UNIVERSITY OF CAPE COAST

ORGANIZATIONAL CULTURE AND INNOVATION PERFORMANCE OF SOFTWARE DEVELOPMENT FIRMS IN GREATER ACCRA REGION

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BY

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DECLARATION

Candidate's Declaration

I hereby declare this dissertation as my original research and no part of it is been presented for another degree in this University or elsewhere.

Candidate's Signature …….. Date ……

Candidate's Name: Boadi Foster Kwasi

Supervisor's Declaration

I hereby declare preparation and presentation of this dissertation were supervised according to guidelines on supervision of research laid down by University of Cape Coast

Supervisor's Signature …….. Date ……..……

Supervisor's Name: Dr. Edward Nii Amar Amarteifio

ABSTRACT

Through the knowledge-based theory, this study examined organisational culture and innovation performance of software development firms in Greater Accra region. Specifically, the study evaluated organization cultural variables that are present in the software development firms. Secondly, it found out the influence of employee's empowerment on innovation performance. Thirdly, this research assessed impact of workplace flexibility on innovation performance and lastly, this research assessed relationship between teamwork and innovation performance. By adopting the quantitative research approach and the descriptive-inferential survey design, this study's data was acquired by adopting structured questionnaire. With sample size of 108 respondents, this study revealed that three cultural variables were present or exhibited by employees in all the Software Development Firms. Again, the research found that there was a positive and strong relationship between employees' empowerment and innovation performance. In addition, it was shown in this study that there was a positive and strong relationship between workplace flexibility and innovation performance, and last but not least, this study found strong positive relationship between teamwork and innovation performance. This study concluded and recommended that specific cultural practices such as training, delegation, group spirit, helping each other, friendliness and coordination, the adoption and utilization of modern technology, openness to new ideas, better relationships, involvement in decision-making and recognition could facilitate the innovative performance of the workers in the software development firms.

KEY WORDS

Innovation

Organizational Culture

Performance

Software Development

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DEDICATION

To God for His Grace, to my beloved wife, Catherine Mireku and children for their support throughout my academic life.

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EMP	Empowerment
TMW	Teamwork
WOF	Workplace Flexibility

CHAPTER ONE

INTRODUCTION

Every organization, private or public, would want to find new ways to create novel products or services or enhance their current products and services to lead competitors and satisfy the ever-changing consumer preferences. Workers and for that matter their innovativeness is one of the most relevant factors that could contribute to creation of novel products or services. Organizations could provide the conducive environment or workplace setting that motivates workers to be more innovative. This dissertation evaluated effect of organizational culture on innovation performance of software development firms in Greater Accra region, Ghana. This introductory chapter of the dissertation discussed the background information, problem statement, this study's purpose and specific objectives, research question and hypotheses, significance, delimitations and the organization of the whole study.

Background to the Study

Innovation has become key to organizational survival due to the current global competitiveness and the occurrences of global uncertainties with their associate severe impacts (Erikson & Johnson, 2020; Lopes, Scavarda, Hofmeister, Thome & Vaccaro, 2017). The advancements in technology, greater rate of product development and shorter life cycles of products call for the need of innovation in almost all organizations – small, medium or large (Shahzad, Xiu, & Shahbaz, 2017). Innovative strategies are now part of corporate strategies in order for

companies to achieve competitive advantage in their markets (Dereli, 2015; Nuruzzaman, Singh & Pattnaik, 2019). Clients and consumer preferences keep on changing which has prompted organizations to be flexible and dynamic in their operations (Randhir, Latasha, Tooraiven & Monishan, 2016).

According to Manders, De-Vries and Blind (2016), innovation requires that organizations, as well as their employees, depart from the existing rules, principles, practices and ideas so as to create new concepts and products to keep a company ahead of competitors. It involves new means of employees coming up with fresh ideas on technological developments, product and market strategies. These innovative ways and thoughts can be very radical (Flor, Cooper & Oltra, 2018). Innovation Management is considered as complex process due to the numerous functional actions that are involved. That is, the adoption of traditional approaches like huge investment in research and development may not be sufficient to give life changing solutions. Abdel Razek and Alsanad (2014) and Tellis, Prabhu, and Chandy (2009) also pointed to the benefits of ascertaining and evaluating factors that hold the potential of influencing organizational members' innovative performance at the workplace, like culture and and assessing their interrelationship.

Culture of an organization has attracted more attention because of its powerful role in enhancing an establishment's future potentials emanating from managerial perspective (Fisher & Wilmoth, 2018; Bendak, Shikhli & Abdel-Razek, 2020). According to Watson (2006), culture emerged through metaphor of business "as something cultivated". However, Matsumoto (1996), indicated that culture is more conventionally view like group of values, behaviours, attitudes which shared

and exhibited through individuals, from one generation to the other. Organizational culture is one of the major tools and approaches that back development in organizations by dealing with organizational members.

However, each and every organization has their own culture and their performance could be affected by the way their policies, systems, activities and operations are carried out (Belias & Koustelios, 2014; Kegan & Lahey, 2016). Taneja, Sewell and Odom (2015) believe that an organization's culture should require workers or employees to perform their responsibilities effectively and efficiently. Shahzad et al (2017) revealed that culture in an organization is core pillar and depicts survival all enterprises. Organizational members' satisfaction and performances, in all angles, are induced by corporate culture. For instance, software developers should have an open mind as well as a relaxed workplace environment to brainstorm and transform innovative concepts and ideas into useful software applications that the world need.

The kind of creative and innovative environment in every enterprise could be established by paying more attention to the culture of that enterprise or organization (Tian, Deng, Zhang & Salmador, 2018). A strong and positive culture is believed to motivate organizational members to undertake flexible and dynamic decisions as they express their innovative concepts and ideas to improve performance (Ali-Taha, Sirkova & Ferencova, 2016). The organizational culture concept is very popular within management, organizational behaviour, marketing and cultural anthropology (Alvesson, 2015; Hogan & Coote, 2014). Organization culture describes the beliefs, principles, systems and values that give the norms of

expected behaviour which organizational members could follow (Hogan & Coote, 2014). These beliefs, principles, systems and values could be shared and exhibited by workers and managers at all levels in an institution.

Organizational culture is believed to be an invisible pillar and powerful social force which significantly influences managers and employees' behaviours, innovative performance, financial and market performance, operational performance, workers' attitudes and corporate efficiencies and effectiveness (Hogan & Coote, 2014). Chang and Lin (2015) and Lee, Shiue and Chen, (2016) also indicated that culture has greater influence on knowledge management and effectiveness than an organizational structure. The culture of an organization induces workers' behaviour beyond the official procedures, authority and control systems that are established by management. As a result, the culture of an organization serves as a powerful tool or means through which desired performance outcome could be achieved.

Organizations can establish cultures that enhance employees to generate innovative ideas, contribute to management decisions and strategy formulation and implementation (Brettel, Chomik & Flatten, 2015). It is believed that establishing and promoting one right culture is the precondition for high innovative performance of workers and an improved general organizational performance. However, some researchers believe that there are two scenarios that relate to cultural differences this may exist in organizations. First, they believe that an organization, especially the small and medium ones, could have a culture of single uniformity or

homogeneous in nature which could be exhibited by organizational members across the whole institution (Martin, 2004; Bendak et al., 2020).

Secondly, they believe that an organization could have multiple cultures and subcultures which exist across the whole organization (Cameron & Quinn, 2011; Rainey, 2009). This second scenario is often found in large and multinational organizations. Therefore, managers can concentrate on dealing with one organizational culture or evaluate the diverse cultures and subcultures in order to ascertain if common cultural features exist. Jaskyte and Kisieliene (2006) also indicated that would depend the contents of that culture. Hence, there is the need to enhance and promote innovative culture in organizations so that employees can amicably, without fear, generate ideas for new products, services and processes.

