical for new product development. The operations managers of the respective manufacturing firms registered by KAM in Kenya should monitor and review the existing day to day routines and procedures for simplicity. The sales and marketing managers of the manufacturing firms registered by KAM in Kenya need to invest in new sales and marketing techniques to increase the customer base.

**Keywords:** Innovation, growth, manufacturing firms, Kenya Association of Manufacturers, product, process, marketing and organizational

## KENYA ÜRETİCİLER DERNEĞİ TARAFINDAN KAYITLI İMALAT FİRMALARININ BÜYÜMESİNDE İNOVASYONUN ROLÜ

### ÖZET

Bu çalışma, imalat firmalarının büyümesi ile ilgili olarak ürün, süreç, pazarlama ve organizasyonel inovasyona odaklanmıştır. Schumpeter'in İnovasyon ve Girişimcilik Teorisi ve inovasyon teorisinin yayılması, çalışmaya dayanak sağlamıştır. Analiz birimi olarak 38 imalat firmasına yönelik tanımlayıcı anket tasarımı benimsenmiş ve bu firmalardan satış ve pazarlama müdürleri ile operasyon müdürleri gözlem birimini oluşturmuştur. Sayımdan yararlanılmıştır. Birincil veriler, geçerlilik ve güvenilirlik açısından test edilen anketle desteklenerek toplanmıştır. Verilerin işlenmesi tanımlayıcı ve çıkarımsal bir şekilde gerçekleştirilmiştir. Pazarlama inovasyonunun ( $\beta=.696$ ,  $p<0.05$  &  $t>1.96$ ) Kenya'da KAM tarafından kayıtlı imalat firmalarının büyümesi üzerinde en büyük ve anlamlı etkiye sahip olduğu, ardından süreç inovasyonunun ( $\beta=.341$ ,  $p<0.05$ ) olduğu tespit edildi. &  $t>1.96$ ), organizasyonel yenilik ( $\beta=.319$ ,  $p<0.05$  &  $t>1.96$ ) ve son olarak ürün yeniliği ( $\beta=.309$ ,  $p<0.05$  &  $t>1.96$ ). Çalışma, inovasyonun KAM tarafından kayıtlı imalat firmalarının büyümesinin önemli bir yordayıcısı olduğu sonucuna varıyor. Öneriler, satış ve pazarlama yöneticilerinin yeni ürün geliştirme için kritik olan araştırma ve geliştirme kapasitesini sürekli olarak geliştirme ihtiyacını içerir. Kenya'da KAM tarafından kayıtlı ilgili imalat firmalarının operasyon yöneticileri, basitlik için mevcut günlük rutinleri ve prosedürleri izlemeli ve gözden geçirmelidir. KAM'ın Kenya'da kayıtlı olduğu imalat firmalarının satış ve pazarlama müdürlerinin, müşteri tabanını artırmak için yeni satış ve pazarlama tekniklerine yatırım yapması gerekiyor.

**Anahtar Kelimeler:** İnovasyon, büyüme, imalat firmaları, Kenya İmalatçılar Birliği, ürün, süreç, pazarlama ve organizasyon

# **1. INTRODUCTION**

## **1.1 Background to the Study**

Growth is of the goals and objectives that inform existence of the firm and it can be reflected in a general increase in customer base, asset size, branch network and more employment opportunities as well as an expansion in market share (Ayepa, Boohene & Mensah, 2019). Growth is important because it help the firm to meet its underlying objective of maximizing the wealth of its shareholders (Anugwu, Nwosu & Okoli, 2021). Growth helps the firm to exploit new markets and diversify the products and this improves the amount of revenues generated (Depperu, Magnani, Crosato & Liberati, 2021). However, in order for firms to grow, they must constantly remain innovative. Innovation helps firms to come up with new or modified products that satisfy the needs of the customers (Mai, Van-Vu, Bui & Tran, 2019).

Innovation can be categorized into its different types: product, process, marketing and organization. Product innovation arises when significantly improved ort new goods or services have been introduced in the firm (Kiveu, 2017). Product innovation incorporates an improvement in materials, components or specifications of the product. Thus, product innovation can be examined through its two dimensions: new innovations and new products (Tsai, Chang, Lin & Cheng, 2020). Product innovation can be achieved through efforts to launch new products or modification of those goods and services that are already in place to meet the needs of the customers (D'Attoma & Pacei, 2018). Process innovation is a technique of enhancing the level of efficiency in the firm. A firm can embrace process innovation through adoption of new technologies, acquisition of new machines, training of employees and reorganization of the processes (Demeter, Losonci, Keresztély, Major & Boer, 2021). Process innovation arises when significantly improved or new delivery or production method has been implemented in an organization. The implication of process innovation is on unit delivery or production cost in the firm and this may improve the level of quality (Kowo, Akinbola & Akinrinola, 2018).

Marketing innovation is an important step in rejuvenating the position of the firm within its market. Through market innovation, a business enterprise is able to penetrate the markets thus growing the revenues generated (Medrano, Cornejo-Cañamares & Olarte-Pascual, 2020). Marketing innovation involves implementation of new methods of marketing which involve

significant design or packaging of the products, promotion, and placement as well as pricing of the products (Adamua, Hussinb & Ismail, 2020). Marketing innovation covers new sales and marketing techniques adopted by the firm (Ungerman, Dedkova & Gurinova, 2018). Organizational innovation seeks to expand the vision and capability of the firm and leads to the transformation of the firm. Organizational innovations arise when the firm has implemented new organizational methods in the practices of the firm (Alhemairy, HYusoff & AlQershi, 2021). Organizational innovation lays the foundation for the other types of innovation in the firm and it comprises of new techniques of working (Phan, 2019).

Manufacturing firms operate by converting the raw materials through a transformation system into inputs that comprise of the physical products. The role of manufacturing sector towards the growth of the economy cannot be underscored as it is a major driver of industrialization efforts. In Kenya, the manufacturing firms are registered by the Kenya Association of Manufacturers (KAM). The role of KAM is to lobby the interests of the member manufacturing firms in the country. There are 38 manufacturing firms registered by KAM (appendix II) that this study focused on.

## **1.2 Problem Statement**

Innovation is embraced by manufacturing firms to ensure they are as competitive in the industry as possible. Some of the manufacturing firms registered by KAM in Kenya are struggling in order to remain viable for instance the East Africa Portland Cement. The other firms have been forced to close down their operations for instance, Sameer Africa. With this trend, it would not be possible for Kenya to realize Vision 2030 of getting transformed into an industrialized country. Proper growth and viability of the manufacturing sector in Kenya is so critical towards attainment of this vision 2030.

The available studies include Canh, Liem, Thu and Khuong (2019) who focused in the context of Vietnam to explore innovation and firm performance where product and process innovation were found to influence how firms perform. The study by Muharam, Andria and Tosida (2020) was done in Indonesia focusing on innovation and its link with financial performance where a positive link was identified between market and process innovation and the financial performance of the entity. Kapidani and Luci (2019) covered a total of 15 developing countries

exploring of innovation on financial sector development and registered a significant relationship. Locally in Kenya, Kiveu, Namusonge and Muathe (2019) did an examination of innovation and competitiveness where organizational, process and marketing innovation were found to be significant.

The reviewed studies create gaps as some were done in other countries away from Kenya. Other studies related innovation with other concepts like performance and not growth. Thus, in order to fill these gaps, the present study sought to determine the role of innovation on growth of KAM registered manufacturing enterprises.

### **1.3 Research Objectives**

- i. To determine the role of product innovation on growth of KAM registered manufacturing enterprises
- ii. To establish the role of process innovation on growth of KAM registered manufacturing enterprises
- iii. To appraise the role of marketing innovation on growth of KAM registered manufacturing enterprises
- iv. To examine the role of organizational innovation on growth of KAM registered manufacturing enterprises

### **1.4 Significance of the Study**

The study would raise more awareness on the need to adopt innovation or improve on innovation capability among manufacturing firms so as to spur their growth. The study would create raise awareness among sales and marketing managers on the need to develop new products that meet the needs of the customers. The senior management team of the manufacturing firms registered by KAM will be in position to understand how best to leverage innovation for achieving growth of their firms. The study would add to the available knowledge on innovation and the growth of the firm. Through this, future scholars would be able to review literature from this study.



## **2. LITERATURE REVIEW**

### **2.1 Theoretical Review**

The subsequent section detail the theory that was used to anchor the study variables

#### **2.1.1 Schumpeterian Theory of Innovation and Entrepreneurship**

It was Schumpeter (1934) who developed this theory and its main argument is that any entrepreneurial activities in an economy are largely driven by innovation. Through innovation, entrepreneurs are able to generate huge amount of profits from their ventures. However, other competitors may be motivated to enter into the business that is generating huge profits and this will ultimately lower the level of profitability. Entrepreneurs are key providing new ideas which are key towards growth of the firm. This theory argues that innovation drives entrepreneurship which in turn support the growth of the economy of the country. The theory argues that markets and economics are characterized by constant changes and an entrepreneur is regarded as an agent of change and growth within the economy (Sapprasert & Clausen, 2012). Entrepreneurship is largely informed and driven by innovation and entrepreneurs are primarily responsible for combining factor inputs to creating continuous change process. The theory argues that the growth of the economy is shaped and informed by innovation which includes launching of modified or new products and exploitation of new markets. Innovation is perceived as an industrial transformation process where economic structures are transformed to create value (Wijayanto, 2021).

Ferreira and Lisboa (2019) in their study found out innovation to be key in a company's competitive advantage, performance and growth. The study further highlights the key drivers of competitiveness being innovation and entrepreneurship. Malecki and Spigel (2017) underscores the contributions of Schumpetrian theory in contributing new combinations to market by incorporating knowledge , perceived opportunity and a mix of resources to come up with new firms .This gave an opportunity to new firms in exploiting new technologies in the high technology regions. Mehmood and Ahmed (2019) give insight on Schumpeterian theory in the historical and contemporary context which varied with the initially accepted Marshalian theory of entrepreneurship. The study argues that entrepreneurship innovation and continuous business

development, and considers entrepreneurship to be the most important factor in economic development. This theory supported the role played by innovation on driving entrepreneurship that informs the growth of the firm.

### **2.1.2 Diffusion of Innovation Theory**

The proponent of this theory was Rogers (1962) and it provides information on how new knowledge and ideas get to diffuse in a social system. The theory suggests that diffusion is a process where some form of innovation is communicated within the socially established system. The theory argues that there are arrays of factors for instance trialability, complexity, compatibility, observability and relative advantage that influence and shape the rate those new innovations get to diffuse in a system. Individuals are characterized by different willingness when it comes to adoption of new innovations and the percentage of individuals adopting new innovations is believed to follow a normal distribution. The theory argues that diffusion allows the communication of new ideas to participants in a given market. The spread of new ideas is informed by such factors such as the mode of conversation, innovation, market and time at which the product has been introduced (Niederreiter & Riccaboni, 2021). There is different manifestation of diffusion and this will have an effect on product innovation and the time it takes in adoption of new products.

To further understand consumer acceptance of Uber's mobile app, Min & Jeong (2019) analyzed the diffusion of innovation theory. Relative advantages such as compatibility, complexity, observability, and social impact all play a role in technology's diffusion to consumers demonstrating the idea. It is the process that occurs when consumers adopt a new technology, new idea, product or practice or philosophy. (Kaminski J., 2011) Rodgers noted that once a new innovation has been widely adopted by the public and reached a point of saturation, consumers become less concerned about adopting it and using it. Innovators, early adopters, early majority, and laggards are all distinct categories of technology adopters, according to him. This theory was used to anchor the main independent variable being innovation.

## **2.2 Concept of Innovation**

Various studies use vastly diverse definitions of the term "innovation." Innovation, as described by Linder et al. (2003), is the implementation of fresh ideas that will ultimately lead to the creation of value. On the other hand, the primary emphasis of this research is placed on the introduction of innovative goods and procedures that boost both overall profitability and competitiveness in accordance with the requirements and preferences of the target market.

