AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND ENTREPRENEURIAL DEVELOPMENT

THE IMPACT OF TECHNOLOGICAL INNOVATION ON THE GROWTH OF AN ORGANIZATION: A CASE STUDY OF UNILEVER GHANA LIMITED

BY

DANIEL APPAU

2022

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(7201790054)

A DISSERTATION IN THE DEPARTMENT OF MANAGEMENT STUDIES EDUCATION, FACULTY OF BUSINESS EDUCATION, SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (HUMAN RESOURCE AND ORGANIZATIONAL BEHAVIOUR) IN THE AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND ENTREPRENEURIAL DEVELOPMENT

NOVEMBER, 2022

DECLARATION

STUDENT'S DECLARATION

I hereby declare that this project report is the result of my own original research and that no part of it has been presented for another master's degree in this university or elsewhere, except for quotations and information from other sources which have been duly acknowledged.

Signature: ……. Date: ……

DANIEL APPAU

SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this project report was supervised in accordance with the guidelines on supervision of the project reports laid down by the Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development, Kumasi.

Signature: …… Date: …….

DR. VICTORIA MENSAH

ACKNOWLEDGEMENT

I thank the almighty GOD for making this dream a reality, May His Name be praise. First of all, I am very thankful to my supervisor, Dr. Victoria Mensah. I really appreciate the restraint and cooperation she showed to me during this study. My thanks are also due to all Lecturers who in diverse ways assisted me to accomplish this project report, and to all those who handled me in the academic courses in the Master of Administration Human Resource programme. I want to express my sincere gratitude to my parents Mr. Anthony Nana Apau and Mrs. Rose Apau for the encouragement and love they gave me. Finally, I am very grateful to my brothers, Emmanuel Apau and Samuel Ankomah who advised me to pursue this programme, I say may GOD bless you.

DEDICATION

This work is dedicated to my parents, Mr. Anthony Nana Apau and Mrs. Rose Apau.

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ABSTRACT

The study examined the impact of technological innovation on the growth of an organization, citing Unilever Ghana Limited, Kumasi as a case study. The descriptive survey design was used for the study. The population of the study was all the members of staff of Unilever Ghana Limited, Kumasi. Purposive sampling technique was used to select one hundred and fifteen respondents for the study. Questionnaire was the main instrument used. Data were statistically analysed using means, standard deviations, Pearson product correlation coefficient and analysis of variance. The study found that the level of implementation of technological innovation practices in Unilever Ghana Limited, Kumasi to attaining excellence was high. The study brought to light that there was a significant improvement in the firm's responsiveness, followed, asset efficiency utilization, reliability, flexibility, productivity and cost reduction. The study indicated a statistically significant and positive relationship between technological innovation practices and organizational performance. Technological innovation practice was found to impact significantly and positively on organizational performance of Unilever Ghana Limited, Kumasi. The study concluded that the application of technological innovation among firms in Ghana cannot be describe as a total approach. It is recommended that companies should train their employees so that they can master new innovations. Similar research could be carried out focusing on the public sector.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In a globally competitive environment that is constantly changing, the inability of established firms to come up with breakthrough technological innovations that will help them operate effectively is a truism today (Davila, 2014). Industries around the world have grown to be highly competitive in the twenty-first century (Tushman & Nadler, 2016). According to Bank (2013), the success or otherwise of any discerning organization in this world of deregulated economies and competitive market depend largely on its ability to strategically outwit her competitors. The search for competitive advantage has led to the recognition of innovation as a vital ingredient for survival and profitability in this information age (Odumeru, 2013).

To this point, many organizations have adopted technologically innovative approaches to their operations to improve organizational performance in this fast-growing world of business. Alpkan and Ergun (2005) claim that the increasingly competitive business environment has made it imperative for organizations to put in place systems and processes that will guarantee appreciable organizational performance in the interest of its investors. Outwitting competitors is informed by ability to deliver offering better than competitors in the market and this also depend on the ability to continually improve on the quality of goods and services being offered.

According to Tushman and Nadler (2016), consumers' demand changes quickly as well as the organization environments change also quickly because business cannot survive in the market without changes, therefore changes are must for the companies to survive in the market. To stay alive in the intense competition it is hard for businesses and must bring changes and start some advance operation management practices which is effective for the

organization (Hung, 2007). According to Seo and Chae (2016), technological innovation refers to "the implementation of an idea for a new product or a new service or the introduction of new elements in an organization's production process or service operation. Since 2010, over 28 countries have submitted to technological innovations (Technovation), this makes global changes around the world (Palmer & Kaplan, 2017).

Today, most of the innovations are limited with developed countries like USA, Japan and Europe while developing countries are still behind in the field of innovation and management of technology (Sabrahmanya, 2014). But it is also becoming a subject for rapid progress and development in developing countries (Freeman, 2014). Technological change in developing countries, particularly in Ghana, is not only about innovating at the frontier, but also about adapting existing products and processes to achieve higher levels of productivity as applicable to their local contexts (Sattari, 2013). In this process, the ability of local firms and enterprises to access technological know – how is fundamental to shaping their ability to provide products and services, both of the kind that are essential to improve living standards, and that could also promote growth and competitiveness (Sattari, 2013). Quirós and Justino (2016) postulate that performance is a measure of input and output analysis and measure with which input conversion into output help to achieve set organizational goals. Most importantly therefore, these organizations lack technological innovation capability. Innovation capability is the skill and knowledge needed to effectively absorb, master and improve existing technologies and create new ones (Guan & Ma, 2013).

According to Simons (2013), technological innovation plays a very important role in providing unique products and services, creating more value for organizations and defining barriers to entry for new competitors. To this end, several solutions have been developed to ensure that desired organizational outcomes are achieved despite the dynamics of

competition (Odumeru, 2013). Studies on innovation suggest that organization's technological innovation plays a crucial role on firm performance and competitiveness (Wilson & Gilligan, 2012; Simons, 2013).

Moreover, organizational performance can be strategically measured among several dimensions through the firm's technological innovation capabilities (Yann, et al. 2014). Technological innovation is part of strategy implementation that enhances organization performance through increased expansion and reduced risks (Drucker, 2011). Advancement techniques are key in enhanced execution among numerous organizations and are reflected by expanded productivity and overall industry development (Palmer & Kaplan, 2007). Yilrnaz, Alpkan and Ergun (2015) also recognize technological innovations as critical enablers for organization's performance by creating value in the undeniably unpredictable and quickly evolving environment. According to Bawuah (2020), a Ghanaian firm's ability to publicize and sell products on the basis of understanding customer needs, compensation situation, costs and benefits and the acceptance of innovation is lacking. Opoku-Agyemang and Lamina mention that firms in Ghana lack the ability to identify internal strengths and weaknesses, and external opportunities and threats, formulate plans in accordance with corporate vision and mission and acclimatize the plan to implementation.

According to Domfe (2021), many business firms in Ghana have undertaken massive reforms through session papers and government task forces to make them more effective, efficient m the performance of their mandate and to limit the financial burden of the agencies on the public coffers. Forces of change that have had an immense impact on the performance of business firms include mainly technological advancement (Oyeyinka, 2019). Research demonstrates that a significant number of firms need appropriate

advancements in technologies, however, efforts to enhance technology use in local and public organizations has not been successful (Lytra et al., 2008).

Fundamentally, to thrive in competitive global environment, Ghanaian business firms must be innovative by regularly streaming innovations so as to gain competitive advantage (Robbins & Kyei, 2019). Worch and Truffer (2012) found that the firm's general productive capacity and ability to maximize its value is enhanced by operations innovation. A study by Hafeez (2013) found that there was positive relationship between companies' profitability and value-added innovativeness. Organizational success is often dependent on the degree to which they incorporate innovation into their strategies. Globalization, economic crisis, technological changes, lack of opportunities threaten business sustainability (Wilson & Gilligan, 2012).

To do this, the Unilever Ghana Limited assemble key consumer trends, leading-edge science, and the application of data and digital technology to deliver products, services, and experiences (Bawuah, 2020). Despite the potential benefits of technological innovations, there is debate about whether and how their adoption improves organizational performance (Mabrouk & Mamoghh, 2010). Unilever Ghana Limited as a target, the researcher seeks to examine the impact of technological innovation on the growth of an organization.

1.2 Statement of the Problem

The fast development of new products has increased drastically in recent times; the lifecycle of products has been reduced and this trend is expected to have an impact on other sectors particularly the manufacturing sector (Cohen & Levinthal, 2010; Teece, 2012). Research conducted by NIPO Research Institute (2019) indicated that 20 percent of employers all over the world including manufacturing industry suffer structural losses

due to lack of technological innovation capability. Unfortunately, preliminary studies showed that Ghanaian firms find it difficult to stand against its competitors from foreign countries. The local companies cannot compete with the foreign counterparts in terms of product quality and other areas of marketing capabilities. The foreign firms have strategic plan as a tool-kit for achieving their feet, which is also lacking among the domestic manufacturers (Domfe, 2021). The resultant effect is while the local industries performance is on the decline, the multinationals are booming.

Literature search indicated that many companies in Sub-Saharan Africa find it difficult to compete with their foreign counterparts, partly because of their inability to innovate (Odumeru, 2013). While the multinationals enjoy necessary incentives that would encourage all round business growth, most local industries lack necessary ingredients such as size of firm, resources (financial, human), legal protection, innovation efficiency in the area of diversification, flexibility to respond to market changes and incentives to use existing and new technology (Lim, Schultmann & Ofori, 2010). This implies that technological innovation critically affects organizational performance in the market place. Most previous studies conducted on technological innovations have concentrated on developed nations (Worch & Truffer, 2012; Hafeez, 2013). The few studies conducted locally have not been exhaustive as they have dealt with some aspects of innovations and different contexts (Lim, Schultmann & Ofori, 2010; Domfe, 2021; Bawuah. 2020). This study sought to close this literature gap by examining the impact of technological innovation on the growth of an organization.

1.3 Purpose of the Study

The general objective of the study was to examining the impact of technological innovation on the growth of an organization: a case study of this study further concentrates on Unilever Ghana Limited, Kumasi.

1.4 Objectives of the Study

In this light, the following specific objectives were developed:

1. To find out the various technological innovation practices of Unilever Ghana Limited, Kumasi
2. To examine the outcome of technological innovations on the performance of employees of Unilever Ghana Limited, Kumasi
3. To establish the impact of technological innovations on organizational performance of Unilever Ghana Limited, Kumasi.

1.5 Research Questions

In an attempt to address the research problem, the following questions have been formulated to aid the inquiry:

1. What are the various technological innovation practices of Unilever Ghana Limited, Kumasi?
2. What is the outcome of technological innovations on the employee performance at Unilever Ghana Limited, Kumasi?
3. To establish the impact of technological innovations on organizational performance of Unilever Ghana Limited, Kumasi.

1.6 Significance of the Study

The findings of this study will add knowledge by showing how technological innovations influence organizational growth and thereby identify mechanisms to be utilized by the regulators to improve performance of such firms which form the framework for achievement of economic growth. The study was also geared towards helping firms which are yet to adopt technological innovations. The management of these firms will be able to determine the technological innovations suitable for them to enhance organizational growth and performance.