Thus, as revealed by Buschgens, Bausch and Balkin (2013), employees' innovativeness requires a cultural climate and behaviour at the workplace that promote creativity. Bendak, Shikhli and Abdel-Razek (2020) and Crossan and Apaydin (2010) defined four cultural features, consisting of freedom, creativity, teamwork and risk taking, which have the potential to facilitate innovation. To prevent the risk of extinction, organizations all over the world are required to respond quickly to external environmental changes that have characterized modern business activities and operations. Vila, Perez and Coll-Serrano in 2014, opined that employees of technology firms such as software developers should be highly alert to novel opportunities in the business environment. They should also have a powerful ability to present products to clients and the ability to generate digital ideas and solutions. From the knowledge-based theory's perspective, the know-

how or knowledge of organizational members is an essential resource and it is shared, utilised and carried through strong organizational cultural variables of flexibility, empowerment and teamwork (Shahzad et al., 2017).

Statement of the Problem

Culture of an organization is considered as key to foster processes and behaviours that could promote innovativeness of organizational members (Ali-Taha et al., 2016; Shahzad et al., 2017). The culture of any organization is in the core of innovation performance of employees. Without innovativeness, organizations may cease to exist and so managers cannot ignore promoting beliefs, systems and values that could ensure high innovativeness (Ansoff et al., 2018). Therefore, the study of processes and systems that could enhance and promote innovation should be of great interest to everyone (Chiva, Ghauri & Alegre, 2014; Bendak et al., 2019).

In addition, Feldman (2014), Hausman and Johnston (2014), Kennedy, Whiteman and van den Ende (2017) and Solvell (2015) highlighted the power of innovation for long term benefits to firms and nations. Looking at the current dynamic and complex environment in which businesses compete, the significance of continuous innovation, through organizational members' empowerment, workplace flexibility and teamwork, has never been greater (Shahzad et al., 2017). As a result, empirical interest on the insight of innovation keeps on increasing. Unlike most of the organizations in Africa, businesses in advanced countries especially the firms in the technology industry, have the obsession of pursuing radical and new concepts through innovation in order to stay competitive and

survive in uncertainties (Mahmoud, Blankson, Owusu-Frimpong, Nwankwo & Trang, 2016; Woschke, Haase & Kratzer, 2017).

Booth (2015), Karakara and Osabuohien (2020) disclosed that modern businesses and management face many challenges and one that stands out is the competitive pressure forcing organizations to reassess their systems to come up with modern products and services to survive and follow the rapid pace of global market's evolution. According to Chen, Huang, Liu, Min and Zhou (2018) and Hertenstein and Williamson (2018) organizations do accept that the formulation of innovation strategies is easier than their implementation. But the way organizational members behave in the workplace environment is an important cause of the implementation difficulty of innovation strategies.

However, organizations could easily implement such strategies and achieve superior innovation performance through shared norms and values (Shahzad et al., 2017). Many firms in Ghana still face the challenge of managing culture in ways that could promote innovativeness (Anning-Dorson, 2017; Dansoh, Oteng & Frimpong, 2017). Generally, a few studies focused on the systems and processes that support innovation in organizations that provide services (Ahiabor, 2014; Shahzad et al., 2017). In Ghana, for instance, there are no or limited studies on how organizational cultural systems can influence the innovativeness of organizational members in service firms such as software development companies (Atuahene & Baiden, 2018; Dansoh, Oteng & Frimpong, 2017). Bendak, Shikhli and Abdel-Razek (2020) also recommended exploration of how organization cultural variables such as workplace flexibility and teamwork could be used as a force to promote

innovative performance of organizations. In the light of these, this dissertation would examine software developers' organizational culture and innovation performance.

Purpose of the Study

Major aim of the dissertation was to evaluate organizational culture and innovation performance for software development firms who are located in Greater Accra region. To achieve its main aim, specific objectives were formulated to:

1. assess organization cultural variables which present in the software development companies in Greater Accra region.
2. examine the influence of employees' empowerment on innovative performance of software development firms.
3. Evaluate impact of workplace flexibility on innovation performance of software development firms in the Greater Accra region.
4. examine relation between teamwork and innovation performance of software development businesses in Greater Accra region.

Research Question

This study set the following question to achieve the first objective.

1. What organizational cultural variables exist in software development firms in Greater Accra region?

Research Hypotheses

This dissertation formulated the following hypotheses to achieve second, third and fourth objectives.

$H_{1:}$ Employees' empowerment positively influences performance of software developers in Greater Accra region.

$H_{2:}$ Workplace flexibility positively affects performance of software developers in Greater Accra region.

$H_{3:}$ Teamwork positively relates to innovation performance of software developers.

Significance of the Study

This study provided an in-depth knowledge and insight on the organization cultural factors that really matter in enhancing innovation performance in software development enterprises. It was the hope of this study to help organizations, especially technology firms, to understand more, the cultural variables that are needed in the workplace to influence organizational members to generate new ideas and concepts to ensure continuous survival of their firms. The study will also serve as an input for organizational policy formulation to promote conducive working environment. It revealed what organizational members actually want in terms of culture at the workplace. Furthermore, it served as source of information or reference for researchers who would like to conduct similar studies.

Delimitations

The study concentrated on full-time organizational members of Software Development firms in the Greater Accra region. The target population was specifically staff members who have worked with their firms for a minimum of one year. The study also only focused on organizational culture and innovation performance.

Study's Organization

This dissertation comprised chapters of five. First was an introductory part, where you will find this study's purpose and specific objectives, this study's question and hypotheses, etc. Chapter two followed, where there was a review of literature including theoretical and empirical works that underpinned this study. Third chapter revealed the research methods, research design, sampling and its procedures, population, the study's data collection and instrument, data analysis procedures which were used. Chapter four discussed results or findings based on literature. Chapter five, the final and last chapter, gave summary of main findings.

CHAPTER TWO

LITERATURE REVIEW

Introduction

The dissertation examined role of software developers' organizational culture on innovation performance. This chapter reviewed present studies of organizational culture and innovation performance. Specifically, this chapter covered issues such as the review of theory that supported the study, innovation and its types, organizational culture and innovation, review of empirical studies and this study's conceptual framework.

Theoretical Review

The dissertation was supported by knowledge-based theory. Theories of firms are conceptualizations and models of businesses that discusses their behaviour and structure. The theories of the firm are abstractions of real-world business operations that are formulated to tackle or deal with specific group of business characteristics and behaviours (Machlup, 1967). Consequently, Grant (1996) opined that there are several theories and models of businesses which compete in giving rival meanings to the same issue and complement each other in discussing different business phenomena.

Knowledge-based theory believes that knowledge is the best critical resource of any organization (Anastasiou, 2017). According to Hughes, Hughes, Hodgkinson, Chang and Chang (2021), the theory posits that knowledge in an organization is found and carried through several organizational entities such as

culture, policies, values, systems, routines and ultimately workers of the organization. The originators of the theory indicated that knowledge-based resources are complex to emulate and socially complicated (Grant, 1996; Low & Ho, 2016). Therefore, they believe that heterogeneous knowledge bases and abilities of organisations are factors of continous competitive advantage and high firm performance (Grant, 2003; Shafiee, 2021). Emerging from the literature of strategic management, the knowledge-based theory builds on and expands the resource-based view of organizations which was promoted by Penrose (1959) and other researchers like Barney in 1991, Conner in 1991 and Wernerfelt (1984).

The resource-based theory accepts the significant function of knowledge in organizations which aid in the achievement of competitive advantage (Maskell, 2001). However, the knowledge-based theory proponents believe that the resource-based view does not go far enough to discuss the full relevance of knowledge (Grant, 2003). Resource-based view in particular see knowledge a general resource rather than having unique features in a firm (Kraaijenbrink, Spender & Groen, 2010). It does not differentiate among the several different types of knowledge capabilities of a firm. Proponents of the knowledge-based theory believe that technology carries a relevant role in the operations of a firm or organization (Grant & Baden-Fuller, 1995). According to them, information technological systems could be utilized to synthesize, analyse, enhance, share and expedite large sale intra and inter-organizational knowledge management (Alavi & Leidner, 2001).