According to Kline and Rosenberg (2010), innovation is difficult to measure because of its complexity, uncertainty, and susceptibility to many different kinds of change. Additionally, they consider innovation to be a series of modifications made to a system, which encompasses not just the hardware but also the market environment, production facilities, and knowledge. According to Kahn, K. B. (2018), innovation as a process pays attention to how it is structured to produce results that include the entire innovation process and a new product development process. According to Kotsemir and Abroskin (2013), innovation has become synonymous with national development, technological advancement, and corporate success. Tiwari (2008) enhances the concept to illustrate that the product, process, marketing method, or organizational strategy must be significantly enhanced or new to the company in order to qualify as an innovation.

Herstad (2018) studied how firms' innovation strategies reflect the density, diversity and international connectedness of the urban settings. The research contends that the observed techniques reflect a sequence of interrelated decisions, each of which can alter the knowledge dynamics of the organization. Doran (2012) examined the various types of innovation in Ireland that serve as complements or replacements in Irish businesses. The empirically based study surveyed Irish enterprises and found four types of innovation activity: product innovation new to the firm, product innovation new to the market, process innovation, and organization innovation. Four types of innovations were subjected to a rigorous test for complementarity and substitutability to determine whether they had a complimentary influence on a company's revenue. The result indicated that there is a strong complementarity between various types of innovation.

The research presented by Holtskog (2017) examines several types of innovation from the point of view of product development in the Norwegian automobile sector. This study followed companies in the automotive sector while they participated in a number of product development projects. It also explored the process by which knowledge is developed and integrated into certain projects in order to better comprehend product development procedures. The study came to the conclusion that knowledge processes are what give companies their competitive advantage. Edwards-Schachter (2018) presents an outline of the most significant categories of innovations that have emerged in recent years. The research focuses attention on the development of a new aspect of innovation that distinguishes it from the type of innovation that occurred throughout the industrial age.

Martin (2016) explains how innovation in the 1960s was mostly focused on manufacturing and technology, needing research and design created by huge companies in their laboratories with patenting being the main focus. An essay by Nelson & Winter (1977) defines innovation as both the act of producing something new and its result, which has a significant impact on the economy and the development of technology. Freeman (2016) characterized invention-related innovation as being fundamental to transformation. in technology advancement and that innovation remains economically irrelevant if not carried into practice. Freeman further asserts that innovation becomes accomplished in an economic sense if it achieves transactional commercialization. Porter 1990, however, maintains a different perspective and thinks that innovation must lead to a concrete product. He describes innovation as a novel approach to carrying out commercially viable tasks.

According to Umpleby (2017) services and social innovations Social innovations are not founded on research and are not primarily driven by technology advancements in design. He sees the creation of social services as a form of social innovation. The first category of innovation is technological innovation, which is focused on research and design and primarily targets the industrial sector, according to Schumpeter's paradigm. Reichstein and Salter (2006) describe the second category of process innovation as new components added to the organization's product or service operations with the goal of obtaining lower costs and higher productivity. Implementation of new or significantly enhanced production methods and techniques is required

for this kind of innovation. Equipment modifications, production changes, or a combination of the two may be used as approaches.

Service innovation is the third type of innovation and includes intangible activities like as logistics and transportation, information and knowledge-based services, food, health care, and education, Goldstein et al. (2016). Service innovation entails innovation in coordinating service systems as well as specialized services. Large assertions regarding the significance of innovation to the financial performance of enterprises have recently been made. According to Baker (2002), companies that are more inventive typically have higher share prices than their less innovative rivals. Innovation also influences how the market values businesses, leading to the conclusion that it has grown greatly over time. Innovation is crucial for businesses in all economic sectors, including those with high and low technology, manufacturing and services, and environments that are changing slowly as well as quickly.

In the current economy, which is driven by innovation, having a solid understanding of how to come up with fantastic ideas has become an imperative necessity for managers. Managers have a responsibility to promote and champion ideas, as well as to assist their businesses in the incorporation of varied viewpoints. This helps to spur creative discoveries and facilitates creative cooperation through the utilization of new technology. Knowledge can be innovated into creative, relevant, and valuable new products, processes, or services through the process of embodiment, combination, and/or synthesis of that knowledge. Doing something in a new way may be considered the simplest definition of innovation. The word "innovation" is one that is frequently used in the world of business, and when it comes to businesses, this term typically refers to anything that is high-risk, expensive, and time-consuming (Costello & Prohaska, 2013). One further way to define innovation is as the introduction of a novel concept, product, or device. It is a state of mind, a method of thinking that looks beyond the here and now and into the foreseeable future. Innovations are essential to businesses, and when applied effectively, they can serve as a method, a strategy, or even a management style (Kuczmarksi, 2003).

The corporate sector places a significant emphasis on innovation because it is a sustainable strategy for creating value and remaining successful in an environment that is increasingly competitive. There is a connection between innovative ideas, new job opportunities, more profits, and improved standards of living. New goods, new materials, new processes, new

services, and new organizations are some of the things that are commonly associated with innovation. There is a wide variety of definitions for innovation, many of which overlap, but there is no single definition that is both obvious and authoritative. Scientists have pointed in the direction of this issue, and if innovation is not given a precise definition, it will be difficult to build methods that are new, Baregheh, etal (2009).

Studies have shown a positive correlation between an environment conducive to creative thinking and innovative problem solving. If the environment at your place of employment is one that encourages creativity, this can help moderate the effects of leadership, individual problem solving, group relations, and innovation. According to the extent and depth to which changes are radical or incremental for the organization, the adjustments employed to adapt the environment can be assessed. Through a succession of ongoing advancements, incremental modifications preserve the organization's overall equilibrium while only affecting one area of the organization. On the other hand, significant adjustments completely alter the organization. Technology advancements like the implementation of computer-integrated manufacturing or product upgrades in the current organizational structure and operational procedures are examples of incremental changes. Technology is likely to advance with significant changes, and the new goods that result will open up new markets.

These days, the importance of innovation seems to be the most talked-about management topic. Because innovation is important to the information-based economy and is at the core of economic transformation, knowledge is essential to understanding how the economy works. Companies innovate to gain a competitive advantage as well as to protect their position in the market. Organizations that have more knowledge do better than those who don't. An organization was thought to be able to sustain a competitive advantage through both price and quality. Preenen & Dhondt (2017) examined whether innovation can be beneficial in promoting labor productivity using company level data collected from different sets of independent companies .The outcome of the study revealed that internal innovations improved labor productivity and the innovation performance of companies .

In the view of Roberts (2007) there is a major difference between innovation and invention. Innovation is learning how to launch and market new products, processes, and new ways of providing consumer value through innovative business models and management systems as

opposed to invention, which is the discovery of things that have never existed before. According to Roberts' definition from 2007, invention is the creation of fresh concepts with the potential to improve something or someone. According to Ruttan (1959), looking at different industries, participating in discussions and meetings, or accessing data that is not generally available to you in your line of work are all ways to come up with new ideas.

Innovation is also defined as the process in which new things come into existence and also the process which transforms an idea. In other words innovation is the process of creating value from ideas and it is about creating social value, changing the world to make it a better place that requires skills based activity to achieve. Creativity in idea generation is the foundation of all innovation. The difference between the two is that whereas innovation is the effective implementation of those ideas, invention is the act of having an idea regarding a service, product, technology, or gadget. A new thing that has never been produced or used before is considered an invention. Therefore, while every innovation is an invention, not all innovations are inventions.

According to definitions, creativity is the process of thinking up fresh concepts, ideas, and objects. It is also the capacity to devise original solutions to issues, Liou & Kwan (2018). The concept of creativity varies depending on the discipline one is engaged in. According to Goller and Bessant (2017), creativity is the transformation of unique ideas into physical objects, while innovation is the realization of these concepts. Creativity is similar to daydreaming about new things, whereas innovation is the realization of such daydreams. In other words, creativity is the capacity to conceive of something distinctive or original, whereas innovation is the actualization of such ideas.

Innovation and new product management have a close relationship. In order to generate new and unique products, organizations require tight teamwork. Additionally, technology is typically associated with innovation. A product that combines existing products with new technologies is also considered an inventive new product (Leenders & Dolfsma, 2016). Innovation is strongly correlated with growth; research indicates that innovation might generate prospects for sustained growth (Denicoló & Zanchettin, 2016). It has been said that innovation is the best way for companies to grow. Innovation has become a buzzword in the last few decades, and business leaders say you need to be more innovative to stay competitive (Sardana, 2016).

Innovation isn't just about getting more knowledge; it's also about learning all the time. Actions had to be taken based on what was known. Innovations seem to be a key part of growth because they open up new markets and bring in more money (Sardana, 2016). Tienken (2013) says that creative thinking can lead to innovation. Creativity is something new and different, and it leads to new ideas and new businesses in a country. Innovations and creativity are both ways of coming up with new ideas (Tienken, 2013).

Innovation and problem-solving go hand in hand; it can be a brand-new approach to a problem or a fresh take on an old one. Innovative thinking involves approaching problems from different angles, taking use of fresh opportunities, or making better use of already available resources. Being a problem-solver by nature frequently results in innovation and fresh thinking (Huebner & Fitchel, 2015). When it comes to a company's revenue, innovation and leadership have shown to be a winning mix (Bock, etal. 2015). According to a study, innovation management has the potential to redefine a firm through the introduction of fresh concepts while also changing an organization. Innovation and fresh ideas can be effectively stimulated through leadership. However, innovation management is still a relatively new concept and is not widely used (Vaccaro & Volberda, 2012). People frequently acquire knowledge of innovation and its characteristics at work or in school. When there is open discussion and an honest exchange of ideas at work, people learns to put their skills into practice and be creative. In higher education, it is customary to demonstrate and discuss new technology while encouraging open-mindedness and debate among the students (Cohn, 2008).

### **2.3 The Multi-dimensions of Innovation**

Scholars believe that innovation truly comes in a variety of forms, regardless of the different definitions that are employed to describe it (Cooper, 1998; Gopalakrishnan & Damanpour, 1992; Utterback, 1996). Cooper (1998) claimed that innovation is a multidimensional notion since he discovered that earlier studies about the adoption of innovation had also revealed a variety of innovation-related features. Technological embedded is likely hardware or any innovated products, whereas content embedded refers to the party that receives the technological innovation embedded. Cooper (1998), on the other hand, observed that there are three categories into which innovation can be divided: administrative or technological, radical or gradual, and product or process (Utterback, 1996). In their studies, many academics have paid close attention



to the two well-known aspects of innovation—technological and administrative (Yang, 2012). In Yang's (2012) proposal, new policies, organizational structures, and procedural changes are categorized as managerial or administrative innovation, whereas new technology, products, and services are deemed to be examples of technological innovation. A further benefit of management or administrative innovation is that it promotes the development and use of fresh concepts and procedures while also honoring the inventiveness of staff members. The managers can demonstrate their dedication to the growth of innovation in a number of ways at first. However, several aspects of an organization, such as its culture, structure, and environment, might have an impact on whether or not organizational or administrative innovation is adopted (Kimberly & Evanisko, 1981; Lin, 2006; Panayides, 2006). As a result, it has been demonstrated that the constructions listed below can be modified in numerous research to gauge how innovative a firm is. This is due to the fact that combining administrative and technological innovation can provide a comprehensive picture of how far the company can innovate, which indirectly demonstrates its success. This has been backed up by numerous academics who have stated that a company must use innovative leadership techniques to achieve higher corporate performance (Busse & Wallenburg, 2011). To sum up, a company's ability to be innovative drives it to create novel solutions to problems, which improve its performance and competitiveness (Tsai & Yang, 2013).

**Table 2.1:** Innovation Types

	1. New technologies
1. Technological innovation	2. New products
	3. New services
Innovation	1. New policies
	2. New procedures
2. Administrative innovation	3. Organizational forms
	4. Encourage expansions
	5. Reward staff's creativity
	6. Exploring best methods to achieve corporate goals

Source: Lin, C. (2006), Yang (2012), Yang, Marlow, and Lu (2009).

## 2.4 Concept of Firm Growth

New and small businesses must expand in order to survive, as growing enterprises are proven to be less susceptible to failure than non-growers (Stam et al., 2006). When the phenomenon of

gazelles, or high-growth firms, was originally identified as those capable of intense size expansions within a small time span, the macroeconomic significance of firm expansion was recognized (Coad, 2009). Empirical studies reveal that only a small percentage of businesspeople are gazelles. However, they make up a disproportionately significant amount of the newly created jobs (Coad 2009). Growing businesses are also more likely to produce innovations, particularly those involving new products (Coad, 2009). Small and medium-sized businesses are the main focus of both scholars and policymakers interested in expansion.