Findings from the study also form a foundation for implementing an effective technological innovation practice. The study would help the Government of Ghana in formulation and implementation of policies for operational efficiency. Through the results of this study, the government agencies would find the benefits realized and how more benefits can be realized for optimal operational efficiency.

This study will be significant in terms of future references to future academicians. The study can also be used to identify further areas of research by highlighting related topics and critiquing to identify research gaps.

1.7 Delimitation of the Study

It would have been more suitable to conduct the research over the entire country of Ghana. However, owing to resource and time constraints, as well as closeness to research locations, the study was confined to the Ashanti Region. In terms of demographic settings, the general universe was business organizations, with manufacturing enterprise chosen from Kumasi Metropolis. According to Davies and Karr (2018), Kumasi has investment potential to attract investors; hence, investigating the impact of technological innovation

on the growth of manufacturing enterprises in Kumasi is important. The scope of this study was narrowed down to the staff of Unilever Ghana Limited, Kumasi.

Furthermore, there are a plethora of subjects that may have been investigated, but it was confined to the impact of technological innovation on the growth of an organisation. The reason for reducing the area of study to these criteria is because this study wants to properly understand how these strategies would affect manufacturing company decision-making through improved product and market innovation. As a result, the scope of the study is conceptually, theoretically, and empirically constrained to the precise aims.

1.8 Organization of the Study

The thesis was organised into five chapters. Chapter one covers the background of the study; statement of the problem; purpose; objectives of the study; research questions, hypotheses, and significance of the study, delimitation of the study and organisation of the study. Chapter Two entails a literature review related to the study. Chapter three describes the research methodology. It includes the research design, population, sample and sampling techniques, research instrument, validity of the instrument, piloting testing, data collection procedure, and data analysis plan. Chapter four presents the results and discussion of the findings of the study. Finally, chapter five contains the summary of the study findings, conclusions, recommendations, and suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter entails theoretical literature review, technological innovations and its relationship with organizational growth and performance. The empirical review of literature consisting of studies done both locally and internationally. It also presents conceptual framework and concludes on the chapter summary.

2.2 Theoretical Review

Theories are important in guiding the research process and enabling the researcher to delineate the variables to be measured, the relationships to be evaluated, and the interpretation of findings (Padgett, 2016). Therefore, theoretical literature was important in this study as it facilitated the development of the framework for data analysis and interpretation of findings. Since the 1960s, several theories have been advanced to explain the adoption and acceptance of technological innovations. These theories include the following:

2.2.1 Resource Based View Theory (RBV)

According to Hart, maintained tipper hand and enhanced execution by a firm might be acknowledged by using profitable, uncommon, non-substitutable and incompletely imitable assets (Hart, 2007). A significant asset or heap of assets enables a venture to bridle openings and diminish dangers in its condition. An uncommon asset or heap of assets is one that is not controlled by many. A non-substitutable asset or heap of assets is one for which a proportional asset cannot undoubtedly be made by contending organization(s). Incompletely copyable asset or heap of assets is hard to imitate or is repeated after critical expense (Hart, 2007). Ignorant (2003) records these assets to incorporate all abilities, resources, hierarchical procedures, learning and data controlled by a firm.

Assets can just extend the firm's esteem in die event that their utilization is in a manner that thinks about the constant changes outside firm condition (Ireland, Sirmon & Hitt, 2012). Assets could also be sorted as substantial or elusive (Bobbitt. Mentzer & Min, 2009). Wagner (2005) defined technological innovations as the desirable practices acquired from efficient technologies. Desirable practices will support the technological functions in the delivery of services of high quality and sustain superior performance therefore technological innovation frameworks are resources that fall well within RBV theory because they lead to improved service delivery and performance.

This study was of the view that higher level of bonding between technological innovations and sustainability is directly associated with an organization's performance and profitability. Under RBV, by exploiting technological innovation practices, government agencies build capabilities for improved organizational performances. This theory is important because it recognizes organizational processes, close working relationships and knowledge sharing as resources that improve organizational performance.

2.2.2 Diffusion of Innovation Theory

Diffusion of innovation refers to the communication of an idea which is considered to be novel to the members of a social system through certain preferred channels (Rogers, 2013). The spread of new ideas is impacted by four variables which are: the actual innovation, social systems, communication channels and time. Of utmost importance is innovations have to gain acceptability in a wide area in order to be sustainable. According to Fisher (2001), adoption of innovation when mapped in the long run forms an S shaped curve.

How successful an innovation will be stems from the resolutions put forward by the social systems through five defined steps which are: knowledge: such as innovation awareness and continuous learning regarding it: persuasion which means willingness to have detailed

knowledge concerning the innovation; resolution, that is, consideration of pros and cons of innovating together with the choice of whether to adopt the innovation or not; application which is an examination of how useful the innovation will be and finally confirmation, which is eventual decision on the continual use of the innovation (Rogers, 2013). The diffusion of innovation model though falls short of explaining the importance of the capability and the dynamics of different inter-connected trading partners and the influence of power between trading partners (Hart & Saunders. 2007).

Rogers (2009) describes communication channel as a critical contributor to the success of adoption of new innovation in the organization. As an effective communication channel creates prior awareness of the new technology, the trading partners need to wort together to ensure the success of technological innovations. This will be determined by the interconnected industry the organization is in and how influential that organization is to its trading partners (Luudblad. 2013). This theory has guided studies on the adoption of technological innovations in businesses.

2.2.3 The Technology Acceptance Model (TAM)

This model clarifies how clients embrace or acknowledge and utilize an innovation. TAM was found Davis in 1989. This model asserts that once a client is given an alternative innovation, some aspects influence their choices on the means and time of utilization.

This incorporates its apparent convenience and seen helpfulness. TAM embraces settled causal chain of genuine conduct convictions, goal and disposition. This was produced by social clinicians from the contemplated activity hypothesis. In Davis' study, two vital parts are recognized; feasible convenience and seen helpfulness (Davis, Pallister & Foxall, 2012**).**

In other studies, regarding technology, TAM is widely adopted and greatly contributes to the development of a person's predictability on technology use (Fishbein and Ajzen, 2010). It is effortless to utilize and this influences the perceived usefulness and the intention for adoption (Davis, 1989). Despite TAM being an important source for framework in the study of adoption and use of technology it has many limitations which include die initial purpose designing the model which is extreme unwillingness to spent resources and generality (Strong & Dishaw, 2009), not taking into consideration non organizational setting of the organization (Davis & Venkatesh, 2010), and ignoring the factors which moderate the adoption of ICT (Sun & Zhang. 2016).

This theory has affected research in acceptance of technological innovations, hi this exploration. TAM will be utilized as a part of three distinctive routes, specifically to discover how the utilization of technology enhances hierarchical administration conveyance to natives, how staff technology preparation impacts the utilization of technology in government agencies and have the accessibility of technology offices impacts the utilization of technological innovations in government agencies.

2.3 Ghanaian Manufacturing Sector

Ghana vigorously implemented an industrialization program with the popular import substitution program shortly after independence. The manufacturing sector is a critical component in industrialization. According to Ghana Statistical Service Reports, the manufacturing sector comprises enterprises in the industrial sector other than mining, quarrying, and oil extraction (GSS, 2014). Davies and Karr (2018) define the manufacturing sector in their analysis to include Food & Beverages, Textiles, Garments & Footwear, Wood & Furniture, Machinery & Metal, and Others outside than the mining, quarry, and oil sector. The industrialisation policy, of which the manufacturing sector was

the foundation, was a resounding success, with the manufacturing sector alone accounting for more than a tenth of Ghana's gross domestic product up to 1990. Even in the 1970s, the industrial sector contributed 14 percent of GDP (Frimpong-Manso, 2016). During those times, the manufacturing sector was seen as the primary engine of Ghana's industrialization agenda, as well as a significant contribution to economic growth and progress.

The industrial sector's historic contribution of more than a tenth of Ghanaian output is now becoming history owing to persistent decline in recent decades. Teal, Habyarimana, Thiam, and Turner (2006) highlighted the manufacturing sector's poor performance in the 1990s and early 2000s. Even in the decade following 2000, there were no notable arrests. Between 2003 and 2013, the manufacturing sector grew by 3.3%, whereas other industrial sectors such as mining, water production, and construction grew by 9.1% on average (Davies & Karr, 2018). Manufacturing's proportional contribution to GDP has fallen from over 10% in 1990 to 6.9% in 2012 and 2013. According to Davies and Karr (2018), the majority of this reduction appears to have occurred after 2007.

The Association of Ghana Industries (AGI) has been condemning Ghana's industrial sector's dismal performance as it continues to contract. Ghana, according to the AGI, is on the danger of losing its industrial foundation (AGI, 2013). This was replicated in 2015, when the manufacturing sector had a historic -8 percent growth rate (Frimpong-Manso, 2016). According to the Association of Ghana Industries (AGI), some of the causes of poor performance include competition, ongoing technological problems, low power stability, and the expense of doing business. As a result of these issues in the manufacturing industry, many of the industry's participants or enterprises have gone out of business According to the Frimpong-Manso (2016), the majority of Ghanaian manufacturing enterprises are gradually embracing modern models of overhead allocation strategies after

previously employing traditional allocation methods. The majority of companies are using activity-based costing, which they believe is preferable to alternative overhead allocation strategies. They do not, however, have the necessary skills to adopt contemporary overhead allocation techniques.

According to research, the exit rates of industrial enterprises in the five most densely populated cities have grown. For example, as of the end of 2013, Accra had a 21.4 percent emigration rate, Kumasi had a 17.4 percent exit rate, Sekondi-Tarkoradi had a 21.9 percent exit rate, and Cape Coast had a 33.3 percent leave rate (Davies & Karr, 2018). It is easy to see that Kumasi has the lowest departure rate. As a result, it is critical to analyze the management technological innovations of industrial enterprises in Kumasi so that the lessons may be applied in other regions of Ghana.

2.4 Technological Innovation

According to Seo and Chae (2016) technological innovation refers to "the implementation of an idea for a new product or a new service or the introduction of new elements in an organization's production process or service operation." However, Singh, Mathiassen and Mishra (2018) stated in their study that material technologies are applied for technological issues in organizations. For instance, to develop an application, a firm can create generic tasks and resources to proceed with the application. Additionally, they stated that the technological trajectory that is considered a possible direction of technology tool that helps to build a technological paradigm (Hollen; van den Bosch & Volberda, 2013). We favor the phenomenon that MI leads to sustainability and in turn, creates superior performance. In the modern business world, technological innovation has become a central focus of top management in various organizations. It is argued that in the turbulent markets, those firms succeed that have modern technology used for products and services (Balbontini et al.,

2015). In strategic management literature, particularly from an RBV perspective, a firm with unique resources and capabilities can achieve a sustainable competitive position in a turbulent market and outperform its closed competitors and industry rivals (Wang et al., 2018). Technological innovation helps firms to produce a variety of new products and services that in turn are important for high performance and profits (Goddard et al., 2010). In a turbulent market, those firms become leaders of the market and gain high profitability, which has high informational technological capabilities (Davis, Pallister & Foxall, 2012**).** Particularly, in emerging markets, a firm's goal of high profit can be gain through technological innovation. In an uncertain environment, technological innovation enables firms to become leaders of a particular industry and seize market profit easily. On the other hand, having no or less technological innovation can attenuate firms to effectively increase their sales growth. technological innovation is not only feasible in a particular industry but various sectors such as manufacturing and services increase their performance by adopting technological innovation (Newbert, 2017). Compared to non-technological innovation, technological innovation has a more significant influence on firm performance and success (Wang et al., 2018). technological innovation is considered an important driver that significantly contributes (Zhu, Sarkis, & Lai, 2012).