Organizational Culture

Organizational culture is a concept largely studied in science of management. The concept is commonly seen to be a crucial element for organizational success (Shahzad, Luqman, Khan & Shabbir, 2012). However, Watkins (2013) said that "while there is universal agreement that exists and plays a crucial role in shaping behaviour in organizations, there is little consensus on what organizational culture actually is". In fact, there are several definitions in literature. The definition which is simplest and commonest is, "organizational culture is the way we do things around here to succeed" (Lundy & 1996). It means that organizational culture is about how things are done and managed in an organization.

Schein (2004) also defined culture as "an abstraction but its behavioural and attitudinal consequences are very concrete". He believes that culture could be a dynamic structure that is established by relationships and interactions with other people and influenced by the behaviour of leadership. In addition, it is the composition of systems, rules, structures, norms and routines that direct, shape and control our behaviour. The definition by Schein also relates to group culture or organizational culture. He indicated that "dynamic processes of culture creation and management are the essence of leadership". However, Schein does not support the assessment of culture in an absolute sense since there are no bad or good culture. What is necessary is the balance between culture and the surrounding environment, which is called societal culture.

Conrad and Poole (2012) concluded that organizations, firms and all other institutions are located and live in communities. Organizations are not isolated or

be comprehended out of our society's practices, structures, assumptions, beliefs, tensions as well as the approaches of dealing with the tensions in the society. Schein (2004) identified some outline of categories by several researchers which ascertained types of cultures through common or shared characteristics like group norms, values, observed behavioural regularities, formal philosophy, climate, rules, among others. He opined that although these characteristics are cultural attributes seen as cultural manifestations, the characteristics themselves cannot be considered as culture.

In addition, Schein (2004) said that culture is normally a feature which is constant and difficult to be altered. It is exhibited through every area of society's functioning and bond every aspect in a consistent manner. He identified and differentiated three (3) ranks of culture. Artefacts consist the highest level of culture. The artefacts are the products, physical environment, styles, observable rites, stories, myths, among others. The second level comprises of goals, values, philosophies, strategies and beliefs. These can be elaborated and changes made. The primary rank or level of culture is the fundamental underlying axioms. They comprised of the unintentional beliefs taken for granted, thoughts, assumptions, feelings. These comprise origin of principles and behaviour. This is considered as the core culture or deepest cultural level.

Schein (2004) defined culture, "a pattern of shared basic assumptions that was learnt by a group as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid and therefore to be taught to new members as the correct way to perceive, think and feel in relation to

those problems". Again, Deshpande and Webster in 1989 also undertook comprehensive research on the approaches to culture of organizations. Deshpande and Webster differentiated the following main understandings of culture of organizations. First is exogenous, independent construct. Second is endogenous, independent construct. Third is culture being a metaphor for knowledge systems of organizations.

Fourth is culture being considered as a metaphor for common signs and descriptions. Fifth is culture being a metaphor of a subconscious mindset found in several philosophies in the organizational sciences. Deshpande and Webster (1989) assessed the philosophies regarding their potential merits to marketing management knowledge and saw that an emerging body of cultural knowledge of the organization has led to several conceptual, definitional and methodological challenges that had to addressed by researchers. In order to address or deal with the insufficient consensus on the meaning as well as the measurement of culture in the organization, they defined culture in organizational context as "the pattern of shared values and beliefs that help members of an organization understand why things happen and thus teach the behavioural norms in the organization".

On the other hand, Hurley and Hult in 1998 also defined organizational culture as "system of beliefs in which actors internalize some meaningful order with respect to the organization". Several researchers such as Cameron and Quinn (1999), Valencia, Valle and Jimenez (2010) have attempted to perceive culture of organization as "the values, beliefs and hidden assumptions that organizational members have in common". This perception stands on the assertion that unseen

assumptions or axioms could be revealed by displayed values and beliefs. Consequently, in several empirical studies, what are usually explored are values, beliefs, artefacts and not the main culture of organizations.

The challenge is that several beliefs, values and artefacts can be perceived or understood in many directions which could mislead an individual or group to the fundamental axioms or assumptions that consist the actual core of culture. On the contrary, according to Mazur and Zaborek (2016), various research methods such as quantitative studies avoid first hand rigorous interactions with organizations as well as their workers. This looks relevant to formulate primary assumptions. They argued that next best thing would be to depend on proxy or constructs which are easily observable like beliefs, values and common behavioural patterns.

Organizations have different cultures and even there are cultural differences among the departments or units of an organization. The culture of an organization could be more or less ethical, more or less innovative (Riivari et al., 2012). However, according to Mazur and Zaborek (2016), we could see one culture of particular group of persons at a particular period of time. According to them, the notion by Oliver and Kandadi (2006) that "organizational culture plays a key role in developing knowledge culture" is misguided.

Mazur and Zaborek (2016) believe that unless the authors perceive that the present culture is better or worse and it serves as the beginning path on the route of changing it to a culture of innovativeness. They further accept that the culture of the organization could be dynamic to innovation. However, the culture of innovativeness does not isolate itself from the generic culture of an organization

but innovation culture is rather achieved through the modification processes of an organization's culture, enhancing new knowledge creation through the utilization of novel knowledge, actions, services or products (Herkema, 2003; Simpson et al., 2006).

Innovation

Today, innovativeness has become relevant to the life of all businesses. It is associated with the strategic goal of pursuing differentiation, that is promoting a firm's monopolistic influence with regards to consumers (Porter, 1980; Schumpeter, 1934). The study of innovation has been carried in several areas or fields and can be categorized in many perspectives such as newness and oldness (Tidd & Bessant, 2011). It can also be categorized by whether it is channelled to a product, service, business system market segment or manufacturing procedure (Jenssen & Nybakk, 2009). Damanpour (1991) showed that previous studies have stressed the relevance of differentiating among the types of innovation since it aids in ascertaining the pull and push factors of innovation.

In the manufacturing industry, Freeman and Soete (1997) defined innovation to be "the technical, design, production, management as well as commercial activities that are engaged in the marketing of new or an enhanced product or the initial commercial usage of a novel or improved equipment or process". On the other hand, Kogut and Zander (1992) in their definition of innovation emphasized that "innovation was not generally solely about the conception of new products or services or largely improved products and services

but includes successfully distributing goods or services to a market or a final consumer.

Organization on Economic Co-operation and Development (OECD) in 2005 indicated that innovation is the successful implementation of novel product and service, production procedure, marketing approach, business practice, external relations or workplace environment. Innovation covers production system design, product or service introduction processes, starting point of manufacturing, product design and packaging. "This includes the generation of opportunities, their selection and transformation into artefacts (manufactured products) and activities (services) offered to customers and the institutionalization of improvements in the NPD (new product development) activities themselves" (Ale-Ebrahim, Ahmed & Taha, 2010).

Ale-Ebrahim et al., (2010), Totterdell, Leach, Birdi, Clegg and Wallet (2002) revealed that innovation is perceived as a complex tool that includes aspects of technical (examples are new production techniques and novel products), non-technical (examples are new organizational forms and markets), product innovations (novel products or services) and process innovations (examples are new manufacturing methods and new types of organization. Laestadius and Rickne (2012) opined that modern technological innovation can be a critical factor in an organization's competitive life specifically in pursuing successful product or service innovations in small or medium enterprises which can result in growth in terms of investment, sales turnover, revenue and investment over a period of time. Product or service innovation is significant to long term growth of organizations

since it is important to adjust quickly to changing customer taste and preferences, respond to the incremental product design complexities and the frequent advancements in technology (Chen, 2008). On an aggregate level, SMEs spend less on research and development than large firms (Johansen, 2008).

The two approaches to distinguishing among the kinds of innovation are taxonomy, which was indicated by Schumpeter in 1934. With regards to taxonomy, difference is stated among the kinds of innovation based on objects of change, for example, market, process, organizational and product innovations. The second approach to differentiating between kinds of innovation is on "newness or radicalness". With this second approach, radical innovations are the revolutionary changes, which in rare circumstances though, could lead to a completely novel technological discovery (Dosi, 1982).