Given that the remaining population either expands slowly or not at all, this interest in high-growth businesses is warranted (Coad, 2009). The majority of gazelles are also youthful, small, and medium-sized businesses (Firms). According to the finding that employment losses are primarily caused by established, large, and non-growing enterprises, age and size are adversely correlated with the dynamics and economic contribution of firms' growth (Acs et al., 2008). The phenomenon of firm growth has drawn study attention since it has been shown that firm expansion and growth are prerequisites for competitive advantage, both at the level of individual enterprises and at the level of the economy as a whole. The provision of recommendations for business management and economic policy, while navigating the dangers and difficulties of attaining expansion, is one of the key goals of this increasingly important research area. But before we can make these suggestions, we must have a deeper understanding of what drives entrepreneurs and how they view growth, what encourages and hinders business development, what potential strategies for business growth are, and how modes of expansion work.

Audretsch (2014) conducted research on the importance of innovation to the growth of a company and provided an in-depth examination of the connection between innovation and the expansion of a company. According to the findings of the study, research and design as well as information spillover are key contributors to the growth and innovation of a firm. The researchers who conducted the study also advocated a multifaceted approach to supporting the growth of firms. In their article, "How a Firm's Growth Changes over Time," Eiriz (2013) discusses how a company's growth might alter over time due to the shifting innovation environment. They divide the development of a company into four distinct stages: start up, expansion, maturity, and diversification, and exit.

When a company expands, it usually does so in terms of sales, employment, profits, or value added. Growth of a company may entail replication or diversification into new markets (such as globalization), and it may happen naturally or as a result of an acquisition. One of the subjects that has received the most attention in economic literature is firm expansion. Numerous justifications emphasize the critical significance of this field. First, company survival and growth are tightly intertwined. Particularly, there is a correlation between firm growth and survival chances. As a result, businesses that grow continuously have a better chance of surviving in the market secondly; there are employment implications of corporate development. A positive growth rate suggests that jobs are being created on the whole, whilst a negative rate suggests that employment is being lost on the whole. The ability of existing businesses and new entrants to grow has a direct impact on both employment creation and job elimination. Thus, it follows that changes in the job landscape inevitably have an impact on government spending plans.

The impact of firm expansion on economic growth is the third factor supporting the significance of firm growth. The growth of active firms will determine whether there are more or fewer backward and forward linkages. When considering an economy as a whole, an increase in company growth may raise its demand for goods and services from other industries, which would result in a rise in a region's economic activity. The economy's dynamism can result in significant growth. On the other side, a decline in a company's workforce may signify or fuel a crisis<sup>3</sup>. Fourth, business growth is a driver of technological development and a means of introducing innovation (Pagano and Schivardi, 2003).

One of the main objectives of governments has been to regulate market concentration in order to prevent the formation of monopolies and oligopolies (Shepherd, 1979). In order to better understand the concentration of firms in a market, an examination of firm growth may be useful. A study of firm growth can also highlight the significance of the selection process once a company has entered the market (Audretsch and Mata, 1995).

With the use of firm growth policies, policymakers may influence key macroeconomic variables and boost employment and economic activity. But because company growth varies widely, it's important to understand the internal and external factors that influence how well a company performs in the market. The effectiveness and impact of public policy will both be improved by

having a thorough understanding of these characteristics. These significant factors have caused a large portion of the literature to concentrate on the business expansion process.

The hypotheses have not, however, come into agreement. These various strategies might be the result of the intricacy inherent in creating the firm, as Correa et al. (2003) pointed out. Classical economic theory, behaviorists, stochastic growth theory, and learning models have all made contributions to our understanding of the causes and impacts of business growth. Highlighting contributions to the literature on stochastic business growth is our area of focus. Numerous papers have attempted to explain the connection between firm growth and company size since Gibrat's study (1931). According to this method, a firm's growth has a consistent likelihood regardless of its starting size. The primary effect, as Simon and Bonini (1958) noted, is that the firm distribution has a skewed tail. As a result, a few numbers of companies will make up the vast majority of the market's businesses while employing the majority of the sector's workforce.

## **2.5 Innovation Challenges Faced by Organizations**

Innovation challenges, no matter how big or small, is important obstacles to get over. There is no business idea or model that will always be popular. In markets that change, it's important to be able to adapt, change, and come up with new solutions. Still, the way a company is set up on the inside is often one of the biggest obstacles to innovation. If a business isn't ready for enablement in terms of its culture, structure, or management, it will do the opposite: discourage and stop. In other words, a business can sometimes be its own biggest problem when it comes to coming up with new ideas.

Current business competitions are unexpected. According to Poorangi (2013), all companies confront significant competition issues, and firms are turning to innovation to stay afloat. According to Farsi (2014), neglecting to innovate causes economic collapse and decreased competitiveness. Senge (2001) say innovation is a basic approach used by a company to achieve sustainable growth and handle the primary difficulties firms face in today's competitive climate, such as greater cost efficiency and producing new products to suit client expectations. According to a research by McEvily et al. (2004) on the role of innovation in fostering competitiveness, increased profitability and productivity are the keys to unlocking many firms' potential. According to Zahra et al. (1999), firms should discover and utilize new business prospects.

Innovative opportunities are a collection of procedures in which actors find, act on, and actualize new market resources and needs to benefit from their economic potential. Stanislawsky (2010) found that many organizations lack new techniques to respond to environmental changes. Organizations must innovate to survive, but their people aren't empowered or motivated. Comtesse (2002) list averting risk, public complacency, lack of appreciation for high-value innovation, provincialism, and limited networks as cultural barriers to innovation. Necadova (2011) recognized the lack of innovation framework tools in the Czech school curriculum, a limited labor force, and a lack of an entrepreneurial mindset as barriers to innovation. Weak access to financing, legal impediments, poor political vision and growth, infrastructure, and intellectual capital hampered innovation, according to Tiwari and Herstatt (2010). Innovation is seen as crucial to organizations' long-term survival, says Van-de-Ven (2008). Despite the benefits listed, firms face hurdles that might spur innovation. Knowledge, resource, technological, legal, policy, and environmental issues exist.

**2.5.1 Knowledge Challenges:** The corporate environment has altered significantly due to the development of telecommunications, information technology, and the internet. The availability of knowledge serves as the cornerstone of economic life and business. The availability of skilled knowledge workers, knowledge assets, and knowledge initiatives is of utmost importance in the creation and expansion of businesses. In terms of innovation, this absence of knowledge assets presents significant difficulties for entrepreneurship both at the corporate and individual levels (Liang, 2002). Competitiveness among businesses is typically based on low prices. Most businesses still rely on labor and capital to run their businesses, which prevents them from reaching operational excellence. They largely ignore value creation through the use of information in favor of gaining greater productivity or economies of scale. Businesses suffer from a lack of knowledge infrastructure, knowledge commercialization, and competent human resources. In this instance, there aren't enough resources at the institution to find, safeguard, and promote intellectual property to the private sector. Since there is a dearth of people with the necessary abilities to bridge the gap between the research and business groups, which can result in innovative ideas, colleges channel out those individuals. Governments must upgrade educational systems from theoretical to providing technical education in order to move past the problems mentioned above. Companies should perform knowledge management duties include obtaining the essential expertise by speaking with suppliers, clients, or coworkers. The

knowledge evaluation should be utilized again to determine the knowledge that is available and needed. After that, evaluation is carried out by internal and external audits, project evaluations, customer satisfaction surveys, or benchmarking.

**2.5.2 Resource Challenges:** It is essential to have a limited budget that will force you to select and/or implement only one or two creative ideas. The majority of large companies fall into this group, but on the other hand, many small businesses are so under-resourced that they are unable to act on or put any of their innovative ideas into practice. Finances, office space, human resources, machinery, and equipment are all examples of resources in this context. In this situation, businesses may have so many brilliant ideas that it is tough to even know where to start. In this situation, a lot of creative ideas appear fantastic at first sight but, upon deeper examination, prove to be absolutely unworkable. There are a few organizational difficulties people have while attempting to put a concept into practice, as well as some strategies people might utilize to their advantage. Businesses may improve their workplaces so that inventive individuals are more welcome, ideas are nurtured, and eventually, better results are achieved. Even if many outstanding ideas rise to the top, not all of them can materialize because many businesses are cash and resource poor, especially in recent years.

**2.5.3 Technological Challenges:** According to Shengbin (2011), the impact of technology choice on innovation success revealed the technological hurdles that firms must overcome in order to innovate. Almost all business models could undergo a revolution because to technology. Most businesses are looking for ways to integrate the available intelligent systems into their operational procedures in order to increase their flexibility, dynamism, productivity, and proactivity. The benefit of technology today differs significantly from what is actually given. Despite technologies that should make development costs lower, businesses continue to report high costs. The lack of sufficient funding, the fact that their organizations are still inventive, and the fact that they are in an environment that is changing quickly all pose challenges to technology in developing nations. Small businesses must improve their flexibility and response time in order to compete with larger rivals. Large corporations have, however, mostly monopolized the study on technology and innovation management.

**2.5.4 Legal and Policy Challenges:** The innovative actions of businesses, industries, and entire economies have been found to be significantly influenced by the regulatory environment. Administrative structure, governmental rules, and public policies that have an impact on how businesses operate will undoubtedly have an impact on how innovatively a company grows, according to OECD (2012). Simply said, if impediments are lowered, the administrative structure will support company entrepreneurship. On the other hand, exorbitant fees and difficult registration procedures may deter business ventures. At a time when the business is most vulnerable, lengthy and expensive business registration processes take a significant amount of time and money away from profitable business operations. When the environment has a lax legal framework, as in the case of less developed nations, rigid laws can actually encourage entrepreneurs to conduct their economic activities in the informal sector (2012). Poor legal framework has the effect of preventing entrepreneurs from taking use of possibilities and safeguards afforded by the law, which could be detrimental to business expansion.

**2.5.5 Environmental Challenges:** The development of creativity is significantly influenced by the outside environment. Enterprises are compelled to hunt for a broad variety of skills and knowledge that is offered by various complimentary sources in order to produce a successful innovation project. According to Enkel et al. (2009), businesses are frequently compelled to work with the outside world in order to broaden their scope of knowledge and experience and also look for financial support for the growth of their innovative ideas. However, if firms don't work with the outside world, innovation will suffer. Additionally, governments play a crucial part in encouraging businesses to enhance their innovation efforts. De Jong and Hippel (2009) noted that government subsidies for R&D and tax credits can help to reduce the cost of innovation. Another way that governments might encourage innovation is by using intellectual property laws to temporarily monopolize innovation-related knowledge for those businesses who qualify. A different perspective on the external environment where demand-side has an impact on innovation has been studied recently is provided by Muscio et al. (2010).

The vital role of fostering demand for innovation should be a top priority for businesses and policymakers. In their study, Muscio et al. (2010) verified findings from prior studies that new technological paradigms result from an increase in demand for innovations-fostering advances. Demand encourages competing businesses to offer alternatives, which directs the evolutionary

process and fosters innovation. However, creative and innovative activities are scarce if demand is low. Second, a business must take advantage of possibilities to service its markets effectively if it is to thrive in a highly competitive global market. Enterprises are forced to engage in less innovative activities as a result of failing to take advantage of the environment.

## **2.6 Innovation and Firm Growth**

Innovation at a firm is defined by Kahn (2018) as the act or process of innovating. He also views innovation as an end result and the way it should be achieved. Researchers Coad, Segarra and Teruel (2016) focused on the connection between innovation and firm growth for businesses of various ages. The study's results showed that young firms' investments in R&D appear to be riskier than those of more mature firms, suggesting some policy implications. Young firms experience larger performance benefits from R&D at the upper quartiles of the growth rate distribution, but face larger declines at the lower quartiles. Spescha and Woerter (2019) explored how the macroeconomic business cycle affects the empirical link between innovation and firm growth. The study found that during a recession, firms with innovations based on R&D activities experience better sales growth than non-innovative firms, which is consistent with the assumption that a recession has a substantial impact on how firms adapt an economy to innovation. The study also shows that during economic booms, innovative firms expand their sales more than non-innovative enterprises. This is because their innovations are based on other, non-R&D innovation activities.