2.4.1 Innovation Capability

Innovation capability (Coombs & Metcalfe, 2000) entails the skills and knowledge needed to effectively absorb, master, and improve existing technologies, and to create new ones. It entails the ability to quickly introduce new products and to adopt new processes (Guan & Ma, 2013), involving a wide variety of assets and resources (Sen & Egelhoff, 2010). It is the ability to mold, manage and integrate the different capability and resources of the firm to stimulate innovation successfully (Lawson & Samson, 2011) i.e., the firm's ability

to react through adaptation of resources to the changing requirements of customers or changing technologies (Wang et al., 2018; Goddard et al., 2010). Planning is considered important because it includes for a large part orientation of the innovation process to the market, including accurate prediction of market potential (Balbontini et al., 1999). This enables the firm to jump into the possibilities of and steer the innovation process towards high market and project potential. Important "up-front" activities include initial screening, preliminary market and technical assessment, detailed market research or feasibility studies and commercial evaluation of the innovation project (Stockstrom & Herstatt, 2018; Calantone et al., 2007; Song & Parry, 2007).

Functional innovation capability plays an important role in the execution of the day-to-day activities necessary for the development of the product (Narasimha, 2010; Croom, 2011; Cepeda & Vera, 2017). These are divided into upstream and downstream capability. Upstream capability entails the R&D capability that are needed to deal with novel technologies and approaches in case of development of new technological assets (Yann et al., 2014). It also entails the operations capability which enable the firm to transform R&D results into products which meet market needs, design requests or technological possibilities, as well as the ability to manufacture the innovation at large (Guan & Ma, 2013; Yann et al., 2014).

Downstream capability involves the marketing capability which represent the craft of promoting and selling the product on the basis of the understanding of consumers' current and future needs, awareness of the suitable strategy to approach the customer and sufficient knowledge about the competition (Guan & Ma, 2013). Technical and market-directed feasibility studies assist companies to plan for the necessary functional innovation capability, enhancing the innovation process speed and quality as well as market potential of the innovation.

2.4.2 Innovation in Unilever

Unilever is a British-Dutch manufacturer of fast-moving consumer goods (FMCG) with branches all over the world including Ghana. Its co-headquarters are in Rotterdam and London. Unilever's products range from food and beverages to personal care and cleaning agents. The company has about 400 brands. It is estimated that two billion people interact with their products every day (Hasan, 2015). According to Tepic (2013), brand, and technological innovation are Unilever's strong areas since the two business concepts can sustain over 400 brands in the competitive markets.

Unilever is a well-established company with numerous products and a dozen of leading brands. Its products are among the most recognized in the world. Innovation forms an important part of the company's strategic management (Christensen, 2012). Through open modernization, the company is directing its efforts towards sustainability. It has adopted new design technologies to facilitate the creation of new products, as well as to improve the existing ones (Hasan, 2015). Unilever operates various research centers that are used to make product breakthroughs, hence keeping the company at the forefront of the many markets in the world of which Ghana is no exception (Hasan, 2015).

Unilever's technological innovative efforts have also been directed toward creating food products that do not have adverse effects on consumers' health. These efforts have materialized in the development of the 'Fat-Free, Sugar-free Sweet Chocolate' with various health benefits to the consumer. Currently, the company is engaged in several innovative exercises. Recently, Unilever embarked on an effort to devise a technology that would prevent oil oxidation. Oil oxidation involves a series of chemical reactions that reduce the quality of the oil by rendering it undesirable for consumption. In addition, Unilever is dedicated to adopting intelligent packaging for its various products with the aim of increasing the shelf life of the company's products (Pereira, Cruz & Losada, 2012).

Through technology, the company have been able to bring up new packaging that contain guides, reviews, recipes, and information about the health benefits of Unilever's products. Innovation is at the heart of Unilever's ambition to grow sustainably. Science, Technology and Product Development are central to their plans to keep providing consumers with brands that improve their lives while having a positive impact on the environment and society, The Unilever company Limited have over 20,000 patents and a rich history of ground-breaking innovations – many of which have been adopted by organisations the world over. Unilever knows its brands well, and know the consumers who use them. The company innovate for people and the world; for its consumers, for superior performance, for value for money, and for sustainability (Unilever, 2018)

All innovations of the company are based on key insights into consumers' needs and wants. Unilever aim to develop products that have a purpose and those consumers choose again and again. In the same vein, the company work on a comprehensive portfolio of projects, combining the search for breakthrough technologies with the constant drive to respond to consumer demands, and make its products more sustainable. To do this, the company assemble key consumer trends, leading-edge science, and the application of data and digital technology to deliver extraordinary products, services, and experiences (Tepic, 2013). The company's investment in safe science underpins its leadership on alternatives to animal testing, while the company's understanding of the latest bioscience is leading to breakthroughs for consumer hygiene and microbiome care. The products develop in partnership with leading scientists, academic institutions, suppliers, and specialist businesses, play an essential role in the company's ambition to make a positive impact (Unilever, 2018).

Unilever employs more professionals globally to build its brands through innovation in area such as beauty and personal care, home care, foods, nutrition and refreshment The

company's global centers of excellence are powered by its world-class technology ecosystems, such as the Foods Innovation Centre in Wageningen, Netherlands. Unilever's research aims to bring together the best thinking and ideas - from wherever they exist, including universities and strategic companies - to innovate boldly for people and the planet. The company have a strong record of breakthrough innovations – disruptive technologies that meet consumer needs better than any available alternatives and make a big impact (Tepic, 2013).

With world-class facilities, and a superior science and technology culture, that attract the best talent to provide a significant technology differentiation to our products and processes. The technological innovative team comprises highly qualified scientists and technologists working in the areas of Foods and Refreshment along with Processing, Packaging (Unilever, 2018).

2.5 Technological Innovations Practices

According to Lyytinen and Rose (2013) there are four measures of technological innovations. These are: System development enhancement, utilization of digital tools and services in the execution of the daily operational activities of the organization: information technology-based innovations and interdepartmental process integration which involve integration of processes across all the departments. The measures are discussed in detail below.

2.5.1 System Development Enhancement

System development enhancement involves adding new capabilities to an existing system. Enhancement might also involve adding new features, correcting identified defects and modifying functionality to enhance efficiency. An enhanced system can replace an existing system in any of these three ways: a commercial off-the-shelf system, a new

custom-built system or a hybrid of the two. System development enhancement is most commonly implemented to cut costs, improve performance, meet regulatory requirements or to take advantage of modem technologies (Kash & Rycroft, 2011). An effective way for systems development managers to determine if a system needs an overhaul is to perform an operational analysis. By investing a small amount of time and money, the operational analysis process can resolve the problems and extend the life of the system. Enhancement requests address some minor modification for an existing system. One rule for systems development managers to follow is to define enhancements as projects that require less than ten days of labor and that can be completed within one calendar month (Wu & Lin, 2019).

2.5.2 Digital Tools and Services

Digital tools and services are used to support business operations, from electronic commerce, to firm communications and to internal business systems. While digital tools and services require an initial resource investment, this kind of investment can bring long run efficiency by streamlining processes and saving time. Digital tools can also open up new avenues for exchange of data and collaboration all of which creates more venues (Kash & Rycroft, 2011). Various tools can be used to help manage documents, customer relationships, human resources and other internal processes (Alstrup, 2010).

The three main digital tools and services applied by organizations include extranet, intranet, human resource management and customer association management. An intranet is like an internal internet. It can link employees who working in different locations enable them to effectively communicate and collaborate. Customer relationship management tools help organizations manage relationships with customers systematically. efficiently and profitably (Alstrup, 2010). Human resource management tool assists au organization

to manage its most important resource (the employees) so as to achieve the best from them as well as evaluation of the same.

2.5.3 Information Technology Based Innovations

Information technology-based innovations are continually becoming prominent in improving competitiveness in service operations. Being the action of converting opportunities to become contemporary' ideas (Lin & Ho, 2017), information technology-based innovations are significant to enable a firm survive severe and tough universal circumstances but maintaining sustainable competitiveness (Wu & Lin, 2019). Several information technology-based innovations are used in service science and firm operations. Lin & Ho (2017) came up with an important way to classify information technology' based innovation as Radio Frequency Identification Systems (RFID): automated storage and retrieval systems: global positioning systems (GPS); Electronic Data Interchange (EDI) and Point of Sales (POS) FT based innovations. Information technology' based innovations are vital to help firms in surviving antagonistic worldwide money related conditions while likewise getting to be plainly instrumental for producing supportable intensity. This is confirmed by the race towards development and interest in environmentally friendly power vitality (e.g., sun-oriented vitality and bioenergy), which is attractive for associations to flourish into what's to come. Governments in numerous nations have distinguished advancement as a center component of their dynamic strategies. For example, advancement is a critical part in strategies and vital research need for both developing and developed nations (Lin & Ho, 2017**)**.

2.5.4 Interdepartmental Process Integration

In multi-functional firms where, separate departments collaborate to produce a perfect coordination in design, assembled product, technical and production capabilities are critical in ensuring that final product meets the standards. Thus, proper integration is a vital management obligation which balances decentralization and centralization of operational efficiency within the entire group. This enables different participants to homogeneously function and coordinate energies to attain the goals of an organization. Interdepartmental process integration defines general goals and departmental sub-goals so that everyone articulates their roles and how these results in realizing overall objectives (Tushman & Fladler. 2016).

2.6 Organizational Growth and Performance

Organization growth and performance includes real productivity or outcome of a business which is calculated in opposite to its planned productivity or targets and aims. Organization growth has been defined as the capability of firm to accomplish its goals and objectives with the help of talented administration, good governance and have a constant rededication to accomplish business objectives (Mahapatro, 2013). The businesses that perform well are developed according to the needs and wants of the targeted clients and the product they are offering should be different from the competitor product and also have more effectiveness as compare to the competitor and that product helps you to build competitive advantage (Prahalad & Hamel, 2011).

Antony and Bhattacharyya (2010) proposed a model to evaluate organizational performance and organizational excellence, which could be used by small and medium enterprises. The outcome suggested that performance influences excellence there refining

excellence as the ability or capacity of one performance variable to affect or influence the other performance variables in an organization. In another study conducted to examine the relationship between organizational performance and organisational excellence using a quantity approach. It is established that organizational performance and organizational excellence could be measured by consolidating performance variables, using two different methods: performance can be measured by averaging the performance variable scores, and excellence can be measured by averaging the correlations of performance variable scores (Mahapatro, 2013). Based on the study, a new general definition for organizational growth is proposed, as ‘‘the outstanding measure of relationship of all performance variables influencing an organization’s functioning’’.