There are four (4) distinguished types of objects of change. They are process, organizational, market and product innovations (OECD, 2005). In addition, the rate of amendment or change related to innovation could be shown in terms of absolute novelty or drastic improvement. Entrepreneurs and academics could interpret innovation in different ways. Entrepreneurs emphasise innovation as "something that makes money" whilst academics perceive innovation as "scientific novelty" (Massa & Testa, 2008).

Similarly, Jensen and Nybakk (2009) pointed out or disclosed that three quarters of the innovations introduced by organizations were already in existence or available on national and international markets. Amara and Landry in 2005 emphasized the significance of treating innovations separately depending on their

rate of newness because many companies nowadays could be tagged as innovative. OECD (2005) defined organizational innovation as "the implementation of a new organisational method in the firm's business practices, workplace organisation or external relations". The focus of organizational innovation could be an increment in performance through reduction of administrative and transactional costs, enhancing satisfaction at workplace as well as labour output, getting ready access for non-tradable facilities including non-codified external information or minimizing supplier costs.

OECD (2005) revealed that there are three main kinds of organizational innovation. First main kind is "organizational innovation in business practice". This refers to the "implementation of new methods for organizing processes and routines for job duties." The second type is "organizational innovation regarding workplace organization". This uses "the application of novel techniques for sharing responsibilities and decision making among workers for the allocation of duties within and among company activities or departments." It also involves new methods for structuring and integrating several activities of business. The last but not least type is "the organizational innovation in external relations which have not been used before in the organization and it is the outcome of strategic decisions by management".

Process innovations could be defined as "novel elements or systems which are introduced into a company's service or manufacturing operations". Process innovations do not render services or manufacture goods but induce, indirectly, the production of goods and service (Damanpour & Gopalakrishnan, 2001). These

innovations have similar features with administrative innovations and influence organizational members as well as relations among the members. In simple terms, process innovation is "the reengineering and improvement of internal operations of business techniques".

The process innovations include several aspects of an organization's functions, involving research and development, technical design, management, commercial and manufacturing activities (Freeman & Soete, 1997). Process innovation deals with the provision or enhancement in techniques and growth in systems. For example, innovation in skills, systems, techniques or technology that is utilized in the process of changing inputs or raw materials to outputs. Therefore, in a manufacturing work, process innovation could mean new or enhanced techniques, knowledge, tools and devices in producing particular products (Oke et al., 2007).

Product innovation refers to "the production of new products from new materials or the alteration of current products to meet customer requirements" (Amara & Landry, 2005). It is again referred to as "the creation of new products and services so as to reach new customers or markets or satisfy existing markets". Product innovations are undertaken by firms to respond to market demand for new goods or the desire of managers to acquire new customers (Martinez-Ros, 1999). The product innovation seeks to create new physical goods, services, emerging technologies and intellectual properties which are tangible to the customer (Bhoovaraghavan, Vasudevan & Chandran, 1996). They possess objectives such as responding to customer needs and demands or competing with other firms.

According to Oke, Burke and Myers in 2007, product innovations are the most popular forms of innovations which could involve new products or enhancements in current products. It could be referred to as "new improvements in the activities which are performed to provide the main product and make it more attractive to customers". These utilize modern technologies and are dependent on new uses or combining current technologies or knowledge (OECD, 2005).

Furthermore, market innovation is the creation of novel marketing techniques including drastic amendments in packaging or product design, pricing, product placement and promotions. The aims of these innovations are to properly deal with customer concerns, access more customers and newly position a company's offer in an industry with the aim of increasing sales and revenue (OECD, 2005). The outstanding characteristic of this innovation could be development of novel marketing techniques which have not been used before by the organization. In addition, it is always a part of a new marketing strategy which forms part of a total departure from the organization's current marketing techniques.

According to Johanssen (2008), marketing innovations are concerned with market selection and the marketing mix so as to meet consumers' preferences. Companies should continuously undertake market innovations since state of the art applications on the internet makes it easier for competing firms to access consumers around the globe. Gunday, Ulusoy, Kilic and Alpkan (2011) opined that marketing innovations form an essential part of fulfilling customer preferences and dealing with market threats and also taking advantage of opportunities in the market.

Therefore, market innovations have to geared towards meeting market demand, taste and preferences.

Importance of Innovation

In our modern day of a constantly changing world and the business environment, innovation is a major tool for growth. Innovation could assist companies to get access to new customers, increase the size of current share of market and gives organizations or companies the sword to survive in their industries competitions. As a result of the heavy competitions, organizations have begun to grasp the significance of innovation in their business operations. The frequent and sudden changes in technologies and stiff international competition quickly mar value added to products and services (Gunday et al., 2011).

Innovations are indispensable part of organizational strategies for many reasons. Innovations help to implement more effective production processes, perform better in the industry, enhance consumers' perception about an organization's reputation and help to achieve long term competitive advantage and growth. Innovation is considered as a complicated multi-dimensional construct. The business world is characterized by frequent changes, several different market or consumer preferences and global competitions. For these reasons, organizations have to adopt and utilize modern technologies and find new processes so as to stay relevant and profitable (Vanhaverbeke & Peeters, 2005).

Innovation that has the capability to satisfy customer needs and provide modern products or services, has been one of the relevant goals of organizations.

Innovation is usually associated with providing sustainable market based on the creation of novel and high-quality superior products, services or processes (Carayannis & Gonzalez, 2003). With innovation, organizations become more competitive, according to Hui and Qing-xi (2006). Innovation expands and sustains the performance of organizations, foster industrial competition, improve citizens' standard of living, ensures better quality life and consequently lead to national development (Gopalakrishnan & Damanpour, 1997).

Organizational Culture and Innovation

At latter part of twentieth century, a growing reliance of organizations' competitive advantage on their innovative abilities led to the studying of the determinants or factors of organization innovativeness very necessary. In 1997, De-Long stated that "any knowledge management strategy designed to improve business performance must address three components". The three components include the following. First, the job procedures or work activities which produce and also leverage organizational knowledge. The second component is the technological systems to enhance knowledge capture, use and transfer. The third component comprises behavioural practices and norms which are usually perceived as an organizational culture which are relevant to effective knowledge utilization.

The significance of culture of a firm in innovation and management of knowledge has been emphasised in various research papers (Alavi, Kayworth & Leidner, 2005; Chang & Lin, 2015; Janz & Prasarnphanich, 2003; Ruppel & Harrington, 2002). Research works which have dealt with the determinants of organizations' innovation revealed that culture is a critical pillar in enhancing

intensity of innovative capacity and its results or outcomes (Higgins & McAllaster, 2002; Jamrog et al., 2006; Jassawalla & Sashittal, 2002; Laforet, 2015; Riivari et al., 2012; Valencia et al., 2011).

Mazur and Zaborek (2016) identified two categories of publications among the set of research works about relations of organization culture and innovation. Their first category of papers worked on culture's restrictive effect on innovation. Other papers in this category outlined "organizational culture as an innovation strategy barrier." Hurley and Hult (1998) explained the capability to innovate as "the ability of the organization to adopt or implement new ideas, processes, or products successfully". This capability is powered by the balance of culture and strategy because these have to come together to influence innovations.

The strategies of any organization could fail if its culture does not support its strategies. McCracken (2006) spelt out about such scenarios by saying "culture eats strategy for breakfast". Hence, in the situation of strong organizational culture, "it may be more appropriate to tailor one's strategy to one's culture, rather than the other way around". The second category of papers emphasized organization cultural qualities which back innovation. The papers here explained innovation cultures, sharing cultures, knowledge-oriented cultures, among others. Many studies that concern "the effect of organizational culture on innovation differentiate kinds of innovation to link them with the best appropriate or supportive kinds of culture, i.e., adhocracy culture verses hierarchical culture" (Naranjo-Valencia et al., 2011).

Empirical Review

Proper organizational culture can enhance innovation that in turn could actually improve performance of an organization. There are four (4) distinguished performance aspects that are used in literature to depict organizational performance (Hadedoorn & Cloodt, 2003; Yilmaz et al., 2005). They are innovation performance, market performance, financial performance and production performance. Many studies based on culture-innovation performance relations give positive assessment of proper culture leading to higher innovative performance and resulting in increased organisational performance.