According to Bigliardi, Ferraro, Filippelli and Galati (2020), innovation is essential to corporate growth and development. In their study on the effect of open innovation on firm performance, they found that innovation practices increased the performance of small and medium-sized businesses if they were able to implement the innovations in their business operations despite the risks associated with new innovations. A study on the impact of innovation on the performance of businesses was conducted by Al Naqbia, et al (2020). The study found that there is a favorable correlation between innovation and company performance. China and Turkey companies that embraced globalization's new ideas had stronger sales growth than those that were hesitant to do so.



The study done by Ndesaulwa and Kikula (2016) in Tanzania on the impacts of innovation on the performance of small and medium enterprises revealed that innovation imparts positively on the efficiency and performance of SMEs. The SMEs that adopt new innovation an increase in their efficiency and growth categorized by increased sales output. Another study done by Ramadani and Ibraimi (2017) on the impact of knowledge spillovers and innovation on firm performance revealed that information spillover and innovation contribute positively to a company's growth. Additional innovation activities are endogenously tied to a company's performance and growth. In Kenya, Chege and Wang (2020) did a study on the impact of information technology innovation on firm performance in Kenya and established that technology innovation influences the performance of firm positively.

### **2.6.1 Product Innovation**

The study conducted among Taiwan firms by Tsai, Chang, Lin and Cheng (2020) focused on product innovation and its link with performance. It was established that product innovation and firm performance are positively linked with each other in significant terms. While focusing on firms in Europe, D'Attoma and Pacei (2018) demonstrated that high degree of product innovation is positively and significantly connected with the rate of profitability of an entity. Another study conducted by Nataya and Sutanto (2018) indicated that product innovation has positive and significant connection with service innovation and marketing performance of the firm. In a study conducted by Dibia, Nto, Unanam and Bassey (2019) in Nigeria, it emerged that innovation and customer retention are directly linked with each other.

Yoshioka-Kobayashi, Miyanoshita and Kanama (2020) did an empirical study whose focus was on product innovation in firms that manufacture food in Japan. The study noted that product innovation is largely reflected in packaging practices. The study by Onikoyi (2017) in Nigeria showed that product innovation has a huge and significant implication on performance of the firm. Furthermore, the study noted that the quality or creativity of the process of innovation exerts a direct and significant effect on product and firm performance. In Kenya, Odongo and Omwanza (2018) shared that product innovation help the firm to grow its revenue streams thus contributing towards performance and growth.

### **2.6.2 Process Innovation**

The study by Widya-Hasuti et al (2018) focused on process innovation and performance of an entity. The study shared existence of a direct and significant interplay between process innovation and the need for firm to perform. Demeter, Losonci, Keresztély, Major and Boer (2021) looked at process innovation and its implication on performance with specific focus on Hungary. It emerged that innovative firms are characterized by superior performance and process innovation had the greatest effect on how firms performed. In a study by Sintset Kenfac, Nekoumanesh and Yang (2013), the main focus was on process innovation and how it impacts on how firms perform with focus on Sweden. It was discovered that applying process innovation has a direct and significant implication on customer and financial performance of an entity.

Another study by Kowo, Akinbola and Akinrinola (2018) in Nigeria indicated that process innovation and organizational performance are significantly connected with each other. Locally in Kenya, Omesa (2015) analyzed the process innovation and its link with financial performance. Leveraging a case study approach, this study showed that process innovation significantly enhances financial performance of the entity. Munyiva and Wachira (2021) in process innovation and performance also observed existence of a positive relationship. This means that any effort made to enhance process innovation would boost performance of the firm. Peter, Munga and Nzili (2021) also noted that process innovation significantly enhances performance of the entity.

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### **2.6.3 Marketing Innovation**

The study conducted by Medrano, Cornejo-Cañamares and Olarte-Pascual (2020) among firms in Spain shared that marketing innovation and orientation to the environment are significantly linked to each other. The study in Nigeria by Adamua, Hussinb and Ismailc (2017) indicated that marketing innovation and the level of efficiency of the firm are significantly connected with each other. Among commercial banks in Jordan, Alsamydai, Alnawas and Yousif (2010) said that marketing innovation and competitive advantage are significantly linked with each other. Ungerman, Dedkova and Gurinova (2018) observed that marketing innovation and effectiveness

of the firm are linked with each other. In Germany, Grimpe, Sofka, Bhargava and Chatterjee (2017) noted that marketing innovation significantly shapes performance of the firm.

Sprong et al. (2021) in their literature review discovered that there has been a shift towards marketing innovation with focus being on the mergence, distributed agency and non-linearity. With a focus on Nigeria, Adamua, Hussinb and Ismailc (2020) said that marketing innovation and the level of efficiency of the firm are significantly linked with each other. Gupta, Malhotra, Czinkota and Foroudi (2016) were of the opinion that marketing innovation and competitiveness of the firm have a significant link with each other. Kolapo, Mokuolu, Dada and Adejayan (2021) focused on commercial banks within Nigeria context arguing that marketing innovation and satisfaction of the customers are two interrelated variables. Nawafleh and Al-Khattab (2019) noted that marketing innovation and customer satisfaction are significantly associated with each other. Quaye and Mensah (2019) observed that product packaging and design innovation are key practices when it comes to market innovation.

Purchase and Volery (2020) review on marketing innovation found out marketing innovation to be significant in developing new distribution channels, branding strategies, communication types and pricing mechanisms. The study further mentions that marketing innovation plays an important role in the growth of firms. D'Attoma and Ieva (2020) in their study whether marketing innovation matter, established that innovation in product packaging and design was positively related to innovation success. The study also found out that innovation in promotion is negatively related to innovation success and it is positively related to innovation failure. In Kenya, a comparative study conducted in Kenya and Nigeria by Egbetokun, Mendi and Mudida (2016) on complimentary firm level strategies found out that marketing innovation do not appear to be complementary in innovation in both Kenya and Nigeria.

Quaye and Mensah (2018) in their study on marketing innovation and sustainable competitive advantage of manufacturing SMEs in Ghana established that product design and packaging innovations, promotion innovations promote a sustainable market advantage for SMEs .Further, new product designs and packages were found to be the major drivers of sustainable market advantage. Kiveu, Namusonge and Muathe (2019) studied the effect of marketing innovation on a firm's competitiveness .It came out that marketing innovation had a positive relation with a firm's competitiveness. The study covered 284 SMEs situated in Nairobi City, with the findings

indicating that 97% of the SMEs in Nairobi were innovating their marketing strategies to increase their competitiveness.

#### **2.6.4 Organizational Innovation**

Demircioglu (2016) defines organizational innovation as the adoption of a new idea, new product, new service, a new process, new technology or a new strategy. Phan (2019) analyzed whether organizational innovations always results to better performance of the entity using Vietnam as a point of reference. It emerged that innovation in the practices and innovation at the place of work are significant drivers of performance of the firm. Salima and Sulaiman (2011) evaluated organizational innovation and its implication on performance with emphasis on Malaysia. It was disclosed that innovation and performance of the firm are significantly related with each other.

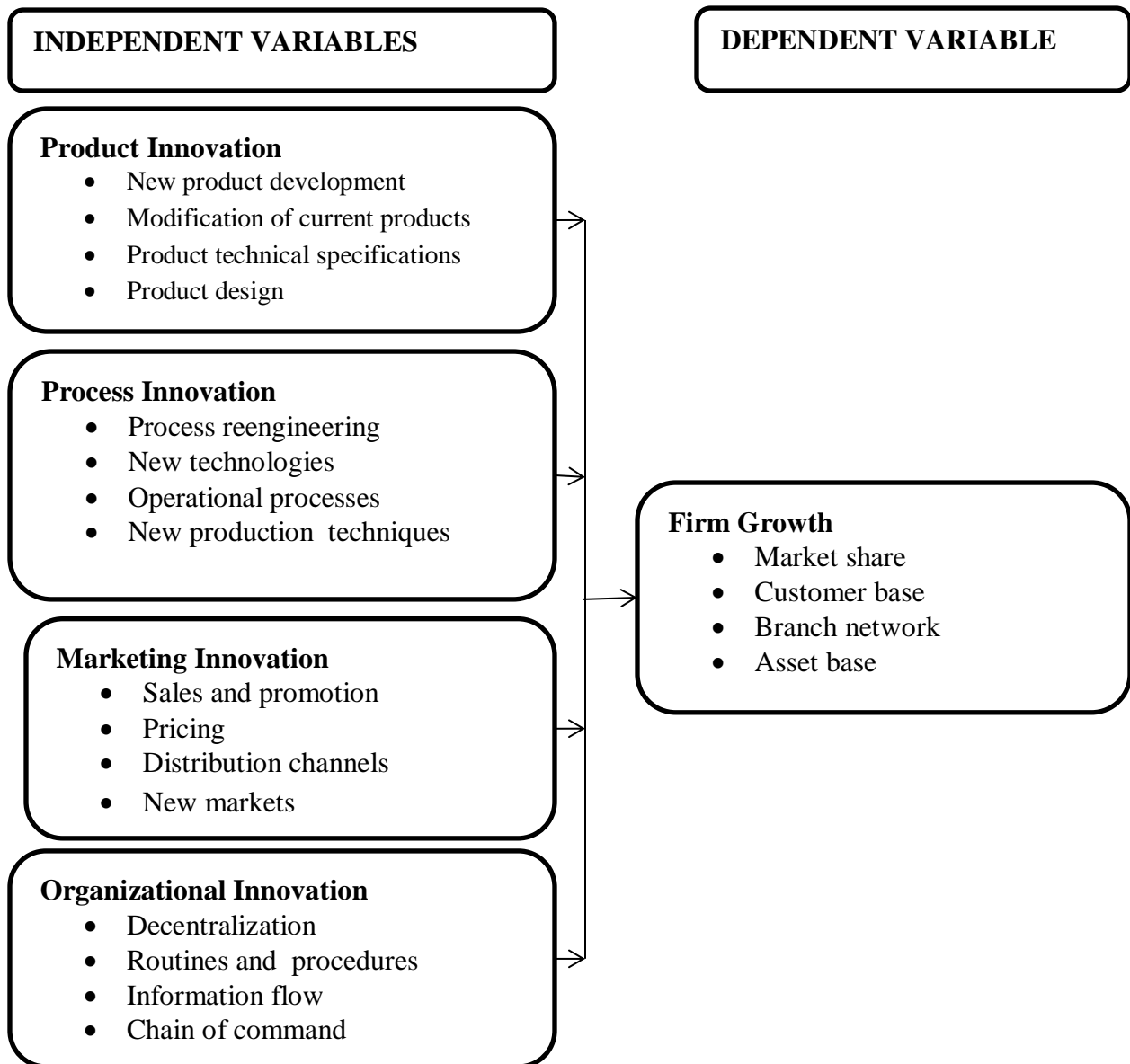
Makimi (2015) analyzed organizational innovation and how it interacts with performance of the entity. The study discovered that organizational innovation significantly drives firm performance. Chen, Wang and Huang (2020) shared that organizational innovation is an engine that drives growth of the firm. Alhemairy, Yusoff and Qershi (2021) said that the practices of organizational innovation have a direct and indirect implication on development of human capital in an organization. The study observed that any effort to establish and cultivate an innovation culture in an organization would improve the level of knowledge and skills of the employees. Alharbi, Jamil, Mahmood and Shaharoun (2019) suggested that organizational innovation enhances performance of the firm.

The study conducted by Benadate and Kising'u (2019) shared that organizational innovation and competitive advantage of the firm are significantly linked with each other. Leon (2020) suggested that an improvement in innovation require firms to focus on issues linked with organizational learning and transformational leadership. Mohamad, Kamaruddin and Purwanto (2015) did a study in Indonesia that disclosed that organizational innovation has direct interplay with product and process innovation capability in the firm. Farouk *et al* (2016) in their study done in the UAE on the mediating role of organizational innovation found out that organizational innovation mediates fully organizational human resource performance link. Their

findings conclude that with the availability of innovation strategy, human resources management mediates the relationship between innovation strategy and organizational innovation.