2.6.1 Integrating Innovative Marketing Capability and Strategic Plan

Arthur et al. (2014) see integrating marketing innovation as a crucial industrial driving force – To them, when firms are successful in introducing new ways to market their products, they can spark a burst of buyers’ interest, widen industry demand, increase product differentiation and lower limit cost, any or all of which can alter the competitive positions of several firms and force strategy revision. To Arthur et. al., a synergy between technological change, product innovation and marketing innovation are good enough driving force to propel a firm to have competitive edge over their competitors. There is need for these technological innovation capabilities (which serve as the driving force) and strategic plan capabilities. Marketing capabilities are prerequisites to sound strategy marketing. This synergy is a dynamic situation as it combines necessary innovative capabilities to respond to the environment.

According to Kazmi (2018), an organization need to possess dynamic capabilities to adjust in order to respond to the external environment. The fall-out of above analysis is to create

value for our product to be better priced and purchased in the market. To innovate is to create value (Kim & Mauborgne, 2009). The essence of innovation is to create value (Kim & Mauborgne, 2009). And to value innovate, companies must be able to offer radically superior value and ensure that the target market is accessible to the price and this is what management of Nestle product assumes to be doing by packaging its product for the affordability of the market. Kim and Mauborgne, (2009) conclude that value innovation involves new product concept or new way of developing a business opportunity using the existing technologies and knowledge. This is the essence of strategic marketing derived from the corporate strategic planning capabilities.

2.7 Empirical Literature Review

The significance of innovation and how influential it is to the performance of an organization was depicted by the study conducted by Furst, Lang, and Nolle (2012) who considered several companies from five countries. From the Findings of this study the differences in performance of Suns in the different countries was determined by their innovative capacity: France, England, Germany, United States and Japan. This study was however conducted in developed countries and so the findings cannot be generalized in die local contest. Koder (2013) in his study of the association between innovation and performance, by examining Sony Company, showed that the market share for a front runner in innovation expanded significantly by way of offering many new products to clients. This study was a case study as it only focused on Sony Company. In addition, the focus was effect of innovation on market share and not overall firm performance which is die focus of the current study.

Geistenfield and Wortzel (2017) did an analysis of the link between the use of innovation technologies that are internet-based, various types of innovation and the financial

performance on firm level. The data used was selected from European enterprises totaling 7302. The findings from the empirical investigation showed that internet-based innovation technologies were significant in enabling innovation in the year 2003. The results also showed that all the technological innovations whether internet-enabled or non-internet-enabled product contributed to positive turnover and growth in employment. Additionally, it showed that higher profitability is mostly the result of the innovative activity' of the firm. Although this study focused on innovation technologies and performance, it had two weaknesses that the current study sought to overcome. First, the study was carried on firms in a developed context which is different from the current study. Secondly, the study focused on financial measures of performance while the current study focused on both financial and non-financial measures of performance.

The study by Mamoghli and Mabrouk (2010) asserts that as the innovation process continues overtime, banks considered to be innovative will be able to continue enjoying attractive returns on the never or improved products. However, supernormal profits will decrease following widespread adoption of the new technologies. Grundiche (2014) opinion is that, for a firm to ensure it remains competitive in a dynamic environment and achieve its set objectives of profitability, sales volume arid market share, it must make efforts to continually improve products to satisfy customer desires and needs that keep changing. Mabrouk and Mamoghli (2010) state the reasons that drive new product development as mentioned by most business persons include growth in the corporation, diversification, and the search for increased competitiveness. They also add that the main goal for developing new products is to explore other new opportunities since new products enhance the firms' survival in the long run growth. These three studies focused on one aspect of innovation (product) and this is different from the current study that focuses on technological innovations.

Nwokah, Ofoegbu and Elizabeth (2019) did a study on the variables of product development such as the quality of the product mix which showed a positive correlation to corporate performance variables of sales volume, customer loyalty and profitability. Neely (2012) turnover in terms of sales for firms embracing innovation was faster than firms that do not embrace innovation. They found that there exists a significant association between the innovative sales share and the firm's change in sales turnover. Chesbrough (2010) found that the effects of innovation were reflected in higher levels of products, better standards of products as well as process-oriented outcomes such as improved production flexibility and increased production capacity. Nwokah et al., (2019) and Chesbrough (2010) focused on one aspect of product innovation while the current study focuses on four different aspects of technological innovations. Although Neely (2012) focused on innovation, the dependent variable in that study was sales volume while the current study focuses on different measures of firm performance.

Firm performance is said to be the outcome that is achieved when a firm meets its goals (Wladawsky-Berger, 2018). Conventionally, the variation in firm's performance is linked to business structure (Ruttan. 2004). The neo-classical economic theory however sees business growth as the process of achieving the minimum point of the average cost. Ruttan (2004) came up with a theory that was resource-based where a business's performance is reliant on the firm resources and abilities the business has to source sustainable market competitive advantages and argues that for firms to grow, they must be able to mobilize, access and position resources.

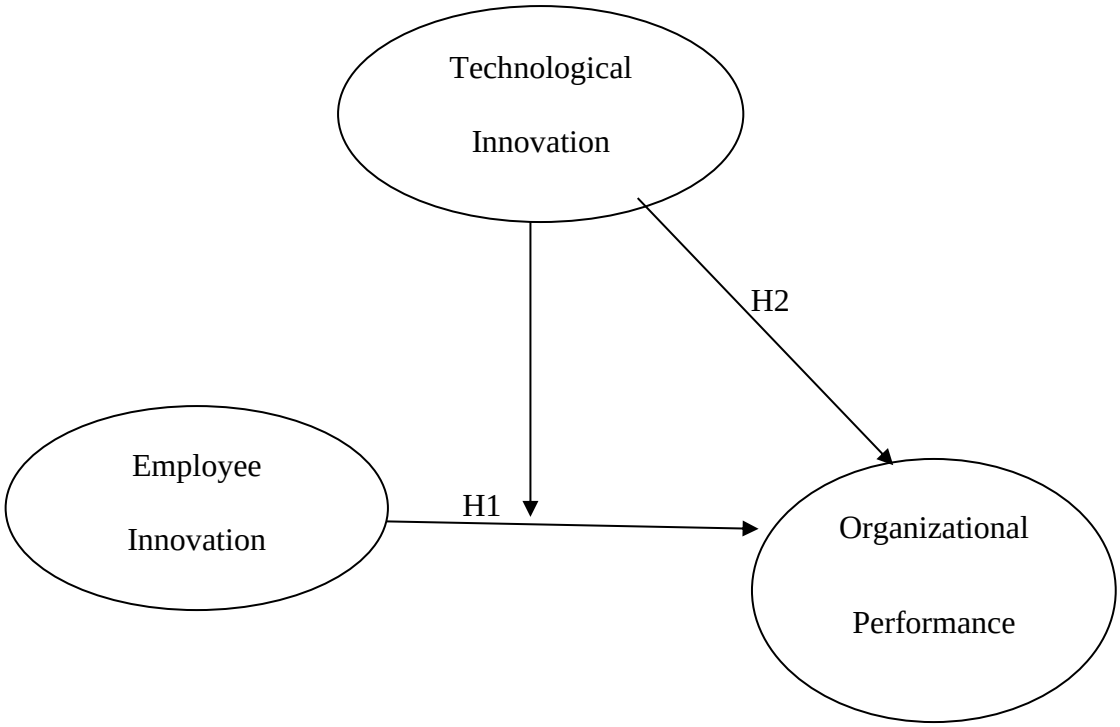
Hill and Utterback (2009) mentioned that the driver of change and development in societies that are associated with increasing levels of employment growth had a strong export market position, productivity, trade and improvement in the quality of life and trade. The technological innovation process however comes with some complexities in die

process of interacting with industrial factors: studies on the concept have proven to be difficult. However, Lall (2000) stressed that technological innovation is mostly being undertaken in the developing country's modem sectors especially those that have been in the manufacturing industry for long and with broad -based capital good sectors. These innovations bring change in a variety of ways including increased efficiency and productivity from the simplicity of learning through practicing, advancements in design, construction and management of advanced industrial processes.

Additionally, Worch and Truffer (2012) studied how IT innovations impacts service environments and found that the adoption of technology is associated with a given degree of suspicion but with expectations that it will lead to the improvement of performance and service delivery. It was also noted that the decision to outsource technological services capabilities is considered as passing the blame for failure of service under public domain.

2.8 Conceptual Framework

A conceptual framework is a tool used by researchers to guide their investigation; it is a collection of concepts used to organise the research, much like a map (Kothari, 2012). It conveys the researcher's point of view on the subject and serves as a guide for the study. It might be an adaptation of a model used in a previous study, with changes to match the investigation. Aside from outlining the direction of the investigation, the conceptual framework enables the researcher to explain the connections between the several constructions that he desires to investigate. This research was guided by the conceptual framework shown below, which depicts the relationship between the dependent and independent variables.



Source: Author, 2021

HYPOTHESIS

H1 = There is a significant relationship between technological innovation practice and organizational performance

H2 = Technological innovations have significant positive impact on organizational growth.

2.9 Summary of Literature Review

The theoretical review has explained in detail three theories which include the RBV theory of the firm, diffusion of innovation theory as well as TAM This study is of the view that higher level of bonding between technological innovations and sustainability is directly associated with an organization's performance and profitability. Under RBV by exploiting technological innovation practices. This theory recognizes organizational processes.

close working relationships and knowledge sharing as resources of improving organizational performance while TAM along with diffusion of innovation theory explains how innovations spread throughout organizations. This study sought to determine whether organization performance is in anyway associated with technological innovations as explained in RBV. Numerous empirical studies have been carried out on technological innovations as well as organization performance and discussed in this chapter. The above review indicates that few studies have been undertaken in the establishment of the relationship between technological innovations and organization performance thus more studies need to be done.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter describes the methodology employed for the study. It specifically takes a critical look at the research design, population, sample and sampling techniques, research instrument, piloting testing, validity of instrument, data collection procedure, data analysis plan and ethical considerations.

3.2 Research Design

Descriptive survey design was used in this study to find out the opinions and attitude of teachers regarding the current status of the problem. According to Ary, Jacobs, Razavieh and Sorensen (2010), descriptive design seeks to find factors associated with certain occurrences, outcomes, condition or types of behaviours. Saunders, Lewis and Thornhill (2013) have explained that descriptive research helps in studying the present problems and suggests some solutions to those problems. Fraenkel and Wallen (2011) also believe that obtaining answers to a set of administered questions from a large group of people lies at the heart of a descriptive survey design.

Descriptive survey was used for the collection and analysis of information in order to answer questions which were posed. According to Mugenda and Mugenda (2016), descriptive survey aims at describing, observing and documenting aspects of a situation as it occurs rather than explaining them. This design has the advantage of producing a good number of responses from a wide range of people (Jacobs, 2011). This design provides an accurate picture of events and it also seeks to explain peoples' perceptions and behaviour on the basis of data gathered at a point in time (Amedahe & Asamoah-Gyimah, 2013). It is also important to note that this design is appropriate when a researcher attempts to

describe some aspects of a population by selecting unbiased sample of individual who are asked to complete questionnaires, interview or tests (Jacobs, 2011).