Based on the configuration theory, Chen, Huang, Liu, Min and Zhou (2018) in China conceptualized "fit as profile deviation and investigated fit in-between an institution's culture and their innovation path." Their research data was sourced from one hundred and eighty-three (183) organizations in China 183 and they assessed "the assumption that greater fit between organizational culture and innovation strategy promotes superior innovation speed and quality of innovation." They found, "in the group of organizations exhibiting either exploratory or exploitative innovation strategy, the more similar the organizational culture configurations are to those of the top performers, the higher their innovation speed and innovation quality are". Second, they found that, "the group of organizations exhibiting ambidextrous innovation strategy, the fit between organizational culture and innovation strategy was insignificantly associated with innovation speed and innovation quality". This study recommended that business owners or superiors

must be careful to assess and organize the several organizational cultures in manners which fit practical requirements of the several innovation strategies.

Shahzad, Xiu and Shahbaz in 2017 investigated influence of culture in an organization, inclusive organizational culture to be specific, on innovation performance of Pakistan's software industry. Their research was a quantitative one. The study employed structured online questionnaire in data collection. The sample size was 215 and descriptives as well as regression models were adopted to assess the relation between explanatory elements of culture in an organization-innovation performance. That study revealed organizational innovation performance is supported and influenced through culture.

Teamwork, workers' empowerment and flexibility to change and climate of the organization are considered as critical and relevant elements for creativeness and innovative performance. The study recommended that managers should provide flexible cultural climate within their organizations to motivate workers to engage in decisions regarding their innovative concepts or creativity which aid in increasing innovation performance of organizations. Again, the researchers opined that managers must place emphasis on ways regarding their human capital development and create an open environment to promote research and development tactics that result in improving innovation performance of workers and the organization as a whole.

Al-Ansari, Pervan and Xu in 2013 researched into "the features of innovation in small and medium enterprises (SMEs) and the relationship between innovation and performance of business in the developing Dubai market within

United Arab Emirates." Their study adopted data from two hundred (200) SMEs and utilized a survey which was structured and created from a methodical review of literature. Descriptives and also inferential stats were adopted to assess the findings. Their study's findings discussed the features of innovation of small and medium enterprises and concluded there were positive and significant relationship between innovation and performance of small, medium enterprises. Their study again concluded that SMEs with innovative behaviours have better perspective of their enterprises and business environments. Their results challenged the axiom that innovation "waste" resources but emphasized the emerging empirical and theoretical proof of the positive influence of innovation on performance of businesses.

Forsman and Temel (2011) in the UK explored the link of developed innovativeness and performance of small businesses with less than fifty (50) workers and assessed the extent to which performance has altered over time in a period of five (5) good years. Their evidence was dependent on two quantitative sets of data explaining innovation and performance of business in one-hundred and forty-five (145) small firms in the year 2005 to the year 2009. They adopted the quantitative approach and collected primary data through e-mail questionnaire as well as secondary data through a public database. The study found that non innovators firm performance regarding the rate of operating earnings (profit) and return on investments (ROI) was at greater level than that of innovators for the period of five years. Their study concluded and recommended that diversity of innovations is related to business performance and hence seemed that organizations

could benefit from their capacity to be involved in the development of several types of innovation.

In Spain, Naranjo-Valencia, Jimenez-Jimenez and Sanz-Valle (2011) analysed culture in an organization that fosters or inhibits business innovation and imitation strategy. Naranjo-Valencia et al., indicated that innovation is crucially significant to achieving competitive advantage for businesses. Innovation and imitation strategies provide motivation for companies to introduce novel products or services to become pioneers in the market or industry. They added that several pillars shown to be determinants or factors for supporting an organizational innovative orientation and one is organizational culture. Their research employed a sample of four hundred and seventy-one companies in Spain to assess the hypotheses of their research.

By adopting hierarchical multiple regression analysis, Naranjo-Valencia et al. (2011), related the link "between organizational culture and innovation strategy." Their research found organizational culture as a clear innovation strategy determinant. Moreover, they found that adhocracy cultural elements foster innovation strategies and hierarchical cultural elements encourage imitation cultures. Their study recommended for managers to give more attention to the culture in their organization if they want to promote more innovation or imitation strategies. In addition, Naranjo-Valencia et al. recommended, on the basis of the orientation (to be the first organization to create new markets or produce new products or services for a market versus to follow a pioneer), business organizations must encourage diverse norms, beliefs and values at the workplace.

In China, Li, Zhou and Si (2010), explored "effect of a firm's innovation activities on performance and focused on the internal fit and external fit of two types of innovation activities – exploratory innovation and exploitative innovation." Their research adopted survey research which involved data from three hundred and ninety-seven (397) business enterprises located in some provinces of China. The business enterprise strategy characteristics assessment on strategic orientation of business enterprises scale was adopted to categorized the types business strategies and hierarchical regression analyses were used to examine the hypotheses of their study.

Li et al. (2010), found that "exploratory and exploitative innovations had positive effects on business performance; the internal fit link between exploratory and exploitative innovations, whether it is fit like moderating or fit like matching had no significant impact on performance of business and the fit between innovation activity and business strategy had significant impact on business performance." They added to their findings that exploitative innovation activity fits prospectors and on the other hand, exploratory activity fits defenders and the link between innovation activity and external environment had moderate impact on business performance. They concluded that "external business environment competition could promote exploratory innovation outcome but reduce exploitative innovation outcomes."

Conceptual Framework

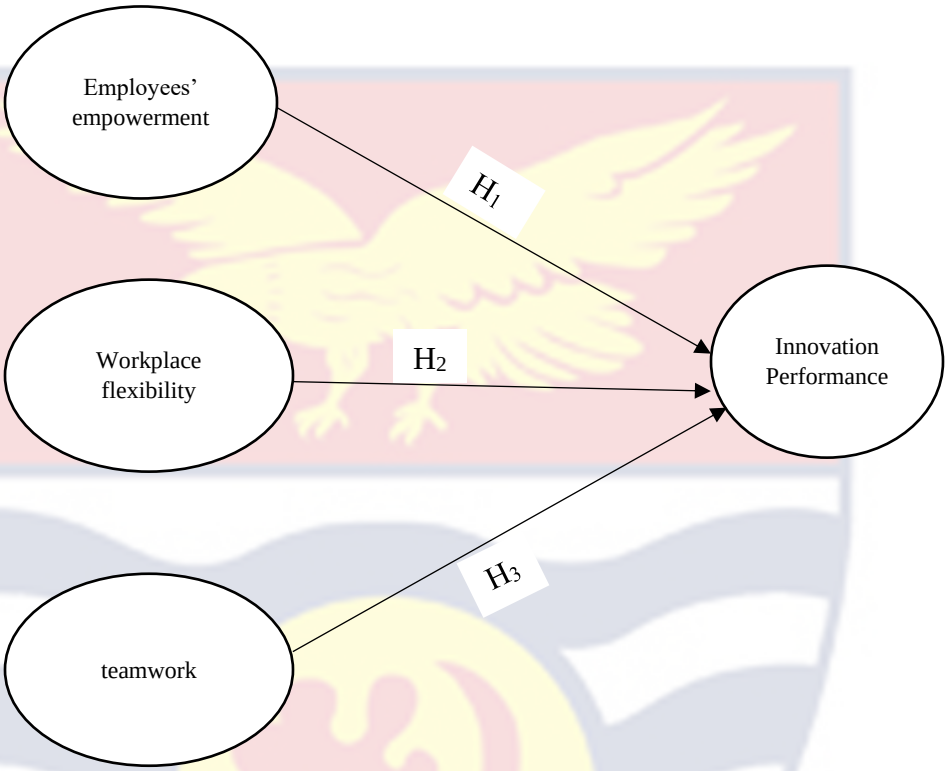

Figure 1: Conceptual Framework.

Source: Adapted from Shahzad, Xiu and Shahbaz (2017).