## 2.7 Conceptual Framework

Conceptual framework is a structure that is used to illustrate the variables together with how they are operationalized. The main critical role played by a conceptual framework is to inform the development of the study tools as the indicators therein guide the statements on the data gathering tool. Figure 2.1 is the conceptual framework of the inquiry.



**Figure 2.1:** Conceptual Framework

### **3. RESEARCH METHODOLOGY**

#### **3.1 Research Design**

Research design is an outline that informs collection and analysis of data in a study to draw findings. It is an overall plan that determines how the study is to be conducted to meet the formulated objectives. Descriptive survey design was adopted in this inquiry. Descriptive design will help in providing a description of innovation and the growth of the manufacturing firms registered by KAM. A survey design allowed the research to target and covers all the manufacturing firms registered by KAM.

#### **3.2 Target Population and Sample**

Population is a group of individual that provides the foundation for determining an appropriate sample of the study. Target population is a group of individual that permit generalization of the findings of the study. There are 38 manufacturing firms registered by KAM in Kenya and these formed the unit of analysis. The researcher targeted the sales and marketing manager and an operations manager each from these firms totaling to 76 respondents as the unit of observation. Since the population is relatively small and can easily be accessible, census was used and thus no sampling was conducted.

#### **3.3 Data Collection**

The study collected data from first hand sources as supported by the questionnaire (appendix I). The questionnaire underwent structuring to cover six sections that adequately covered the study variables. A Likert scale was selected and utilized to ease the process of analysis as it only permitted standardized responses alone.

#### **3.4 Validity and Reliability**

Validity is reflected in the manner that the study tool portrays what it is designed to do so. This study adopted content validity. In testing for validity, the questionnaire was shared with an advisor who reviewed its contents and gave the suggestions for improvement. Besides the advisor, the questionnaire was also shared with experts in the field of innovation who equally reviewed it and made suggestions that were incorporated in the final version.

Reliable tools are used to indicate results that are consistent. Cronbach Alpha Coefficients derived from the evidence of the pilot study were adopted to predict reliability. These values were interpreted at the value 0.7 taken as the threshold.

### 3.5 Data Analysis

The analysis of the data helped to generate relevant insights for informing policy and decision making. The values of descriptive statistics covering means and standard deviations were generated to provide a description of the data and variables. In drawing deeper insights about the data, factor analysis, correlation and regression analysis were utilized. The following was the regression model adopted in this study:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

3.1

Where Y is firm growth

$\beta_0$  is the constant

$\beta_{1..n}$  are regression beta coefficients

$X_1$  is Product Innovation

$X_2$  is Marketing Innovation

$X_4$  is Organizational Innovation

$\varepsilon$  is the error term

The p-values from regression analysis were interpreted at 5% level of significance.

#### 3.5.1 Diagnostic Tests

These covered normality and multicollinearity test. Multicollinearity is a situation where at least one of the independent variable is related with each other. The values of Variance of Inflation Factor (VIF) were generated and appropriately interpreted to test for multicollinearity in the data.

Normality test is done to ascertain if the sampled data is drawn from population that is normally distributed. In testing for normality, Kolmogorov –Smirnov test was used. The p-values were interpreted taking the 5% level of significance. Any  $p < 0.05$  was a violation of the normality assumption.



### **3.6 Ethical Considerations**

The responses from the participants were kept anonymous to enhance confidentiality. There was informed consent where respondents who were not willing to participate in the study were not forced to do so. Assurance was provided to the participants that all information shared was only to be utilized for academic purpose. All the information used in the study was appropriately cited through the APA style. This was meant to avoid possible plagiarism.

## 4. FINDINGS AND DISCUSSIONS

### 4.1 Response Rate

From the 76 questionnaires that were administered to the marketing and operations managers of the respective manufacturing firms, 55 of them were dully filled up and returned to the researcher. This was equivalent to a response rate of 72.4% and this was in sync with Babbie (2010).

### 4.2 Reliability Results

Reliability of the scale used in the study was determined from the pilot study questionnaires that were used to compute the values of Cronbach Alpha Coefficients. This was regarded as an internal measure of consistency. Table 4.1 gives a breakdown of the findings.

**Table 4.1:** Response Rate

<b>Variable</b>	<b>No of items</b>	<b>Cronbach Alpha Coefficient</b>
Growth	4	.765
Product innovation	4	.875
Process innovation	4	.773
Marketing innovation	4	.793
Organizational innovation	4	.877

The results in Table 4.1 indicate that all the variables have Cronbach Alpha coefficient values of above 0.7, a clear indication that the scale used in design of the questionnaire for this study was reliable.

### 4.3 Descriptive Statistics

This section is set out to detail the findings of descriptive statistics supported by means and standard deviations.

#### 4.3.1 Firm Growth

Table 4.2 gives an overview of the descriptive statistics on firm growth as a dependent variable of the study.

**Table 4.2: Firm Growth**

	<b>Mean</b>	<b>Std. Dev</b>
The market share of your firm has remained steady	3.78	0.69
Your firm has grown its customer base	3.71	1.08
The firm has opened up more branches	3.71	0.83
This firm has grown its assets	3.80	0.70
<b>Average</b>	<b>3.75</b>	<b>0.83</b>

Table 4.2 gives an average of 3.75, which means that respondents agreed on the fact that their respective firms were experiencing growth. New and small businesses must expand in order to survive, as growing enterprises are proven to be less susceptible to failure than non-growers (Stam et al., 2006). When the phenomenon of gazelles, or high-growth firms, was originally identified as those capable of intense size expansions within a small time span, the macroeconomic significance of firm expansion was recognized (Coad, 2009). Empirical studies reveal that only a small percentage of businesspeople are gazelles. However, they make up a disproportionately significant amount of the newly created jobs (Coad 2009). Growing businesses are also more likely to produce innovations, particularly those involving new products (Coad, 2009). Small and medium-sized businesses are the main focus of both scholars and policymakers interested in expansion.

Given that the remaining population either expands slowly or not at all, this interest in high-growth businesses is warranted (Coad, 2009). The majority of gazelles are also youthful, small, and medium-sized businesses (Firms). According to the finding that employment losses are primarily caused by established, large, and non-growing enterprises, age and size are adversely correlated with the dynamics and economic contribution of firms' growth (Acs et al., 2008). The phenomenon of firm growth has drawn study attention since it has been shown that firm expansion and growth are prerequisites for competitive advantage, both at the level of individual enterprises and at the level of the economy as a whole. The provision of recommendations for business management and economic policy, while navigating the dangers and difficulties of attaining expansion, is one of the key goals of this increasingly important research area. But before we can make these suggestions, we must have a deeper understanding of what drives entrepreneurs and how they view growth, what encourages and hinders business development, what potential strategies for business growth are, and how modes of expansion work.

Audretsch (2014) conducted research on the importance of innovation to the growth of a company and provided an in-depth examination of the connection between innovation and the expansion of a company. According to the findings of the study, research and design as well as information spillover are key contributors to the growth and innovation of a firm. The researchers who conducted the study also advocated a multifaceted approach to supporting the growth of firms. In their article, "How a Firm's Growth Changes over Time," Eiriz (2013) discusses how a company's growth might alter over time due to the shifting innovation environment. They divide the development of a company into four distinct stages: start up, expansion, maturity, and diversification, and exit.

When a company expands, it usually does so in terms of sales, employment, profits, or value added. Growth of a company may entail replication or diversification into new markets (such as globalization), and it may happen naturally or as a result of an acquisition. One of the subjects that has received the most attention in economic literature is firm expansion. Numerous justifications emphasize the critical significance of this field. First, company survival and growth are tightly intertwined. Particularly, there is a correlation between firm growth and survival chances. As a result, businesses that grow continuously have a better chance of surviving in the market secondly; there are employment implications of corporate development. A positive growth rate suggests that jobs are being created on the whole, whilst a negative rate suggests that employment is being lost on the whole. The ability of existing businesses and new entrants to grow has a direct impact on both employment creation and job elimination. Thus, it follows that changes in the job landscape inevitably have an impact on government spending plans.

The impact of firm expansion on economic growth is the third factor supporting the significance of firm growth. The growth of active firms will determine whether there are more or fewer backward and forward linkages. When considering an economy as a whole, an increase in company growth may raise its demand for goods and services from other industries, which would result in a rise in a region's economic activity. The economy's dynamism can result in significant growth. On the other side, a decline in a company's workforce may signify or fuel a crisis<sup>3</sup>. Fourth, business growth is a driver of technological development and a means of introducing innovation (Pagano and Schivardi, 2003).

One of the main objectives of governments has been to regulate market concentration in order to prevent the formation of monopolies and oligopolies (Shepherd, 1979). In order to better understand the concentration of firms in a market, an examination of firm growth may be useful. A study of firm growth can also highlight the significance of the selection process once a company has entered the market (Audretsch and Mata, 1995).

With the use of firm growth policies, policymakers may influence key macroeconomic variables and boost employment and economic activity. But because company growth varies widely, it's important to understand the internal and external factors that influence how well a company performs in the market. The effectiveness and impact of public policy will both be improved by having a thorough understanding of these characteristics. These significant factors have caused a large portion of the literature to concentrate on the business expansion process.

The hypotheses have not, however, come into agreement. These various strategies might be the result of the intricacy inherent in creating the firm, as Correa et al. (2003) pointed out. Classical economic theory, behaviorists, stochastic growth theory, and learning models have all made contributions to our understanding of the causes and impacts of business growth. Highlighting contributions to the literature on stochastic business growth is our area of focus. Numerous papers have attempted to explain the connection between firm growth and company size since Gibrat's study (1931). According to this method, a firm's growth has a consistent likelihood regardless of its starting size. The primary effect, as Simon and Bonini (1958) noted, is that the firm distribution has a skewed tail. As a result, a few numbers of companies will make up the vast majority of the market's businesses while employing the majority of the sector's workforce.

### 4.3.2 Product Innovation

Table 4.3 is an overview of the evidence

**Table 4.3:** Product Innovation

<b>Statements on product innovation</b>	<b>Mean</b>	<b>Std. Dev</b>
New products have been developed in your firm	3.91	0.62
Your firm has modified some of its existing products	3.51	0.88
New products are developed based on technical specifications	3.75	0.89
Products are designed based on customer needs in your firm	3.76	0.88
<b>Average</b>	<b>3.73</b>	<b>0.82</b>

The results in Table 4.3 show the value of average as 3.73, an indication that respondents agreed on the fact that their firms practiced product innovation. Product innovation incorporates an improvement in materials, components or specifications of the product. Thus, product innovation can be examined through its two dimensions: new innovations and new products (Tsai, Chang, Lin & Cheng, 2020). Product innovation can be achieved through efforts to launch new products or modification of those goods and services that are already in place to meet the needs of the customers (D'Attoma & Pacei, 2018).

#### 4.3.3 Process Innovation

Consider Table 4.4 shows descriptive statistics of process innovation.

**Table 4.4:** Process Innovation

<b>Statements on process innovation</b>	<b>Mean</b>	<b>Std. Dev</b>
Process reengineering has been adopted in this firm	3.80	0.73
The firm has invested in new technologies	3.82	0.92
The firm has adopted new operational processes	3.62	0.89
New techniques have been adopted in production of goods	3.84	0.79
<b>Average</b>	<b>3.77</b>	<b>0.83</b>

The value of average from Table 4.4 is given as 3.77, which implies that respondents were in agreement that their firms practiced process innovation. Process innovation is a technique of enhancing the level of efficiency in the firm. A firm can embrace process innovation through adoption of new technologies, acquisition of new machines, training of employees and reorganization of the processes (Demeter, Losonci, Keresztély, Major & Boer, 2021). Process innovation arises when significantly improved or new delivery or production method has been implemented in an organization. The implication of process innovation is on unit delivery or production cost in the firm and this may improve the level of quality (Kowo, Akinbola & Akinrinola, 2018).