In using descriptive, the items to respond could not be misleading. This is because descriptive survey results can vary significantly depending on the exact wording of questions (Amedahe & Asamoah-Gyimah, 2003). The results produced by this design can however be unreliable because the questions which are normally asked seek to delve into private matters of the respondents who may not be completely truthful (Fraenkel & Wallen 2011). Fraenkel and Wallen further stated that questionnaire require respondents who can articulate their thoughts well and sometimes put such thoughts in writing. It is again very difficult to get all the questionnaire completed for meaningful analysis to be made on them. Though these difficulties and disadvantages exist, the descriptive survey design was considered the most appropriate since it has the potential to provide a lot of information obtained from quite a large sample.

3.3 Population of the Study

According to Gay (1992), population in research is the group of interest to the researcher, which the results of the study are generalized. He further explained that population has at least one characteristic that differentiates it from other groups. The population for the study is therefore the members of staff of Unilever Ghana Limited, Kumasi.

3.4 Sampling Technique

The sampling procedure used to select the respondents was purposive sampling technique aimed at selecting sample size of the study. Kothari (2012) sees purposive sampling as hand picking the cases to be included in the sample on the basis of their judgments of the typicality of the issue identified for study. Purposive sampling is the process of including

whoever happens to be information rich and available in the sample. This sampling technique is fast, inexpensive, easy and the subjects are readily available, hence data collection can be facilitated in short duration of time.

3.4.1 Sample Size

The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample. Sample size determination is the act of choosing the number of observations to include in a statistical sample. A sample size of one hundred and forty (140) was considered for this research consisting of management staff, senior staff and middle-level officers within the study frame.

3.5 Data Collection Instrument

Questionnaire was adopted for this study. Mugenda and Mugenda (2016) observe that the use of questionnaire is a popular method of data collection in education because of the relative ease of cost effectiveness with which they are constructed and administered to the large samples. Questionnaire is an inexpensive way to gather data from a potentially large number of respondents. Often, they are the only feasible way to reach a number of reviewers large enough to allow statistical analysis of the results. Questionnaire offers greater assurance of anonymity. Questionnaire is stable, consistent, uniform measure without variation and offers a considerable and objective view on the issue, since many respondents prefer to write rather than talk about issues (Fraenkel & Wallen, 2011).

However, questionnaires have some weaknesses. Questionnaire is standardized so it is not possible to explain any points in the questions that participants might misinterpret. Open-ended questions can generate large amounts of data that can take a long time to process

and analyse. Respondents may answer superficially especially if the questionnaire takes a long time to complete (Fraenkel & Wallen, 2011).

The questionnaire was designed in line with the research objectives and socio-demographic characteristics were also elicited. The questionnaire was structured into two main sections. The first section examined the respondents' background such as gender, age, years of practice and qualification and the second section sought to investigate the research questions of the study. A Likert-type scale was employed and the respondents were asked to rate based on a five-point Likert-type scale their agreement with various statements. Questions that were open-ended were kept to a minimum, either to cater for the wide range of expected or possible responses or to allow the respondents the freedom to fully explain their choice of responses.

3.6 Pilot Testing

Pilot test was conducted prior to the actual research where Nestle Ghana was selected from the study area. Also, Nestle Ghana was deemed suitable because it possesses similar characteristics as the target population. The purpose of the piloting was to enable the researcher to make the necessary changes to items which may be inappropriate and also determine the level of ambiguity of the questions for corrections. Ambiguous items were changed and inappropriate items were modified.

3.6.1 Validity of Research Instrument

According to Mugenda and Mugenda (2016), validity has to do with how accurately the data obtained in the study represent the variables of the study. Construct validity is the degree to which a test measures what it claims to measure, that is giving a legitimate operationalization in a study in relation to the theoretical constructs. To ensure validity,

expert judgment was sought where the researcher availed the instrument to the supervisor to analyse. Based on the advice given, modification and removal of ambiguous or unclean items were done to attract appropriate responses from the respondents.

3.6.2 Reliability of Instrument

The Cronbach's coefficient alpha reliability which measures the internal consistency of test scores was used to assess the reliability of the instrument, as is by far the most frequently reported reliability index and predictably robust even for small samples (Ary et al, 2002). For generalization, the internal consistency reliability of responses on the influence of single parenting was calculated to know how much reliable data collected from respondents are and a Likert scale of 0 to 1.00 was used to check the reliability of the responses. Therefore, when the questionnaire was collected, it was screened, coded and entered into the computer for reliability analysis. This was deemed appropriate for the study based on Cohen, Manion and Morrison (2007) recommendation that a reliability co-efficient of 0.70 or above is good enough for research purposes. As a result, the instrument was used in collecting data for the study.

3.7 Data Collection Procedure

To maximize both the quality and quantity of responses, attention was given to every detail that might affect response behaviour. Proven methods to increase response rate were implemented to maximize the number of respondents. The survey packet comprising of a cover letter and questionnaire prepared for the sample manufacturing firms.

After the reliability and validity had been determined, data collection started with seeking permission from the construction managers. An introductory letter was obtained from the University, which sought to introduce the researcher to the manager of Unilever Ghana

and sought permission to carry out the administration of questionnaire. The letter spelt out the purpose of the study and ethical issues were identified. The inclusion and exclusion criteria were established before collection of data commenced. The researcher explained that participation was voluntary; that all responses would be confidential; and that respondent needed to only answer those questions they felt comfortable with. The importance of the participation of the respondents in the study was stressed.

The personally gave the questionnaire to the participants. The purpose of the study was explained to prospective respondents, their consent was sought and the questionnaire was self-administered to them and they were collected later within five days when they finished responding to them. This allowed respondents to take time to think about the questions before responding to them. Providing at least five days for respondents to think of responses has the tendency to result in reliable answers.

3.8 Data Processing and Analysis

The data collected from the field were cross-checked and edited to ensure that there were no mistakes in the responses and that, the information given were relevant. Afterwards, the data were coded and fed into the computer. The Statistical Product for Service Solutions (SPSS version 16) and Microsoft Excel 2016 were used to process, generate a database of responses and to conduct statistical analysis using the questionnaire. Kothari (2012) maintains that when making the results known to a variety of readers, simple descriptive statistics such as percentages have a considerable advantage over more complex statistics. The researcher analysed the data from the survey and presented the results using frequency tables and bar charts, means and standard deviations. Thereafter, conclusions and recommendations were drawn.

3.9 Ethical Consideration

One important component of field research is ethical requirement on the part of the researcher. The respondents have the right to decide whether to respond to questionnaire or not. As a result, declaration of the purpose was made, and the consent of the respondents was sought. To ensure confidentiality as well as anonymity of responses, names and identity of respondents were not disclosed. The researcher tried as much as possible to report every view of the respondents without imposing personal biases in the interpretation of the data.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter is based on the data gathered by the researcher dealt with in chapter three. The chapter discusses and analyses the data collected. That is, data on the background of the respondents, such as age, gender, educational status and years of experience. The second part deals with the presentation and analysis of the main data that relates to the research topic. In discussing the results from the administered questionnaires, references were made to frequency figures, means, charts and tables. One-hundred and twenty questionnaires were distributed to the respondents but one-hundred and fifteen were retrieved. Therefore, the study showed a response rate of 96%.

4.2 Demographic Characteristics of Respondents

To position the study in the right frame, it is imperative to understand the personal and background characteristics of respondents. This builds confidence in the dependability of the data obtained and, ultimately, in the study's conclusions. The pertinent socio-demographic factors of respondents covered were gender, age, level of education, and years of experience.

4.2.1 Gender of Respondents

The researcher enquired about respondents' gender. Responses registered by the selected respondents have been presented in Figure 4.1. The gender description of the study showed that both sexes participated and provided information.

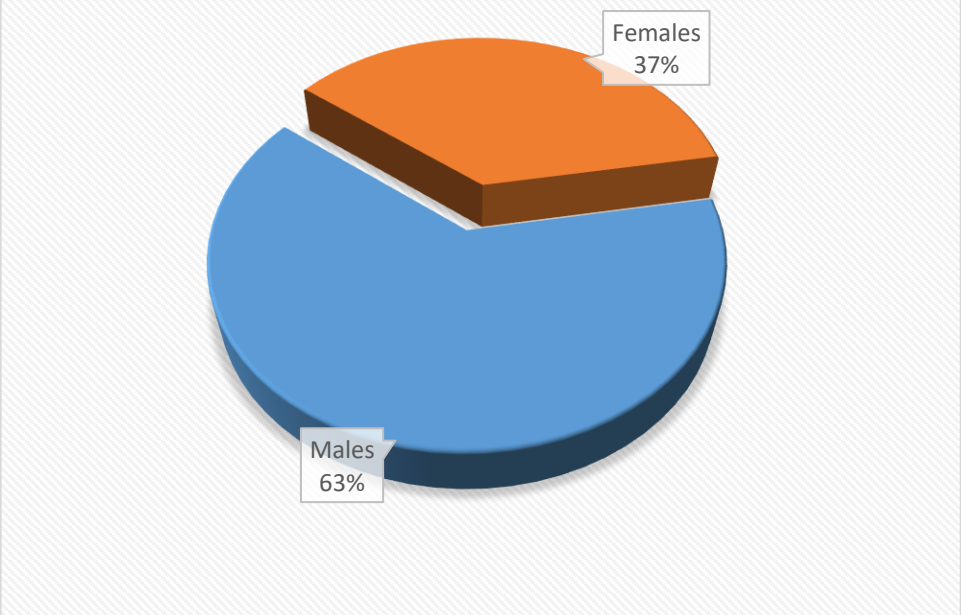


Figure 4.1: Distribution of Respondents by Gender

Source: Researcher's Field work, 2022

From Figure 4.1, out of the 115 respondents who were contacted, 63% were males, whereas the remaining 37% were females. This depicts a male dominated environment. This could also mean that males tend to find employability with manufacturing companies more than females.

4.2.2 Age Distribution of Respondents

Accordingly, the respondents were asked to indicate their age. The ages of the respondents were categorised into ten-year intervals in order to isolate the particular age range that produced the majority of the respondents, as shown in Table 4.2.