The framework above showed the linkage between the constructs of this study. The constructs were organizational culture (represented by employees' empowerment, workplace flexibility and teamwork) and innovation performance. The independent variables were employees' empowerment, workplace flexibility and teamwork. The dependent variable was innovation performance.

CHAPTER THREE

RESEARCH METHODS

Introduction

This current dissertation examined role of software development firms' organizational culture on innovation performance. Specifically, this third chapter provided the methods that were used in the study. The aspects explained in this chapter included approach of the study, research design, a study area, the study's population, the sampling and its procedure, sample size, the data collection instrument, data collection process, data processing, analysis and ethics concerning the study.

Research Approach

The research approaches, according to Yates (2003), are qualitative and quantitative research approaches. According to Yates, quantitative research approach works through the creation of examinable hypotheses and theories that could be generalized. Quantitative approach depends on data which can be numerically measured; therefore, it is the aim of the survey which provides a direction to determine an approach which would be adopted. The questions are designed as data that can be transformed to numerical values. Creswell (2013) opined that data collection tools adopted in quantitative research approach are normally surveys, personality tests, questionnaires and standardized research instruments. Quantitative approach is usually used within natural sciences and appropriate for data which is numerical in nature.

Qualitative research, on the other hand, was by Creswell (2013) as "an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and is conducted in a natural setting, bases research on systematic protocols". An independent perception developed by the researcher is usually seen in the analysis, interpretations, procedures and conclusions. It is appropriate when adequate understanding of a phenomenon is required. The popular data collection tools used in this type of research consists of cases, observation, interview guides and the reviews of existing literatures (Crotty, 1998). One's selection of the appropriate research approach will be heavily influenced by the purpose of that study (Boohene et al., 2008).

A main advantage of a quantitative research is its relative speed or short time with which a study can be undertaken. In addition, it is objective, scientific, quicker and easier option than qualitative. This type of research requires analyses of data in a statistical manner or with statistical tools, generations of results and findings, extraction of reasonable conclusions that are based on numbers and compared to similar previous studies (Amaratunga, Baldry, Sarshar & Newton, 2002). Furthermore, final results in quantitative research are based on quantities and not interpretations. This helps to simplify a research's future development and comparison.

However, Crotty (1998) indicated that the quantitative research method has been critiqued because of its inflexibility, artificious nature, ineffectiveness in describing behaviour of humans and does not help to generate theories. A

quantitative research approach was employed for this dissertation not only as a result of the nature of this research's objectives, question and hypotheses but because of the merits derived from quantitative approach over the qualitative method.

Research Design

In this dissertation, a descriptive inferential survey design was utilized. Tabachnick and Fidel (2007) said that a survey is a kind of research design that involve collection as well as analysis of quantitative data in large volumes of sizeable respondents employing descriptive and inferential statistics. Saunders, Saunders, Lewis and Thornhill in 2011 revealed that a survey is a common and authoritative approach which provide researchers with better control on a research procedure and relatively easier to discuss and comprehend. It is very common, since it gives way to the sourcing of large data volume collected in an economical way from a study's population.

Information is usually acquired from a sample of a study's population through the administration of a questionnaire. The data collected by survey questionnaire (if it is adopted as the data taking tool) are standardized which aid in making comparison easier. It is perceived as flexible, simple and makes it highly possible to assess any project or programme which has been operationalized or implemented. This study employed a correlational study design since it sought to ascertain relations among set of independent and dependent variables and identify best predictor variables among the study's independent variables.

Firstly, the vast expanse of the Greater Accra region called for distribution of data collection tools for a sample that would fairly represent a population of software development organizations, spread across the entire Greater Accra region. In addition, it was necessary to fairly capture every firm located in the region. This resulted in adopting simple as well as cost effective strategies to make good use of the resources available, an advantage which was made possible through the selected method. Furthermore, in order to discuss results of the study and generalize the findings, it was needful to compare and also analyse responses obtained through standardized questionnaires by descriptive statistics and inferential statistics (Saunders et al., 2011).

Study Area

The Greater Accra region was the region this study took place. This region possesses the smallest land area among 16 regions in Ghana. It is the smallest region regarding land mass taking a total surface area of four-thousand four hundred- and fifty-kilometres square (4,450km. sq.). The region is centred in a location that is within Ghana's coastal belt. It has boundaries in the north with Eastern region of Ghana, in the west with Central region, in the east with Volta region and in the south with the Gulf of Guinea which covers two hundred and twenty kilometres (220km.) coastline spanning from Langma close to Kasoa in the west to Ada, in the east. The Greater Accra region has been divided in ten (10) metropolitan, municipal, and district assemblies.

The ten (10) assemblies are Accra and Tema metropolitan assemblies, Ga West Municipal, Ga East Municipal, Ga South Municipal, Adentan Municipal,

Ashaiman Municipal and Ledzokuku-Krowoh Municipal assemblies, Dangme East district and Dangme West district assemblies. The pattern of rainfall in the region is bimodal (main and minor rain seasons). The main rainfall season starts in April and ends in July. The minor rain season also begins in August and ends in October. On average, the annual rainfall is between eight hundred millimetres (800mm) on the coast to around one thousand, two hundred and seventy millimetres (1,270mm). In the region, rainfall is normally characterized with thick cloudy conditions including high severe storms. This phenomenon often causes flooding in the valley bottoms. Again, the region's coastal wet lands get flooded due to the usual opening of the dam in Weija when it is full which also impacts the production of crops in the region.

On average, the annual temperature in the region is about 25.1^0C in the month of August and also 28.4^0C in the months of February and March. These two months (February and March) are considered as the hottest months in the Greater Accra region. The relative humidity in the region is around 75%. The average duration values are around 94% at 6:00 and 69% at 15:00. The region is considered in the country as the most urbanized region, among the 16 regions of Ghana, where more than 87.4% of the region's population live in urban areas. Accra is the capital city of the region as well as the capital city of the country. Greater Accra region hosts the Government of Ghana. The region is considered as the economic and administrative hub of Ghana. Most of the Ghanaian firms in manufacturing, banking, software development, retailing, wholesaling, technology, among others, are located in the region.

Population

Population was defined as "the entire set of elements about which the survey researcher wishes to make generalization". Babbie (2005) also define population as "the theoretically specified aggregation of study elements". This study's target population was made up all software development firms in Greater Accra region with the Registrar-General's Department. A comprehensive list of these firms was obtained from Registrar-General's Department. The target population of software development firms in Greater Accra region has been chosen as a result of closeness to the researcher and cost effectiveness. Restricting the study to Greater Accra region is not dissimilar to studies by Blankson and Cheng (2005), and Mahmoud (2011) where only one region or state has been used in place of the whole country.

The population to which this study intends to generalize its results is the software development firms in Greater Accra region who have the following traits: (1) the owner(s) is/are either male(s) or female(s). This is because the research is not gender biased and is only interested in assessing culture of an organization and innovation performance relationship of the firm, (2) the firm has been in existence for the past two years, (3) the firm operates in the Greater Accra region, and (4) the firm has at least one employee. In order to ensure that the members in the population possessed the characteristics stated above, the researcher specifically asked the authorities of Registrar-General's Department to provide firms that met the characteristics. In all, a list of about 43 software development firms were obtained.

Sampling Procedure

Sample survey was used to get the representative sample of the study's population through contacts with individuals and respondents (Bryman, 2012). This could be "a method of primary data collection based on communication with a representative sample of individuals" (Zikmund, 2012). Sampling methods do have several considerations such as effectiveness, necessity, time and cost limitations. Zikmund revealed that the sampling methods have been categorized into two techniques, which are "probability sampling technique and non-probability sampling technique." Zikmund further added that probability sampling technique places emphasise on approaches which result in a highly representative sample.

The purpose is to take a sample that is representative and a small unit collection from a study's population in order to achieve a generalization that is more accurate. According to Saunders et al. (2011) and Zikmund (2012), examples are systematic, cluster, stratified and simple random sampling. Zikmund opined that a probability sampling method uses statistical approach to choose a sample that reflects a better technical superiority as well as minimizes sampling bias including errors. On the contrary, according to Zikmund, a non-probability sampling method emphasise how a sample of a population and collections of units or cases explain social phenomena or situations. The aim is to take particular events, cases and actions to elucidate so as to deepen understanding of steps in social life including its context. Some examples are quota, snowball, haphazard, purposive, deviant case, theoretical and sequential non-probability sampling methods.