#### 4.3.4 Marketing Innovation

**Table 4.5:** Marketing Innovation, summary of descriptive statistics

<b>Statements on Technological Innovation</b>	<b>Mean</b>	<b>Std. Dev</b>
The firm has invested in new product promotion channels	3.87	0.64
The price of products are constantly reviewed in your firm	3.45	1.05
The firm has invested in new distribution channels	3.75	1.28
The firm is seeking to explore new markets	3.60	1.05
<b>Average</b>	<b>3.67</b>	<b>1.00</b>

The value of average from Table 4.5 is given as 3.67. This is interpreted to imply that marketing innovation had been adopted by the studied manufacturing firms in Kenya. Marketing innovation is an important step in rejuvenating the position of the firm within its market. Through market innovation, a business enterprise is able to penetrate the markets thus growing the revenues generated (Medrano, Cornejo-Cañamares & Olarte-Pascual, 2020). Marketing innovation involves implementation of new methods of marketing which involve significant design or packaging of the products, promotion, and placement as well as pricing of the products (Adamua, Hussinb & Ismailc, 2020). Marketing innovation covers new sales and marketing techniques adopted by the firm (Ungerma, Dedkova & Gurinova, 2018). Marketing innovation is an important step in rejuvenating the position of the firm within its market. Through market innovation, a business enterprise is able to penetrate the markets thus growing the revenues generated. Marketing innovation involves implementation of new methods of marketing which involve significant design or packaging of the products, promotion, and placement as well as pricing of the products. Marketing innovation covers new sales and marketing techniques adopted by the firm.

#### 4.3.5 Organizational Innovation

Table 4.6 is an overview of the descriptive statistics on organizational innovation as a variable used in the study.

**Table 4.6:** Organizational Innovation

<b>Statements on organizational innovation</b>	<b>Mean</b>	<b>Std. Dev</b>
The firm has decentralized the decision-making process	3.95	0.87
The existing routines and procedures are constantly modified in this firm	3.53	0.94
Decentralization has improved the flow of information in your firm	3.44	0.76
New chains of command have been established in your firm	3.42	0.74
<b>Average</b>	<b>3.58</b>	<b>0.83</b>

Table 4.6 gives the value of average as 3.58, which imply that organizational innovation was valued in the studied firms. Organizational innovation seeks to expand the vision and capability of the firm and leads to the transformation of the firm. Organizational innovations arise when the firm has implemented new organizational methods in the practices of the firm (Alhemairy, HYusoff & AlQersh, 2021). Organizational innovation lays the foundation for the other types of innovation in the firm and it comprises of new techniques of working (Phan, 2019).

Therefore, in a nutshell, process innovation was highly practiced by the studied firms (M=3.77) followed by product innovation (M=3.73), marketing innovation (M=3.67) and lastly organizational innovation (M=3.58). Various studies use vastly diverse definitions of the term "innovation." Innovation, as described by Linder et al. (2003), is the implementation of fresh ideas that will ultimately lead to the creation of value. On the other hand, the primary emphasis of this research is placed on the introduction of innovative goods and procedures that boost both overall profitability and competitiveness in accordance with the requirements and preferences of the target market. According to Kline and Rosenberg (2010), innovation is difficult to measure because of its complexity, uncertainty, and susceptibility to many different kinds of change. Additionally, they consider innovation to be a series of modifications made to a system, which encompasses not just the hardware but also the market environment, production facilities, and knowledge. According to Kahn, K. B. (2018), innovation as a process pays attention to how it is structured to produce results that include the entire innovation process and a new product development process. According to Kotsemir and Abroskin (2013), innovation has become synonymous with national development, technological advancement, and corporate success. Tiwari (2008) enhances the concept to illustrate that the product, process, marketing method, or organizational strategy must be significantly enhanced or new to the company in order to qualify as an innovation.

Herstad (2018) studied how firms' innovation strategies reflect the density, diversity and international connectedness of the urban settings. The research contends that the observed techniques reflect a sequence of interrelated decisions, each of which can alter the knowledge dynamics of the organization. Doran (2012) examined the various types of innovation in Ireland that serve as complements or replacements in Irish businesses. The empirically based study surveyed Irish enterprises and found four types of innovation activity: product innovation new to the firm, product innovation new to the market, process innovation, and organization innovation. Four types of innovations were subjected to a rigorous test for complementarity and substitutability to determine whether they had a complimentary influence on a company's revenue. The result indicated that there is a strong complementarity between various types of innovation.



The research presented by Holtskog (2017) examines several types of innovation from the point of view of product development in the Norwegian automobile sector. This study followed companies in the automotive sector while they participated in a number of product development projects. It also explored the process by which knowledge is developed and integrated into certain projects in order to better comprehend product development procedures. The study came to the conclusion that knowledge processes are what give companies their competitive advantage. Edwards-Schachter (2018) presents an outline of the most significant categories of innovations that have emerged in recent years. The research focuses attention on the development of a new aspect of innovation that distinguishes it from the type of innovation that occurred throughout the industrial age.

Martin (2016) explains how innovation in the 1960s was mostly focused on manufacturing and technology, needing research and design created by huge companies in their laboratories with patenting being the main focus. An essay by Nelson & Winter (1977) defines innovation as both the act of producing something new and its result, which has a significant impact on the economy and the development of technology. Freeman (2016) characterized invention-related innovation as being fundamental to transformation. in technology advancement and that innovation remains economically irrelevant if not carried into practice. Freeman further asserts that innovation becomes accomplished in an economic sense if it achieves transactional commercialization. Porter 1990, however, maintains a different perspective and thinks that innovation must lead to a concrete product. He describes innovation as a novel approach to carrying out commercially viable tasks.

According to Umpleby (2017) services and social innovations Social innovations are not founded on research and are not primarily driven by technology advancements in design. He sees the creation of social services as a form of social innovation. The first category of innovation is technological innovation, which is focused on research and design and primarily targets the industrial sector, according to Schumpeter's paradigm. Reichstein and Salter (2006) describe the second category of process innovation as new components added to the organization's product or service operations with the goal of obtaining lower costs and higher productivity. Implementation of new or significantly enhanced production methods and techniques is required

for this kind of innovation. Equipment modifications, production changes, or a combination of the two may be used as approaches.

Service innovation is the third type of innovation and includes intangible activities like as logistics and transportation, information and knowledge-based services, food, health care, and education, Goldstein et al. (2016). Service innovation entails innovation in coordinating service systems as well as specialized services. Large assertions regarding the significance of innovation to the financial performance of enterprises have recently been made. According to Baker (2002), companies that are more inventive typically have higher share prices than their less innovative rivals. Innovation also influences how the market values businesses, leading to the conclusion that it has grown greatly over time. Innovation is crucial for businesses in all economic sectors, including those with high and low technology, manufacturing and services, and environments that are changing slowly as well as quickly.

In the current economy, which is driven by innovation, having a solid understanding of how to come up with fantastic ideas has become an imperative necessity for managers. Managers have a responsibility to promote and champion ideas, as well as to assist their businesses in the incorporation of varied viewpoints. This helps to spur creative discoveries and facilitates creative cooperation through the utilization of new technology. Knowledge can be innovated into creative, relevant, and valuable new products, processes, or services through the process of embodiment, combination, and/or synthesis of that knowledge. Doing something in a new way may be considered the simplest definition of innovation. The word "innovation" is one that is frequently used in the world of business, and when it comes to businesses, this term typically refers to anything that is high-risk, expensive, and time-consuming (Costello & Prohaska, 2013). One further way to define innovation is as the introduction of a novel concept, product, or device. It is a state of mind, a method of thinking that looks beyond the here and now and into the foreseeable future. Innovations are essential to businesses, and when applied effectively, they can serve as a method, a strategy, or even a management style (Kuczmarksi, 2003).

The corporate sector places a significant emphasis on innovation because it is a sustainable strategy for creating value and remaining successful in an environment that is increasingly competitive. There is a connection between innovative ideas, new job opportunities, more profits, and improved standards of living. New goods, new materials, new processes, new

services, and new organizations are some of the things that are commonly associated with innovation. There is a wide variety of definitions for innovation, many of which overlap, but there is no single definition that is both obvious and authoritative. Scientists have pointed in the direction of this issue, and if innovation is not given a precise definition, it will be difficult to build methods that are new, Baregheh, et al (2009).

Studies have shown a positive correlation between an environment conducive to creative thinking and innovative problem solving. If the environment at your place of employment is one that encourages creativity, this can help moderate the effects of leadership, individual problem solving, group relations, and innovation. According to the extent and depth to which changes are radical or incremental for the organization, the adjustments employed to adapt the environment can be assessed. Through a succession of ongoing advancements, incremental modifications preserve the organization's overall equilibrium while only affecting one area of the organization. On the other hand, significant adjustments completely alter the organization. Technology advancements like the implementation of computer-integrated manufacturing or product upgrades in the current organizational structure and operational procedures are examples of incremental changes. Technology is likely to advance with significant changes, and the new goods that result will open up new markets.

These days, the importance of innovation seems to be the most talked-about management topic. Because innovation is important to the information-based economy and is at the core of economic transformation, knowledge is essential to understanding how the economy works. Companies innovate to gain a competitive advantage as well as to protect their position in the market. Organizations that have more knowledge do better than those who don't. An organization was thought to be able to sustain a competitive advantage through both price and quality. Preenen & Dhondt (2017) examined whether innovation can be beneficial in promoting labor productivity using company level data collected from different sets of independent companies. The outcome of the study revealed that internal innovations improved labor productivity and the innovation performance of companies.

In the view of Roberts (2007) there is a major difference between innovation and invention. Innovation is learning how to launch and market new products, processes, and new ways of providing consumer value through innovative business models and management systems as

opposed to invention, which is the discovery of things that have never existed before. According to Roberts' definition from 2007, invention is the creation of fresh concepts with the potential to improve something or someone. According to Ruttan (1959), looking at different industries, participating in discussions and meetings, or accessing data that is not generally available to you in your line of work are all ways to come up with new ideas.

Innovation is also defined as the process in which new things come into existence and also the process which transforms an idea. In other words innovation is the process of creating value from ideas and it is about creating social value, changing the world to make it a better place that requires skills based activity to achieve. Creativity in idea generation is the foundation of all innovation. The difference between the two is that whereas innovation is the effective implementation of those ideas, invention is the act of having an idea regarding a service, product, technology, or gadget. A new thing that has never been produced or used before is considered an invention. Therefore, while every innovation is an invention, not all innovations are inventions.

According to definitions, creativity is the process of thinking up fresh concepts, ideas, and objects. It is also the capacity to devise original solutions to issues, Liou & Kwan (2018). The concept of creativity varies depending on the discipline one is engaged in. According to Goller and Bessant (2017), creativity is the transformation of unique ideas into physical objects, while innovation is the realization of these concepts. Creativity is similar to daydreaming about new things, whereas innovation is the realization of such daydreams. In other words, creativity is the capacity to conceive of something distinctive or original, whereas innovation is the actualization of such ideas.

Innovation and new product management have a close relationship. In order to generate new and unique products, organizations require tight teamwork. Additionally, technology is typically associated with innovation. A product that combines existing products with new technologies is also considered an inventive new product (Leenders & Dolfsma, 2016). Innovation is strongly correlated with growth; research indicates that innovation might generate prospects for sustained growth (Denicoló & Zanchettin, 2016). It has been said that innovation is the best way for companies to grow. Innovation has become a buzzword in the last few decades, and business leaders say you need to be more innovative to stay competitive (Sardana, 2016). Innovation isn't just about getting more knowledge; it's also about learning all the time. Actions had to be taken

based on what was known. Innovations seem to be a key part of growth because they open up new markets and bring in more money (Sardana, 2016). Tienken (2013) says that creative thinking can lead to innovation. Creativity is something new and different, and it leads to new ideas and new businesses in a country. Innovations and creativity are both ways of coming up with new ideas (Tienken, 2013).

Innovation and problem-solving go hand in hand; it can be a brand-new approach to a problem or a fresh take on an old one. Innovative thinking involves approaching problems from different angles, taking use of fresh opportunities, or making better use of already available resources. Being a problem-solver by nature frequently results in innovation and fresh thinking (Huebner & Fitchel, 2015). When it comes to a company's revenue, innovation and leadership have shown to be a winning mix (Bock, etal. 2015). According to a study, innovation management has the potential to redefine a firm through the introduction of fresh concepts while also changing an organization. Innovation and fresh ideas can be effectively stimulated through leadership. However, innovation management is still a relatively new concept and is not widely used (Vaccaro & Volberda, 2012). People frequently acquire knowledge of innovation and its characteristics at work or in school. When there is open discussion and an honest exchange of ideas at work, people learns to put their skills into practice and be creative. In higher education, it is customary to demonstrate and discuss new technology while encouraging open-mindedness and debate among the students (Cohn, 2008).