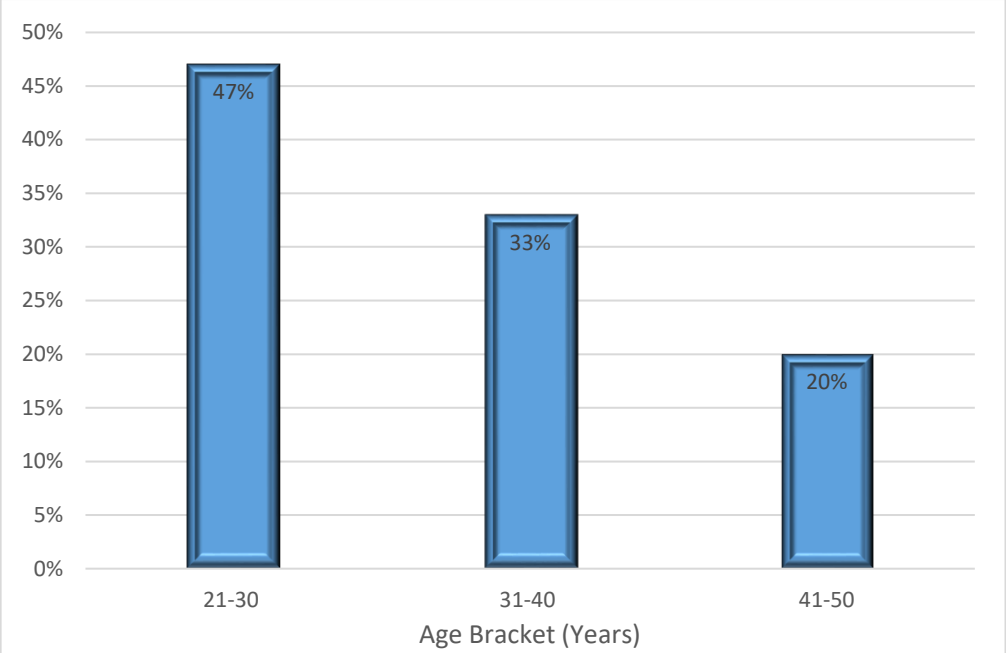


Figure 4.2: Distribution of Respondents by Age

Source: Researcher's Field work, 2022

Figure 4.2 displays the responses from respondents on their age category. In response to this question, 47% of the respondents were between the ages of 21 and 30 years, 33% were between the ages of 31 and 40 years, and 20% respondents were between the ages of 41 and 50 years. It was therefore deduced that employees at Unilever Ghana Limited are very young and economically active.

4.2.3 Respondents' Educational Level

The educational status describes the educational background of respondents in the study area. The outcome of the analysis of the respondents' educational attainment is presented in Figure 4.3.

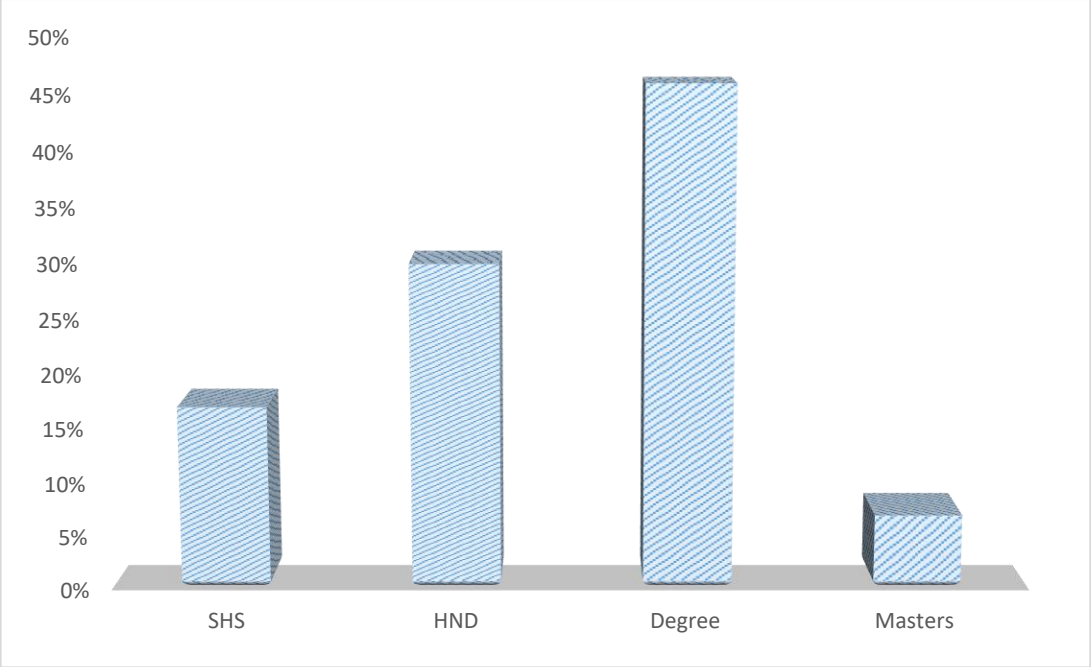


Figure 4.3: Distribution of Respondents by Highest Level of Education

Source: Researcher's Field work, 2022

The results in Figure 4.3 show that 46% of the respondents had attained a Bachelor's degree as their highest level of education, while 7% of the respondents had attained a Master's degree as their highest level of education. 30% were Diploma holders while 17% of the respondents were Certificate holders. This shows that the respondents are highly knowledgeable, with 83% having attended a tertiary institution. Hence, it was assumed that the survey population were literate and expected to provide an objective assessment of the issues raised in the research instrument. In other words, valid information was likely to be extracted from these set of respondents.

4.2.4 Number of Years Worked

This section describes the number of years' respondents have served at Unilever Ghana Limited, Kumasi. For the purposes of this study, the responses were categorised into four groups. Table 4.1 presents the data of respondents on the years they have worked in the study organization.

Table 4.1: Years of Experience of Respondents

Age Group	Frequency	Percentage (%)
Less than 1 year	15	13
1 – 3 years	31	27
4 – 7 years	46	40
Above 7 years	23	20
Total	**115**	**100**

Source: Researcher's Field work (2022)

Again, findings on the duration of service by respondents in Table 4.1 showed that 13% of the respondents have served less than 1 year in the organization. Majority 27% of the respondents have served between the periods 1 – 3 years. While majority (40%) of the respondents have served between the periods 4 – 7 years. This implies that 60% of the respondents sampled have worked in the company above 4 years and were experienced enough to provide relevant information about Unilever Ghana Limited, Kumasi relating to the variables of the study.

4.3 Level of Technological Innovations Adoption in Unilever Ghana Limited

This was the first research question of the study. Here, the researcher sought to present data on the level of technological innovations adoption in Unilever Ghana Limited. The subsequent subheadings carefully reported on the various practices of technological innovations.

4.3.1 Descriptive Statistics on System Development Enhancement

The respondents were asked to respond on statements related to system development enhancement practice in Unilever Ghana Limited, Kumasi. The descriptive in Table 4.2 presents employees' response that relates to system development enhancement.

Table 4.2: System Development Enhancement

Statement	Mean	SD
The organization frequently adds new capabilities to an existing system	3.68	1.45
The organization modifies systems on a continuous basis to enhance efficiency	3.55	1.37
Identified defects are corrected on a continuous basis	3.51	1.44
New features are often added to the existing system	3.36	1.38
Aggregate mean	**3.53**	**1.41**

Scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree; N=115

Source: Researcher's Field Survey, 2022

Table 4.2 depicts the mean and standard deviation of various indicators of system development enhancement. The overall mean and standard deviation for all the indicators are also shown. The results indicate that the company frequently adds new capabilities to an existing system with a mean of 3.68 and 1.45 SD. Consequently, this was the indicator with the highest mean and hence the highly adopted under system development enhancement. Secondly, the results show that organization modifies systems on a continuous basis to enhance efficiency with a mean score (3.55) above the average mean value. This signaled that majority of the respondents were agreeing with the statement. Thirdly, the results indicate that identified defects are corrected on a continuous basis had a 3.51 mean and 1.44 SD. Finally, the least in adoption was the construct that new features are often added to the existing system had a mean score (3.36) above the average mean, with a standard deviation value indicating deviations from the mean. An overall mean of 3.53 was obtained meaning that most respondents agreed with these statements. The overall SD was 1.41, an illustration there was clustering of responses around the mean.

This implies that Unilever Ghana Limited always add new capabilities to an existing system to increase efficiency and improve performance. This is backed by Kash and Rycroft (2011) that system development enhancement is most commonly implemented to cut costs, improve performance, meet regulatory requirements or to take advantage of modem technologies.

4.3.2 Descriptive Statistics on Digital Tools and Services

The descriptive in Table 4.3 presents employees' response that relates to digital tools and services.

Table 4.3: Digital Tools and Services

Statement	Mean	SD
The firm has an efficient customer relationships management system	3.68	1.16
The firm has an efficient human resource management system	3.60	1.21
The firm is connected with an extranet	3.56	1.22
The firm is connected with an intranet	3.47	1.28
Aggregate mean	**3.58**	**1.22**

Scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree; N=115

Source: Researcher's Field Survey, 2022

Table 4.3 depicts the average and SDs of various indicators of digital tools and services. The overall mean and standard deviation for all the indicators are also shown. The results on the indicator that the firm has an efficient customer relationships management system had a 3.68 mean and 1.16 SD, a sign that most respondents were disagreeing with the statement. This was the indicator with the greatest mean and hence the highest determinant under digital tools and services. Secondly, this was followed by the indicator that the firm has an efficient human resource management system. The results on this had a 3.60 mean

and a 1.21 SD meaning most respondents accepted the statement. Further, the results on the indicator that firm is connected with an extranet was the third in influencing the contribution of digital tools and services on organizational performance of Unilever Ghana Limited at a 3.56 mean and a 1.22 SD but which was still a sign that most respondents were not agreeing to the statement. The results on the indicator that the organization is connected with an intranet were the last and had a 3.47 mean and a 1.28 SD. This was still an indication that most respondents were not agreeing to the statement. The overall mean was 3.58, a signal that most respondents agreed with the statements. The results imply that Unilever Ghana Limited maps and measures the relationships and flows among people within the organization using digital tools and services. Moreover, this study's finding is in agreement with those of Kash and Rycroft (2011) who argued that while digital tools and services require a prior resource investment, this kind of investment can create long run efficiency by saving time and aligning the processes. In addition, the findings of this study are in agreement with those of Alstrup (2010) who stipulated that digital tools can also open up new opportunities for exchange of data and collaboration which ultimately contributes to more revenue, manage documents, customer relationships, human resources and other internal processes.

4.3.3 Descriptive Statistics on Information Technology Based Innovations

In this subsection, the respondents were required to respond on statements associated with information technology-based innovations as indicated in Table 4.4.

Table 4.4: Information Technology Based Innovations

Statement	Mean	SD
Organization makes use of radio frequency identification systems	3.43	1.37
Electronic data interchange is widely practiced in the organization	3.39	1.28
The organization has automated storage and retrieval system	3.28	1.28
The organization makes use of global positioning systems	3.10	1.29
Aggregate mean	**3.30**	**1.31**

Scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree; N=115

Source: Researcher's Field Survey, 2022

Table 4.4 depicts mean and standard deviations of various indicators of system development enhancement. The overall mean and standard deviation for all the indicators are also shown starting with the highest to the least. The study findings showed that the statement "organization makes use of radio frequency identification systems (RFID)" scored above the average mean value (mean =3.43 and SD= 1.37) indicating that most of the respondents agreed with the statement. This means that radio frequency identification systems were the highest in adoption under information technology-based innovation. This was followed by the statement that the electronic data interchange is widely practiced in the organization with a 3.39 mean and 1.28 SD. Thirdly, the results on presented on Table 4.4 shows that the organization has automated storage and retrieval system with a mean of 3.28 above the average mean value and a 1.28 SD. The findings on the indicator that the organization makes use of global positioning systems was the least in influencing information technology-based innovations on organizational performance of Unilever Ghana Limited with a 3.10 mean and a 1.29 SD. An overall mean of 3.30 was obtained meaning that most respondents agreed with the statement. The overall SD was 1.31, an illustration that the responses were divergent around the mean. The results imply that data

storage, retrieval and exchange is a top priority in Unilever Ghana Limited. The study finding is in agreement with those of Lin and Ho (2017) who posited that information technology-based innovations are significant to enable companies survive severe universal tough circumstances but maintaining sustainable competitiveness.