With non-probability sampling technique, a selected item or participant of a study's population is usually not disclosed. Uma (2003) and Zikmund (2012) put it that the investigator or researcher's personal judgement affects selection of the sampling units. A study's sampling techniques should relate to its research methodological path. Therefore, in this dissertation, a simple random sampling approach of the many software development firms was used. In particular, a lottery approach was employed to choose a sample size for this dissertation. As noted by Zikmund, a sampling guide or plan relates to the creation of specific processes and operational means which could be adhered to, in order to prevent potential mistakes in choosing a study's sample.

In this current dissertation, the sampling frame comprised of a total of forty-three (43) firms whose names were obtained from the Registrar-General's Department. Through telephone and electronic mails, the researcher of this study contacted firms that were randomly chosen from the sampling frame to seek their engagement in this study. This study's sampling procedure targeted a minimum of two (2) participants or respondents, the manager and an employee, each of the software development firms in the Greater Accra region.

Sample Size

Zikmund (2012) indicated that sample size consists of number of observations which are involved in a study or research and it is "the absolute size of the sample that is important, not its size relative to the population". It was argued by Bryman (2012) that a second to none sample size will depend on the degree of variability, degree of accuracy, diversity in a population as well as the number

different variables to be assessed simultaneously when data is being analysed. Sekaran (2010) also noted that sample size could be ascertained through confidence and precision. Confidence describes how truthful a study estimate relates to the study's population, i.e., the higher the precision needed, the greater the sample size required. Precision, on the other hand, relates to "how close the study estimate is to the actual population as a function of the range of variability in a sampling distribution of a mean."

In any study, confidence level could be between zero percent (0%) and hundred percent (100%). Ninety-five percent (95%) confidence level, where significance level of $p \leq 0.05$, is the usual accepted level for many business research and social sciences studies, according to Bryman (2012) and Sekaran (2010). Main factors for sample size determination include number of constructs, magnitude of the population correlations, level of precision for the study, level of analysis, budgets and time constraints. A minimum sample size is "to have at least five times as the number of variables to be analysed, and the more acceptable sample size would have a 10:1 ratio", according to Hair et al. (2006). In order to get best sample, Roscoe (1975) stressed that thirty (30) to five hundred (500) units are appropriate for several research studies. A sample size has a relevant role in a proposed technique for data analysis for responses of about hundred (100) and two hundred (200) in situations of advanced statistical approaches like PLS in a Structural Equation Modelling method (Hair et al., 2006).

One hundred and fifty (150) units to four hundred (400) units sample size has been recommended which is subject to missing data, model complexity,

statements or items (Hair et al., 2006). Based on these criteria as well as using the table provided by Krejcei and Morgan (1970), 152 respondents were randomly selected through simple random sampling method, specifically by employing the lottery method. Thus, 152 questionnaires were given to respondents. There was the expectation of gaining high rate of response from the participants. One hundred and eight (108) questionnaires were received from respondents, out of the one hundred and fifty-two (152) distributed questionnaires.

Data Collection Instrument

A questionnaire which was of standard was designed to solicit the appropriate research data for this study. It comprised only direct and closed-ended statements, items or questions. The statements, items and questions were assessed through seven-point scale of rating, with the exception of statements concerning the organizations and respondents. The instrument was a paper-based and digital (google form) format questionnaire which was distributed to supervisors or managers and employees of software development firms in Greater Accra region. Questionnaires are believed to be powerful in guaranteeing consistency, objectivity and uniformity in solicited data. It also ensures greater convenience, higher anonymity and privacy for participants (Neelankavil, 2007).

Questions or items on the questionnaire were categorized into sections of three (Sections A, B, and C). The focus of section A was on the business attributes of the software development firm. Section B on the other hand focused on personal demographics and academic qualification of respondents. The questions in both sections A and B were mainly closed-ended questions. Close-ended questions do

not only manage or control time used for completion, coding or assessing questionnaires but also guarantees accurate, one-dimensional, exhaustive and mutually exclusive responses (Krosnick & Fabrigar, 2013).

Sections C collected information on the organizational cultural variables and innovation performance of participating software development firms. The variables in this section were measured using a Likert-scale. Yates in 2003 opined that the Likert scale depicts a kind of measurement tool which helps a person to relate constructs that are qualitative to quantitative metrics. It is perceived as most dependable and most popularly adopted scale in assessing opinions and beliefs of people. Likert scale possess the advantage of being easier to construct since it aids a researcher to collate scores of research respondents on diverse range of indicators and transform those indicators into single constructs. Zikmund (2012) pointed out that scaling is achieved if high and low scoring respondents differ in their beliefs or responses on indicators chosen for inclusion of constructs.

Data Collection Procedure

Sekaran (2010) stated that procedures and instruments for research data collection rely on time availability, costs involved, facilities available, degree of expected accuracy, experience of the researcher including other techniques and resources for data gathering. The process used provides snapshot about a particular fixed period of time of the situation understudy choosing various units from different contexts with detailed analysis of data on how other constructs differ from these units. This is referred to as cross sectional research. On the contrary, analysing data in multiple time periods of a study is referred to as longitudinal study

(Blumberg et al., 2008). In this dissertation, survey design was used for data collection. A cross sectional approach was selected due to its consistency with descriptive research method and the cost and time constraints associated with the study. Top-down method was employed as an appropriate style for executing the study's questionnaires. The respondents were given 14 days to finish and submit their questionnaires.

Data Processing and Analysis

Data that has been collected, based on survey study, is appropriate to undergo computer analysis. Data collected during this study required sorting, error checks, coding, editing and mathematical assessment (Zikmund, 2012). Blumberg et al. (2012) and Zikmund recommended that raw data collected should be edited and coded in order to check or verify mistakes before conducting statistical analysis with the data. A data editing procedure adjusts and checks the data to ensure reliability, consistency and deal with omissions before coding, and then transfer the data to storage media (Sekaran, 2010). After taking the questionnaires, the researcher of this study checked for completeness of the questionnaires as well as respondents' eligibility.

As recommended by Zikmund (2012), the coding procedure then identified and classified responses for each respondent with numerical values and symbols where appropriate. Tabachnick and Fidell (2007) similarly recommended that cleaning and screening research data is required before coding to make for consistency and also helps to check for values that are missing. The dissertation's data was inputted into a computer with the employment of IBM SPSS software,

version 25. This was done so as to undertake descriptive and inferential analyses, summarize the data as well as assess the study's questions and hypotheses, as recommended by Tabachnick and Fidell, and Ringle et al. (2005). Specifically, this dissertation's data was quantitatively analysed employing descriptives and inferential statistics. Mean and standard deviation scores were used to analyse and discuss first objective of this dissertation. for the analysis of objective one. For objectives 2, 3 and 4, regression was adopted for their analysis and discussions.

Ethical Consideration

To cater for strict adherence of ethical research standards, clauses that guaranteed respondents' confidentiality and anonymity were included in the introductory section of the research questionnaire. In order to further stress the adherence to ethical standards, questions or statements concerning identities of respondents and their organizations were avoided. These were some precautions that were taken in order to ensure application of ethical practices and standards, respect for the respondents, ensure confidentiality and trust in the integrity of the study.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

Introduction

The fourth chapter of this study provided findings of the research based on the objectives of this study. Specifically, this chapter examined the organizational characteristics of the software development firms, Greater Accra region and the demographic features of the respondents that were involved in this research. In addition, chapter 4 provided results and discussions on the organization cultural variables that exist in the software development firms, influence of employees' empowerment on innovation performance, effect of workplace flexibility on innovation performance and relationship between teamwork and innovation performance in software development firms in the Greater Accra region. SPSS, version 26, was used to analyse objectives of this research.