#### **4.4 Diagnostic Tests**

The subsequent section is an outline of the results:

##### **4.4.1 Multicollinearity Test**

Multicollinearity test was meant to determine if any of the independent variable had a link with each other and VIFs were utilized as Tabulated in 4.7.

**Table 4.7:** Multicollinearity Test

	Collinearity Statistics	
	Tolerance	VIF
Product innovation	.937	1.067
Process innovation	.828	1.208
Marketing innovation	.817	1.224
Organizational innovation	.925	1.081
<b>Mean</b>	<b>.877</b>	<b>1.145</b>

Table 4.7 gives the mean VIF value as 1.145, with all the respective values falling within the range of 1-10. This is an indication of absence of multicollinearity in the data thus its suitability for carrying out regression analysis.

#### 4.4.2 Normality Test

Normality was conducted to test if the data of the study is normally distributed. This was done by use of Kolmogorov-Smirno and Shapiro-Wilk as summarized in Table 4.8.

**Table 4.8:** Normality Test

	Kolmogorov-Smirnov <sup>b</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Firm growth	.268	5	.200*	.806	5	.090
Product innovation	.238	6	.200*	.945	6	.700
Process innovation	.226	19	.061	.917	19	.098
Marketing innovation	.294	11	.069	.882	11	.112
Organizational innovation	.197	5	.200	.943	5	.685

Table 4.8 gives the p-values of the respective variables under Kolmogorov-Smirnov and Shapiro-Wilk to be above 0.05. This is an indication that the data used in the study was normally distributed.

#### 4.5 Factor Analysis

Factor analysis was conducted to extract key factors as far as innovation and firm growth is concerned. The findings were determined and presented as shown in the subsequent sections.

Table 4.9 is an overview of the findings on communalities.

**Table 4.9: Communalities**

	<b>Initial</b>	<b>Extraction</b>
New products have been developed in your firm	1.000	.767
Your firm has modified some of its existing products	1.000	.566
New products are developed based on technical specifications	1.000	.674
Products are designed based on customer needs in your firm	1.000	.727
Process reengineering has been adopted in this firm	1.000	.700
The firm has invested in new technologies	1.000	.581
The firm has adopted new operational processes	1.000	.697
New techniques have been adopted in production of goods	1.000	.770
The firm has invested in new product promotion channels	1.000	.938
The price of products are constantly reviewed in your firm	1.000	.972
The firm has invested in new distribution channels	1.000	.878
The firm is seeking to explore new markets	1.000	.940
The firm has decentralized the decision making process	1.000	.528
The existing routines and procedures are constantly modified in this firm	1.000	.775
Decentralization has improved the flow of information in your firm	1.000	.581
Ne chains of command have been established in your firm	1.000	.571

The findings in Table 4.9 indicate that all the elements of innovation had communalities above 0.5, an indication that all of them were retained for further analysis with the results as documented in the subsequent sections. Table 4.10 is a breakdown of total variance explained.

**Table 4.10: Total Variance Explained**

<b>Component</b>	<b>Initial Eigenvalues</b>			<b>Extraction Sums of Squared Loadings</b>		
	<b>Total</b>	<b>% of Variance</b>	<b>Cumulative %</b>	<b>Total</b>	<b>% of Variance</b>	<b>Cumulative %</b>
1	4.195	26.216	26.216	4.195	26.216	26.216
2	2.819	17.617	43.833	2.819	17.617	43.833
3	1.814	11.338	55.172	1.814	11.338	55.172
4	1.703	10.644	65.815	1.703	10.644	65.815
5	1.133	7.084	72.899	1.133	7.084	72.899
6	.905	5.659	78.558			
7	.774	4.840	83.398			
8	.714	4.465	87.863			
9	.548	3.426	91.289			
10	.433	2.708	93.997			
11	.369	2.307	96.304			
12	.225	1.408	97.712			
13	.197	1.230	98.942			
14	.142	.887	99.829			
15	.021	.130	99.959			
16	.007	.041	100.000			

Table 4.10 is an overview of the findings on total variance explained. From the results, all the constructs of innovation cumulatively explained 72.899% variation in growth of manufacturing firms in Kenya.

## 4.6 Inferential Statistics

The findings are as summarized in the subsequent sections.

### 4.6.1 Correlation Matrix

Correlation analysis evidence tabulated in 4.11

**Table 4.11:** Correlation Matrix

		<b>Firm Growth</b>	<b>Product Innovation</b>	<b>Process Innovation</b>	<b>Marketing Innovation</b>	<b>Organizational Innovation</b>
Firm Growth	Pearson Correlation	1				
Product Innovation	Pearson Correlation	.260	1			
Process Innovation	Pearson Correlation	.215	.090	1		
Marketing Innovation	Pearson Correlation	.845	.239	.242	1	
Organizational Innovation	Pearson Correlation	.796	.182	.296	.928	1

The findings in Table 4.11 show that while marketing innovation ( $r=.845$ ) and organizational innovation ( $r=.796$ ) have strong and positive relationship with the growth of manufacturing firms registered by KAM in Kenya, product innovation ( $r=.260$ ) and process innovation ( $r=.215$ ) have a weak but positive correlation. These findings are empirically supported by Nataya and Sutanto (2018) indicated that product innovation has positive and significant connection with service innovation and marketing performance of the firm. Dibie, Nto, Unanam and Bassey (2019) noted that innovation and customer retention are directly linked with each other. Yoshioka-Kobayashi, Miyano-shita and Kanama (2020) noted that product innovation is largely reflected in packaging practices. Onikoyi (2017) showed that product innovation has a huge and significant implication on performance of the firm. Odongo and Omwanza (2018) shared that product



innovation help the firm to grow its revenue streams thus contributing towards performance and growth. Widya-Hasuti, Mardani, Streimikiene, Sharifara and Cavallaro (2018) shared existence of a direct and significant interplay between process innovation and the need for firm to perform. Demeter, Losonci, Keresztély, Major and Boer (2021) established that innovative firms are characterized by superior performance and process innovation had the greatest effect on how firms performed. Sintset Kenfac, Nekoumanesh and Yang (2013), discovered that applying process innovation has a direct and significant implication on customer and financial performance of an entity. Kowo, Akinbola and Akinrinola (2018) indicated that process innovation and organizational performance are significantly connected with each other. Omesa (2015) showed that process innovation significantly enhances financial performance of the entity. Peter, Munga and Nzili (2021) noted that process innovation significantly enhances performance of the entity. Medrano, Cornejo-Cañamares and Olarte-Pascual (2020) shared that marketing innovation and orientation to the environment are significantly linked to each other. The study in Nigeria by Adamua, Hussinb and Ismailc (2017) indicated that marketing innovation and the level of efficiency of the firm are significantly connected with each other. Alsamydai, Alnawas and Yousif (2010) said that marketing innovation and competitive advantage are significantly linked with each other. Ungerman, Dedkova and Gurinova (2018) observed that marketing innovation and effectiveness of the firm are linked with each other. Grimpe, Sofka, Bhargava and Chatterjee (2017) noted that marketing innovation significantly shapes performance of the firm. Adamua, Hussinb and Ismailc (2020) said that marketing innovation and the level of efficiency of the firm are significantly linked with each other. Gupta, Malhotra, Czinkota and Foroudi (2016) were of the opinion that marketing innovation and competitiveness of the firm have a significant link with each other. Kolapo, Mokuolu, Dada and Adejayan (2021) said that marketing innovation and satisfaction of the customers are two interrelated variables. Nawafleh and Al-Khattab (2019) noted that marketing innovation and customer satisfaction are significantly associated with each other. Quaye and Mensah (2019) observed that product packaging and design innovation are key practices when it comes to market innovation. Phan (2019) observed that innovation in the practices and innovation at the place of work are significant drivers of performance of the firm. Salima and Sulaiman (2011) disclosed that innovation and performance of the firm are significantly related with each other. Makimi (2015) discovered that organizational innovation significantly drives firm performance.

Chen, Wang and Huang (2020) shared that organizational innovation is an engine that drives growth of the firm. Alhemairy, HYusoff and AlQershi (2021) said that the practices of organizational innovation have a direct and indirect implication on development of human capital in an organization. Alharbi, Jamil, Mahmood and Shaharoun (2019) suggested that organizational innovation enhances performance of the firm. Benadate and Kising'u (2019) shared that organizational innovation and competitive advantage of the firm are significantly linked with each other. Leon (2020) suggested that an improvement in innovation require firms to focus on issues linked with organizational learning and transformational leadership. This means that innovation directly impacts on the growth of the manufacturing firms registered by KAM in Kenya.

#### 4.6.2 Regression Results

Consider evidence in Table 4.12.

**Table 4.12:** Model Summary

Model	R	R square	Adjusted R square	Std. Error of the estimate
1	.858*	.736	.715	1.12961

The results from Table 4.12 show the value of R square as .736, which imply that 73.6% change in growth of the manufacturing firms registered by KAM in Kenya is explained by innovation. Table 4.13 gives the beta coefficients and significance determined through p-values.

**Table 4.13: Coefficients and Significance**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	6.448	2.079		3.102	.003
Product Innovation	.309	.108	.375	2.876	.006
Process Innovation	.341	.166	.259	2.052	.045
Marketing Innovation	.696	.164	.844	4.237	.000
Organizational Innovation	.319	.155	.281	2.065	.044

The results in Table 4.13 show that marketing innovation ( $\beta=.696$ ,  $p<0.05$  &  $t>1.96$ ) had the largest and significant effect on growth of the manufacturing firms registered by KAM in Kenya followed by process innovation ( $\beta=.341$ ,  $p<0.05$  &  $t>1.96$ ), organizational innovation ( $\beta=.319$ ,  $p<0.05$  &  $t>1.96$ ) and lastly product innovation ( $\beta=.309$ ,  $p<0.05$  &  $t>1.96$ ). These findings are consistent with Tsai, Chang, Lin and Cheng (2020) who established that product innovation and

firm performance are positively linked with each other in significant terms. D'Attoma and Pacei (2018) demonstrated that high degree of product innovation is positively and significantly connected with the rate of profitability of an entity. Nataya and Sutanto (2018) indicated that product innovation has positive and significant connection with service innovation and marketing performance of the firm. Dibia, Nto, Unanam and Bassey (2019) noted that innovation and customer retention are directly linked with each other. Yoshioka-Kobayashi, Miyanoshita and Kanama (2020) noted that product innovation is largely reflected in packaging practices. Onikoyi (2017) showed that product innovation has a huge and significant implication on performance of the firm. Odongo and Omwanza (2018) shared that product innovation help the firm to grow its revenue streams thus contributing towards performance and growth.

Widya-Hasuti, Mardani, Streimikiene, Sharifara and Cavallaro (2018) shared existence of a direct and significant interplay between process innovation and the need for firm to perform. Demeter, Losonci, Keresztély, Major and Boer (2021) established that innovative firms are characterized by superior performance and process innovation had the greatest effect on how firms performed. Sintset Kenfac, Nekoumanesh and Yang (2013), discovered that applying process innovation has a direct and significant implication on customer and financial performance of an entity. Kowo, Akinbola and Akinrinola (2018) indicated that process innovation and organizational performance are significantly connected with each other. Omesa (2015) showed that process innovation significantly enhances financial performance of the entity. Peter, Munga and Nzili (2021) noted that process innovation significantly enhances performance of the entity.