4.3.4 Descriptive Statistics on Interdepartmental Process Integration

The respondents were asked to respond on statements related to interdepartmental process integration practice in Unilever Ghana Limited, Kumasi. Table 4.5 was presented to show the data on this part of the study.

Table 4.5: Interdepartmental Process Integration

Statement	Mean	SD
Collaboration between departments is encouraged in the organization	3.36	1.32
There is efficient flow of information between functions and departments	3.30	1.35
There is continuous interaction between departments	3.21	1.29
All departments understand their roles and how these affect the overall objective	3.16	1.35
Aggregate mean	**3.26**	**1.33**

Scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree; N=115

Source: Researcher's Field Survey, 2022

The overall mean and standard deviation for all the indicators are also shown. The indicators are arranged according to the weight they had on the entire variable as reflected by the mean and the standard deviation. The statement that collaboration between departments is encouraged in the organization had the greatest mean of 3.36 and a 1.32 SD and therefore had the greatest adoption on the variable of interdepartmental process

integration. Consequently, it signaled that most respondents agreed with the statement. Secondly, the statement that there is efficient flow of information between functions and departments had a 3.30 mean and a 1.35 SD. once again a sign that most respondents accepted the assertion. The statement that there is continuous interaction between departments had a mean score (3.21) greater than the average mean value indicating that the respondent agreed with the statement. Finally, the statement that all departments understand their roles and how these affect the overall objective had a mean score (3.16) slightly above average and a significant amount of disagreement with the mean response, as indicated by the standard deviation value. The aggregate mean was 3.26 meaning most respondents agreed to the statements. The overall standard deviation of 1.33, pointing that there were outliers and clear disparity in the responses.

4.3.5 Summary of Level of Adoption of Technological Innovations

This subsection presents the results of the general overview of Unilever Ghana Limited's technological innovations practices in Kumasi. The means of these variables are depicted in Figure 4.4. From the descriptive statistics, the level of adoption of the study variables in Unilever Ghana Limited, Kumasi is averagely high as overall mean for each variable was below 3.26. It is, however, important to note that while the mean values of these variables are high enough to indicate considerable adoption; the standard deviation reveals a significant level of disparity in their rating. This indicates that there exists some inconsistency in the way the respondents rated the level of adoption of these practices.

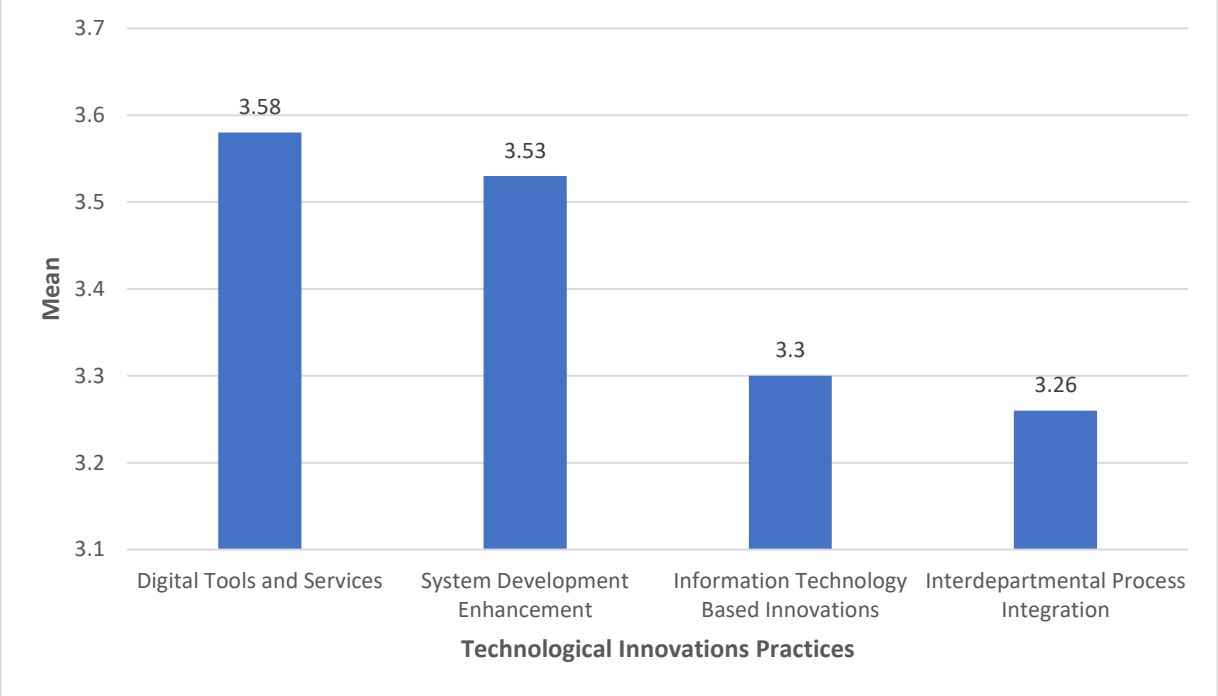


Figure 4.4: Summary of Means of Level of Adoption of Technological Innovations

Source: Researcher's Field Survey, 2022

From Figure 4.4, it can be deduced that` Unilever Ghana Limited, Kumasi utilize digital tools and services and system development most in their technological innovations practice. As per the means, they were significantly above the theoretical mean value, indicating their high level of adoption. Also, information technology-based innovations and interdepartmental process integration were the least practiced in Unilever Ghana Limited, Kumasi. Nevertheless, their mean values were slightly above average, indicating that the company perceived a high level of implementation of these technological innovation practices.

4.4 Effect of Technological Innovations on Organizational Performance of Unilever Ghana Limited

The study also established the level of organizational performance of Unilever Ghana Limited, Kumasi in relation to implementation of technological innovations. The respondents were asked to respond on aspects related to organizational performance. The

responses were rated on 5-point Likert-type scale of 1-Greatly reduced, 2-Reduced, 3-Constant, 4- Improved and 5- Greatly improved. The data was presented and summarized using means and standard deviations in Table 4.6.

Table 4.6: Outcome of Technological Innovations on Organizational Performance

Statement	Mean	SD
Responsiveness	4.26	.850
Asset efficiency utilization	3.70	1.17
Reliability	3.50	1.32
Flexibility	3.43	1.10
Productivity	3.29	1.29
Cost reduction	3.22	1.35
Aggregate mean	**3.57**	**1.18**

Scale: 1= Greatly reduced, 2= Reduced, 3= Constant, 4= Improved, 5= Greatly improved; N=115

Source: Researcher's Field Survey, 2022

From Table 4.6, on a five-point scale, majority of the respondents ranked the item "Responsiveness" as first, indicating that the respondents perceived a weighty improvement in the firm's responsiveness after the implementation of technological innovation practices. It had the highest mean score of (4.26) with a standard deviation value that indicated the disparities in responses from the mean. The respondents also indicated that asset efficiency utilization is improved. This was placed second, with a mean score (3.70) greatly above average and a significant amount of disagreement with the mean response, as indicated by the standard deviation. Again, the item "Reliability" had a mean score (3.50) above average indicating that the respondents agreed to the statement except that the standard deviation value depicted that there was a great variation in the responses

of the respondents. This indicates that reliability has improved after implementing technological innovation practices. The respondents ranked the item "Flexibility" as fourth with mean score of 3.43 which is above the theoretical (average) mean. This shows that the respondents agreed, indicating that technological innovation practices had improved the firm's flexibility. The items "Productivity" and "Cost reduction" had mean scores of 3.29 and 3.22 respectively, indicating that the respondents accepted the statements and with standard deviation values pointing that there were outliers and clear disparity in the responses.

The researcher also calculated the aggregate mean of the items presented to the respondents. The aggregate mean was found to be 3.57 which showed that, the respondents mostly agreed to the statements presented in Table 4.4. This implies that the level of organizational performance of Unilever Ghana Limited had improved after the implementation of technological innovation practices. The findings of this study were compatible with those of Grundiche (2014) who argued that for the company to ensure that it remains competitive in a dynamic environment and achieve its set objectives of profitability, sales volume and market share, it must make efforts to continually improve products and product lines to satisfy customer needs that keep changing through adoption of innovations and technology. This corroborates with the findings of Chesbrough (2010) that the effects of innovation were reflected in a wider variety of goods and services, increased quality of services, and process-oriented outcomes such as improved production flexibility and increased production capacity. Moreover, the findings of this study were in agreement with those of Lall (2000) who stressed that technological innovation is mostly being undertaken in the developing country's modem sectors especially those that have been in the manufacturing industry for long and with broad-based capital good sectors. These innovations bring change in a variety of ways including increased efficiency and

productivity from the simplicity of learning through practicing; advancements in design, construction and management of advanced industrial processes.

4.5 Inferential Analysis

Inferential statistics was used to make predictions and inferences in this section of the study. Pearson correlation and regression model was used.

4.5.1 Correlation Analysis

In this section, the researcher sought to establish if there is any correlation between the variables in the study. Pearson correlation was conducted to test the hypotheses because it involves a relationship between two variables. The elements of technological innovations were system development enhancement, digital tools and services. information technology-based innovations and interdepartmental process integration. A correlation table was presented to show the results in Table 4.7.

Table 4.7: Correlation Matrix of Variables

		O.P.	S.D.E.	D.T.S.	I.T.B.I.	I.P.I.
Organization Performance (O.P.)	Pearson Correlation	1	.602**	.599**	.554**	.726**
	Sig. (2-tailed)		.000	.000	.000	.000
System Development Enhancement (S.D.E.)	Pearson Correlation	.602**	1	.366**	.469**	.377**
	Sig. (2-tailed)	.000		.001	.000	.001
Digital Tools and Services (D.T.S.)	Pearson Correlation	.599**	.366**	1	.19	.435**
	Sig. (2-tailed)	.000	.001		0.1	.000
Information Technology Based Innovations (I.T.B.I.)	Pearson Correlation	.554**	.469**	.19	1	.321**
	Sig. (2-tailed)	.000	.000	.1		.005
Interdepartmental Process Integration (I.P.I.)	Pearson Correlation	.726**	.377**	.435**	.325**	1
	Sig. (2-tailed)	.000	.001	.000	.005	

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

Source: Researcher's Field work, 2022

The outcome revealed a positive and statistically significant correlation (r=.602, p = .000) exists between system development enhancement and organizational performance of Unilever Ghana Limited in Kumasi. This study's findings were in agreement with those of Kash and Rycroft (2011) who stipulated that system development enhancement is most commonly implemented to cut costs, improve performance, meet regulatory requirements or to take advantage of modem technologies and therefore a positive significant

relationship between them. The study also established a significantly positive correlation existed between digital tools and services and how Unilever Ghana Limited in Kumasi perform (r = .599, p = .000). Technology based innovations had a positive and significant association with performance of Unilever Ghana Limited in Kumasi (r = .554, p = .000). Further, this study established that that there is a positive as well as significant correlation between interdepartmental process integration and performance of Unilever Ghana Limited in Kumasi (r = .725, p = .000). The findings of this study were in agreement with those of Nadler and Tushman, (2015) who stipulated that interdepartmental process integration defines overall goals and departmental sub-goals so that each employee understands their roles and how they contribute to realization of overall objectives and consecutively affecting the nest step in the processes chain. Moreover, the findings of this study were in agreement with those of Lin and Ho (2017) who argued that joint effort has a solid, beneficial outcome on execution.