Medrano, Cornejo-Cañamares and Olarte-Pascual (2020) shared that marketing innovation and orientation to the environment are significantly linked to each other. The study in Nigeria by Adamua, Hussinb and Ismailc (2017) indicated that marketing innovation and the level of efficiency of the firm are significantly connected with each other. Alsamydai, Alnawas and Yousif (2010) said that marketing innovation and competitive advantage are significantly linked with each other. Ungerman, Dedkova and Gurinova (2018) observed that marketing innovation and effectiveness of the firm are linked with each other. Grimpe, Sofka, Bhargava and Chatterjee (2017) noted that marketing innovation significantly shapes performance of the firm. Adamua, Hussinb and Ismailc (2020) said that marketing innovation and the level of efficiency

of the firm are significantly linked with each other. Gupta, Malhotra, Czinkota and Foroudi (2016) were of the opinion that marketing innovation and competitiveness of the firm have a significant link with each other. Kolapo, Mokuolu, Dada and Adejayan (2021) said that marketing innovation and satisfaction of the customers are two interrelated variables. Nawafleh and Al-Khattab (2019) noted that marketing innovation and customer satisfaction are significantly associated with each other. Quaye and Mensah (2019) observed that product packaging and design innovation are key practices when it comes to market innovation.

Phan (2019) observed that innovation in the practices and innovation at the place of work are significant drivers of performance of the firm. Salima and Sulaiman (2011) disclosed that innovation and performance of the firm are significantly related with each other. Makimi (2015) discovered that organizational innovation significantly drives firm performance. Chen, Wang and Huang (2020) shared that organizational innovation is an engine that drives growth of the firm. Alhemairy, HYusoff and AlQershhi (2021) said that the practices of organizational innovation have a direct and indirect implication on development of human capital in an organization. Alharbi, Jamil, Mahmood and Shaharoun (2019) suggested that organizational innovation enhances performance of the firm. Benadate and Kising'u (2019) shared that organizational innovation and competitive advantage of the firm are significantly linked with each other. Leon (2020) suggested that an improvement in innovation require firms to focus on issues linked with organizational learning and transformational leadership.

The study has demonstrated that innovative firms encounter a number of challenges. These include knowledge challenges, resource challenges, technological challenges, legal and policy challenges as well as environmental challenges. Businesses suffer from a lack of knowledge infrastructure, knowledge commercialization, and competent human resources. In this instance, there aren't enough resources at the institution to find, safeguard, and promote intellectual property to the private sector. internal and external audits, project evaluations, customer satisfaction surveys, or benchmarking. Finances, office space, human resources, machinery, and equipment are all examples of resources in this context. In this situation, businesses may have so many brilliant ideas that it is tough to even know where to start. In this situation, a lot of creative ideas appear fantastic at first sight but, upon deeper examination, prove to be absolutely unworkable. Despite technologies that should make development costs lower, businesses

continue to report high costs. The lack of sufficient funding, the fact that their organizations are still inventive, and the fact that they are in an environment that is changing quickly all pose challenges to technology in developing nations.

At a time when the business is most vulnerable, lengthy and expensive business registration processes take a significant amount of time and money away from profitable business operations. When the environment has a lax legal framework, as in the case of less developed nations, rigid laws can actually encourage entrepreneurs to conduct their economic activities in the informal. Poor legal framework has the effect of preventing entrepreneurs from taking use of possibilities and safeguards afforded by the law, which could be detrimental to business expansion. The development of creativity is significantly influenced by the outside environment. Enterprises are compelled to hunt for a broad variety of skills and knowledge that is offered by various complimentary sources in order to produce a successful innovation project.

## **5. SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Summary**

The broad aim of this study was to establish the effect of innovation on growth of manufacturing firms registered by KAM in Kenya. Based on correlation results, it was noted that innovation has a positive correlation with the growth of these manufacturing firms. From regression analysis, the study established that innovation is a significant predictor of the growth of the manufacturing firms registered by KAM in Kenya. From the results, it was established that process innovation was highly practiced by the studied firms (M=3.77) followed by product innovation (M=3.73), marketing innovation (M=3.67) and lastly organizational innovation (M=3.58). Based on correlation analysis, marketing innovation ( $\beta=.696$ ,  $p<0.05$  &  $t>1.96$ ) had the largest and significant contribution towards the growth of the manufacturing firms registered by KAM in Kenya followed by process innovation ( $\beta=.341$ ,  $p<0.05$  &  $t>1.96$ ), organizational innovation ( $\beta=.319$ ,  $p<0.05$  &  $t>1.96$ ) and lastly product innovation ( $\beta=.309$ ,  $p<0.05$  &  $t>1.96$ ).

### **5.2 Conclusion**

Growth is one of the underlying objectives that inform existence and operation of the firm. Firms need to expand through growth in order to survive, as growing enterprises are proven to be less susceptible to failure than non-growers. Growth of the firm is a multidimensional incidence that can occur from within or outside the enterprise. Thus, a firm can undergo external or internal growth. Growth allows firms to exploit new markets and serve diverse customer needs and this contributes to more profits to the firm. Firms that strive to grow should remain innovative. Innovation help firms to develop new products while modifying the existing goods and services such that they are well aligned with the needs of the customers. Innovation allows firms to enhance their processes and existing systems and procedures so as to command a larger market share. Innovation is a key driver of growth of the firm. Innovation can allow the firm to explore new and emerging markets and this would increase revenue inflow hence growth.

There are several aspects of innovation that are critical in the growth endeavors of the firm; these include marketing innovation, process innovation, organizational innovation and product innovation. This implies that in order for manufacturing firms to grow, they need to exploit new markets, come up with new processes, revamp their existing structures and systems and develop

new products that are aligned with the needs, interests and preferences of the consumers. By doing all these, firms will be able to generate supernormal profits that would sustain the growth efforts. This is well supported by the Schumpeterian theory of innovation and entrepreneurship whose key argument is that innovation drive entrepreneurial activities in an economy which in turn allow firms to generate greater profits. It is against this background of increased profits that firms are able to grow to other locations both internally and externally.

Marketing innovation is an important step in rejuvenating the position of the firm within its market. Through market innovation, a business enterprise is able to penetrate the markets thus growing the revenues generated. Marketing innovation involves implementation of new methods of marketing which involve significant design or packaging of the products, promotion, and placement as well as pricing of the products. Marketing innovation covers new sales and marketing techniques adopted by the firm. Process innovation is a technique of enhancing the level of efficiency in the firm. A firm can embrace process innovation through adoption of new technologies, acquisition of new machines, training of employees and reorganization. Process innovation arises when significantly improved or new delivery or production method has been implemented in an organization. The implication of process innovation is on unit delivery or production cost in the firm and this may improve the level of quality.

Organizational innovation seeks to expand the vision and capability of the firm and leads to the transformation of the firm. Organizational innovations arise when the firm has implemented new organizational methods in the practices of the firm. Organizational innovation lays the foundation for the other types of innovation in the firm and it comprises of new techniques of working. Product innovation arises when significantly improved or new goods or services have been introduced in the firm. Product innovation incorporates an improvement in materials, components or specifications of the product. Thus, product innovation can be examined through its two dimensions: new innovations and new products. Product innovation can be achieved through efforts to launch new products or modification of those goods and services that are already in place to meet the needs of the customers.

### **5.3 Recommendations**

From the foregoing discussions, the study suggests the following recommendations:

- i. The sales and marketing managers of the respective manufacturing firms registered by KAM in Kenya should continuously enhance the research and development capability that is critical for new product development.
- ii. The operations managers of the respective manufacturing firms registered by KAM in Kenya should monitor and review the existing day to day routines and procedures for simplicity
- iii. The sales and marketing managers of the manufacturing firms registered by KAM in Kenya need to invest in new sales and marketing techniques to increase the customer base



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**APPENDICES**

**APPENDIX I: Questionnaire**

*Kindly provide the responses that are applicable by (√) in the provided spaces*

**SECTION A: DEMOGRAPHIC INFORMATION**

1. Kindly specify the period you have worked with your organization

- Less 2 years
- 3-5 years
- 6-9 years
- More than 10 years

2. Please, indicate your gender

- Male
- Female
- Other.....

3. Kindly indicate your highest level of education

- Certificate
- Diploma
- Degree
- Post graduate degree
- Other.....

**SECTION B: FIRM GROWTH**

4. Kindly indicate the extent of your agreement with each of the following statements on growth of your firm. Use the following scale of 1-5, where 1=strongly disagree, 2=disagree, 3=undecided, 4=agree and 5=strongly agree.

	1	2	3	4	5
The market share of your firm has remained steady					
Your firm has grown its customer base					
The firm has opened up more branches					
This firm has grown its assets					



### SECTION C: PRODUCT INNOVATION

5. Kindly indicate the extent of your agreement with each of the following statements on product innovation. Use the following scale of 1-5, where 1=strongly disagree, 2=disagree, 3=undecided, 4=agree and 5=strongly agree

Statements on product innovation	1	2	3	4	5
New products have been developed in your firm					
Your firm has modified some of its existing products					
New products are developed based on technical specifications					
Products are designed based on customer needs in your firm					

### SECTION D: PROCESS INNOVATION

6. Kindly indicate the extent of your agreement with each of the following statements on Process Innovation. Use the following scale of 1-5, where 1=strongly disagree, 2=disagree, 3=undecided, 4=agree and 5=strongly agree

Statements on process innovation	1	2	3	4	5
Process reengineering has been adopted in this firm					
The firm has invested in new technologies					
The firm has adopted new operational processes					
New techniques have been adopted in production of goods					

### SECTION E: MARKETING INNOVATION

7. Kindly indicate the extent of your agreement with each of the following statements on marketing Innovation. Use the following scale of 1-5, where 1=strongly disagree, 2=disagree, 3=undecided, 4=agree and 5=strongly agree

Statements on Technological Innovation	1	2	3	4	5
The firm has invested in new product promotion channels					
The price of products are constantly reviewed in your firm					
The firm has invested in new distribution channels					
The firm is seeking to explore new markets					

## SECTION F: ORGANIZATIONAL INNOVATION

8. Kindly indicate the extent of your agreement with each of the following statements on organizational innovation. Use the following scale of 1-5, where 1=strongly disagree, 2=disagree, 3=undecided, 4=agree and 5=strongly agree

<b>Statements on organizational innovation</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
The firm has decentralized the decision making process					
The existing routines and procedures are constantly modified in this firm					
Decentralization has improved the flow of information in your firm					
New chains of command have been established in your firm					

## APPENDIX II: List of KAM Manufacturing Firms

1. Baumann Company Limited
2. B.O.C Kenya Ltd
3. British American Tobacco Kenya
4. Carbacid Investment Ltd
5. East Africa Breweries Limited
6. Eveready East Africa Limited
7. Kenya Orchards Limited
8. Mumias Sugar Company
9. Marshalls (E.A.) Ltd
10. Unga Group Limited
11. British American Tobacco
12. Unilever Kenya
13. Brooke Bond Kenya
14. EA Portland Cement Company France
15. Carnaud Metalbox
16. George Williamson
17. Rhone Poulenc Kenya
18. Cadbury
19. Nestle Foods
20. Elida Ponds Kenya
21. Teita Estate
22. Kapchorua Tea Company
23. Henkel Polymer Co
24. PZ Cussons
25. GlaxoSmithKline beechnam
26. Birch Investments
27. Indigo Garments
28. Jar Kenya
29. California Link EPZ
30. Kenya Knit Garments

31. Golden Light
32. Indu Farm
33. Ivee Aqua
34. Nor brook Africa
35. East-African Breweries
36. Coca-Cola US
37. Bamburi Cement
38. Johnsons & Johnsons

Source: KAM (2022)

# RESUME

**Ismail Mohamed Ali**

## Summary

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Strong knowledge of object-oriented programming and application development tools such as java python. Known as a self-starter, team player and multitasker-strive to consistently exceed expectation.

## Skill Highlights

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- Project management
- Strong decision maker
- Database management
- Graphic design
- Innovative
- Service-focused

## Experience

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### **App Developer 2019**

**AXE ICT, Mogadishu**

- Cooperate with designers to create clean interfaces and simple, intuitive interactions and experiences.
- Develop project concepts and maintain optimal workflow.
- Work with senior developer to manage large, complex design projects for corporate clients.

## Education

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Bachelor of Science: **Computer application-** 2018

**Osmani university hyd**

**Master of Graduate Education Institute, Engineering Management – 2022**

**Gedik university IST**

## LANGUAGES

English

Arabic

## Certifications

CCNA certificate

Programming Languages: **Java, HTML5, PYTHON, CSS, SQL, N+.**