4.5.2 Regression Analysis

In this subsection of the study, the researcher presents the linear regression analysis based on the hypothesis in this study. The regression analysis was performed on technological innovation practice and organisational performance of Unilever Ghana Limited, Kumasi. Tables 4.8, 4.9 and 4.10 were presented to show the data on this part of the study.

Table 4.8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.799[a]	.638	.634	3.45147

a. Predictors: (Constant), Technological Innovation Practice

The R value represents the linear correlation coefficient of the variables whiles R^2 value indicates how much of the total variation in the dependent variable (organisational performance) can be explained by the independent variables (technological innovation practice). Table 4.8 revealed that correlation of the independent variable against the dependent variable is 0.799 with R square of 0.638. The adjusted R^2 is 0.634 and this indicates that 63% variance of organisational performance can be predicted from technological innovation practice but the remaining 37% of the total variation is unexplained because it may be predicted by unknown factors.

Table 4.9: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2576.914	1	2576.914	132.407	.000[b]
	Residual	2199.199	113	19.462		
	Total	4776.113	114			

a. Dependent Variable: Organisational Performance

b. Predictors: (Constant), Technological Innovation Practice

The ANOVA table tests whether the overall regression model is a good fit for the data. Table 4.8 shows that the independent variable (technological innovation practice) statistically significantly predicts the dependent variable (organisational performance), $F = 132.407$, $p < .000$ (i.e., the regression model is a good fit of the data). This indicates that technological innovation practice of Unilever Ghana Limited in Kumasi impacts the firm's performance.

Table 4.10: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	**Std. Error**	**Beta**		
1	(Constant)	1.981	1.946		1.018	.312
	Quality Management Practice	1.402	.122	.799	11.505	.000

a. Dependent Variable: Organisational Performance

Beta value in the table is used to determine how important and dominant technological innovation practice is in explaining the variance in the organizational performance of Unilever Ghana Limited, Kumasi. As the result presented in the Table 4.10 indicates that technological innovation practice exerted the strongest impact on organisational performance with the higher p-value, (r=.799), which is significant at the (p=.000) level. The implication is that the more Unilever Ghana Limited adopts technological innovation practices on how to perform their jobs effectively and efficiently, the more effective and efficient the company becomes, and this increase the work performance and achieving acceptable levels of quality in service delivery endeavors. The finding is consistent and in support of following recent past studies. The findings agree with the findings of Odumeru (2013) that significant and positive influence of technological innovation practices of Nestle Ghana Limited on organizational performance, thus supporting the stated hypothesis. This result is backed by the findings of Mutie (2018) that there exist a positive association between digital tools and services, information technology-based innovations and interdepartmental process integration, and organizational performance of government agencies m Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section of the study presents the summary of the study which includes the summary of the results, presentation of a conclusion based on the findings and a few recommendations.

5.2 Summary of Findings

The main purpose of the study was to examine the impact of technological innovation on the growth of an organization: a case study of this study further concentrates on Unilever Ghana Limited, Kumasi. The descriptive survey design was used for the study. The population of the study was all the members of staff of Unilever Ghana Limited, Kumasi. Purposive sampling technique was used to select one hundred and fifteen respondents for the study. Questionnaire was the main instrument used for the study. The data were statistically analysed using means, standard deviations, Pearson Product Correlation Coefficient and Analysis of Variance.

5.2.1 Summary of Findings

The findings of the study are summarised below:

Concerning the question that sought to examine the level of technological innovations adoption in Unilever Ghana Limited, Kumasi, the study found that the level of implementation of technological innovation practices in Unilever Ghana Limited, Kumasi to attaining excellence was high. This revealed that the general awareness of Unilever Ghana Limited, Kumasi towards technological innovation practice's adoption was relatively present.

On the question which seeks to measure the level of organizational performance of Unilever Ghana Limited, Kumasi in relation to implementation of technological innovations, the findings revealed that the level of organizational performance of Unilever Ghana Limited had significantly improved after the implementation of technological innovation practices. The study brought to light that there was a significant improvement in the firm's responsiveness, followed by asset efficiency utilization, reliability, flexibility, productivity and cost reduction.

With respect to the question that sought to the relationship between technological innovation practices and organizational performance of Unilever Ghana Limited, Kumasi, the findings indicated a statistically significant and positive relationship between technological innovation practices (system development enhancement, utilization of digital tools and services, information technology-based innovations and interdepartmental process integration) and organizational performance. The result of the regression analysis revealed that technological innovation practice was found to impact significantly and positively on organizational performance of Unilever Ghana Limited, Kumasi.

5.3 Conclusions of the Study

Based on the significant findings on the extent to which technological innovation practices is been implemented by Unilever Ghana Limited in Kumasi, it can be concluded that the level of adoption of technological innovation practices of Unilever Limited in Ghana is high. This empirical evidence from the study denotes that, general awareness of technological innovation practice by organizations in Ghana is relatively present. However, the application of technological innovation among firms in Ghana cannot be describe as a total approach.

This study also concludes from the analysis that, technological innovation practice had a positive and significant with organizational performance of Unilever Ghana Limited. This establishes that a higher unit in technological innovation practice cause a positive growth of a business firm. This establishes that technological innovation is one of the issues which if neglected could significantly affect the operational completeness of firm's product service delivery. It can also be concluded that these research results can help understand the current situation regarding technological innovation practices in Ghana and can therefore help business firms and participants in the delivery of quality service through the adoption of technological innovation practices.

5.4 Recommendations

Based on the findings of the study, the following recommendations are worth considering:
Business firms should be innovative about their technology so that they can be competitive in the market; technological innovation is found in bringing fresh ideas, firms should therefore develop boundary-spanning roles, recruit graduates that are analytical, interview new recruits about what could be changed in the company, seeks out different sources of research and knowledge.

Companies should train their employee so that they can master new innovation, so they can be productive, which will lead to better performance

There should be pragmatic strategic planning capability in order to bring about superior performance and ultimately sustained competitive advantage.

Companies should embrace marketing capability that can help in the effective and efficient management of marketing mix.

5.5 Suggestions for Further Studies

Based on the conclusions and recommendations of the study, the researcher suggests that:

It is recommended that a similar research ought to be carried out but focus on other branches of Unilever Ghana Limited for comparison purposes. This would help to establish whether Unilever Ghana Limited has a similar operational experience with regard to adoption of technological innovation. However, this is expected to be different due to difference in business environment.

The study also suggested that a similar study be conducted but focusing on the public sector. This would help to establish the differences that exist between public and private sector with regard to adoption of technological innovation. Though a very thin line exists between the two, the study would help to elucidate on how they differ.

Further, the study suggests that a more extensive study be conducted to establish the influence of the specific aspects of the different types of technological innovations and this would help the business firms to identify the aspects that have more weight than other and thus have clarity with regard to what to adopt and what not to adopt.

The study recommends for a study on the factors that affect implementation of technological innovations. This study found that the adoption level of technological innovations is low and thus establishment of the factors leading to this is recommended.

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APPENDICES

QUESTIONNAIRE

The purpose of this questionnaire is to gather information to conduct research on **the impact of technological innovation on the growth of an organization; a case study of Unilever Ghana Limited in Kumasi Metropolis in the Ashanti Region of Ghana**. Your response will be treated strictly confidential. Please tick appropriately in box [√] corresponding to your choices.

SECTION A: Background Information

1. Gender?

   a. Male [ ] b. Female [ ]

2. What is your age (in years)?

   a. 20-25 [ ] b. 26-30 [ ] c.31-35 [ ] d. 36-40 [ ]

   e. 41-45 [ ] f. 46-50 [ ] g. 51-55 [ ] h. 56 and above [ ]

3. What is your highest academic qualification??

   . Master's Degree [ ] b. Degree [ ] c. Diploma [ ]

   d. WASSCE/SSCE [ ] e. Basic [ ] f. None [ ]

   g. Others (specify) ……

4. How long have you worked with this organization?

   a. Less than a year [ ] b. 1 – 5 years [ ] c. 6 – 10 years [ ]

   d. 11–15 year [ ] e. 16 – 20 years [ ] f. 21 – 25 years [ ]

   d. Above 25 [ ]

SECTION B: LEVEL OF TECHNOLOGICAL INNOVATIONS ADOPTION

Please, respond to the statements by ticking [√] on the 5-point Likert-type scale using the following keys: **5=Strongly Agree, 4= Agree, 3=Neutral, 2=Disagree, 1=Strongly Disagree**, as sincere as possibly

No.	Statements	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
System Development Enhancement						
5.	The organization frequently adds new capabilities to an existing system					
6.	New features are often added to the existing system					
7.	Identified defects are corrected on a continuous basis					
8.	The organization modifies systems on a continuous basis to enhance efficiency					
9.	The organization frequently adds new capabilities to an existing system					
Digital Tools and Services						
10.	The organization is connected with an intranet					
11.	The organization is connected with an extranet					

12.	The organization has an efficient human resource management system					
13.	The organization has an efficient customer relationships management system					

Information Technology Based Innovations						
14.	Organization makes use of radio frequency identification systems (RFID)					
15.	The organization has automated storage and retrieval system					
16.	The organization mates use of global positioning systems					
17.	Electronic data interchange is widely practiced in the organization					
Interdepartmental Process Integration						
18.	There is continuous interaction between departments					
19.	There is efficient flow of information between functions and departments					
20.	Collaboration between departments is encouraged in the organization					
21.	All departments understand their roles and how these affect the overall objective					

SECTION B: LEVEL OF ORGANIZATIONAL PERFORMANCE OF UNILEVER GHANA LIMITED, KUMASI IN RELATION TO IMPLEMENTATION OF TECHNOLOGICAL INNOVATIONS

In your own opinion how should you rate the organization performance indicators below after implementation same technological innovation practices in the firm?

No.	**Performance Indicator**	**Greatly Improved 5**	**Improved 4**	**Constant 3**	**Reduced 2**	**Greatly Reduced 1**
22.	Cost reduction					
23.	Productivity					
24.	Flexibility					
25.	Reliability					
26.	Responsiveness					
27.	Asset efficiency utilization					
If others, please specify and rank						