Characteristics of the Software Development Firms

From Table 1, 108 workers from a total of 43 software development firms were engaged. For ownership, one (1) firm, represented by 2.326%, was Government owned. That is one (1) firm, out of the forty-three (43) software development firms, was wholly owned by the State/Ghana Government or more than 50% stake were held by the State/Ghana Government. Forty-two (42) out of the forty-three (43) firms, that is 97.674%, were owned by private individuals. This implies that forty-two (42) firms were wholly private or more than 50% stake were held by private individuals. As revealed in Table 1, forty (40) firms out of the forty-

three (43) firms, which consist 93.023%, were small and medium enterprises (SMEs). That is those software development firms had between 5 to 99 employees. Among the forty-three (43) firms, three (3) of them, made up of 6.977%, were also large manufacturing firms since those firms employed at least 99 employees.

Table 1: Organization Characteristics of the Software Development Firms

Ownership	Frequency	Percentage (%)
State owned	1	2.326
Privately owned	42	97.674
Total	43	100
Capacity		
SMEs	40	93.023
Large	3	6.977
Total	43	1100

Source: Field Survey, Boadi (2022)

Respondents' Demographic Characteristics

Demographic features of the 108 respondents were displayed in Table 2. From Table 2, ninety-five (95) respondents, out of the 108, were males and thirteen (13) respondents were females, representing 87.963% and 12.037% respectively. This implies that there were more males than females in software development. From Table 2, out of the 108 respondents, twenty-one (21) respondents, that is 19.444%, indicated that they were single. The number of married respondents were eighty-four (84), represented by 77.778%. They were the largest number of respondents, hence most of the respondents were married. One (1) respondent, that

is 0.926%, claimed he or she was divorced. In addition, two (2) respondents, represented by 1.852%, said they were separated from their partners.

For age of respondents, it was in Table 2 that out of the 108 respondents, three (3) respondents, representing 2.777%, were below 21 years. Fifty-seven (57) respondents, representing 52.778%, were found within age range of 21 years to 30 years. Forty-two (42) respondents, representing 38.889%, were found in the age range of 31 years to 40 years. Four (4) respondents, representing 3.704%, were found within the age range of 41 years to 50 years. Two (2) respondents, representing 1.852%, were found within age range of 51 years to 60 years. From the results in Table 2, it can be realized that about 92%, that is ninety-nine (99) respondents out of 108, were within the youthful age range of 21 years to 40 years. This implies that the software development industry is full of young employees.

From Table 2, out of the 108 respondents, twelve (12) respondents, representing 11.111%, had worked for less than a year in their organization. Twenty-seven (27) respondents, representing 25%, had worked for one to four years in their organization. Forty-nine (49) respondents, representing 45.371%, had worked in their organization for five to nine years. Twelve (12) respondents, representing 11.111%, also indicated that they have worked for between ten to fourteen years in their organization. Eight (8) respondents, representing 7.407%, also declared that they have worked for their organization for at least fifteen years.

Table 2 shows that most of the employees (76 respondents, that is 70.371) of the software development organizations have worked for one to nine years in the industry. In addition, out of the 108 respondents, eight (8) respondents, representing

7.407%, indicated that they have certificates in software development. Eleven (11) respondents, representing 10.185%, also indicated that they have diploma. Seventy-three (73) respondents, representing 67.593%, had bachelor's degree and finally, sixteen (16) respondents, representing 14.815%, had acquired postgraduate degree.

Table 2: Demographic Characteristics of Respondents

Characteristic	Frequency	Percentage (%)
SEX		
Males	95	87.963
Females	13	12.037
Total	108	100
MARITAL STATUS		
Single	21	19.444
Married	84	77.778
Divorced	1	0.926
Widowed	0	0
Separated	2	1.852
Total	108	100
AGE		
Below 21 years	3	2.777
21 – 30 years	57	52.778
31 – 40 years	42	38.889
41 – 50 years	4	3.704
51 – 60 years	2	1.852

Total	108	100
YEARS OF WORK		
Less than 1 year	12	11.111
1 – 4 years	27	25
5 – 9 years	49	45.371
10 – 14 years	12	11.111
15 years or above	8	7.407
Total	108	100
LEVEL OF EDUCATION		
Certificate	8	7.407
Diploma	11	10.185
Bachelor's degree	73	67.593
Postgraduate degree	16	14.815
Total	108	100

Source: Field Survey, Boadi (2022)

The First Objective of this Study

The first objective of this study was stated to evaluate the cultural practices which are present in the software development organizations in the Greater Accra region. It was stated as "to assess organization cultural variables that exist in the software development firms in the Greater Accra region". The study assessed organization cultural features which are found in the software development firms using mean, standard deviation (SD), skewness and kurtosis of Employees'

Empowerment (EME), Workplace Flexibility (WOF) and Teamwork (TMW) variables that were adopted in this study. The results were shown in Table 3.

Table 3: Descriptive Statistics of the Cultural Variables

Variable	Mean	Standard Deviation	Skewness		Kurtosis	
			Statistic	Std. Error	Statistic	Std. Error
EME	5.617	0.350	.050	.233	-.442	.461
WOF	5.982	0.298	.194	.233	.027	.461
TMW	5.458	0.309	-.245	.233	.259	.461

Source: Field Survey, Boadi (2022)

The results shown in Table 3 were based on a scale of 1, represented by least agreement, to 7, represented by highest agreement, with a midpoint of 3.5 (neutral). The results in Table 3 show that all the respondents highly believe that the organizational cultural variables of Employees' Empowerment (EME), Workplace Flexibility (WOF) and Teamwork (TMW) exist in their respective organizations. The variables (EME, WOF and TMW) had high means far above the midpoint (3.5) of the scale and closer to the highest point (7) on the scale. Their standard deviations were also close to zero. These imply that all the organizational cultural variables of Employees' Empowerment (EME), Workplace Flexibility (WOF) and Teamwork (TMW) were highly present and prioritized in the Software Development Firms.

Workplace Flexibility (WOF) had the highest mean of 5.982 and the least standard deviation of 0.298, which shows that the data points were gathered closely around the value of the mean. Workplace Flexibility (WOF) was therefore the most valuable and popular organizational cultural variable in the Software Development Firms. Employees' Empowerment (EME) followed WOF, with a second highest mean of 5.617 and standard deviation of 0.350 which shows that the data points were gathered closely around the value of the mean. Therefore, in the Software Development Firms, Employees' Empowerment (EME) was the second most valuable cultural variable that existed at the workplace.

Last but not least, the third most valuable cultural variable according to the results shown in Table 3 was Teamwork (TMW). Teamwork (TMW) had the third highest mean of 5.458 and a standard deviation of 0.304 which indicates that the data points were gathered closely around the value of the mean for TMW. In conclusion, the three cultural variables were present in all the Software Development Firms with Workplace Flexibility being the most valued cultural variable, followed by the cultural tools of Employees' Empowerment and Teamwork. Similarly, Shahzad et al. (2017) also found that flexibility, employee empowerment and teamwork were relevant factors for creativity and innovation performance. In addition, in the study of Al-Ansari et al. (2013), it was indicated that enterprises, especially SMEs, that exhibit these innovative behaviours (flexibility, employee empowerment and teamwork) have better perspective of their business and improve performance.

Second Objective of this Study

Objective two of the study which was stated as "to assess the influence of employees' empowerment on innovation performance of software development firms in the Greater Accra region" was also presented and analysed through the use of the statistical tool of regression so as to create a cause-and-effect relation for the independent variable and dependent variable. For the second objective of this study, the independent variable was Employees' Empowerment (EME) and dependent variable consisted Innovation Performance (INP). Regression assessment of the objective two of this study was evaluated and discussed with the use of the Model Summary, ANOVA and Coefficient. These were respectively depicted in Table 4, Table 5 and Table 6.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.601[a]	.362	.356	2.530

a. Predictors: (Constant), EME
Source: Field Survey, Boadi (2022)

For objective two of this study, Table 4 displayed the result of model summary. Table 4 showed figures for R; R Square (R^2); adjusted R^2 and standard error of the estimate. R denotes pearson product moment correlation coefficient that indicated direction as well as strength of the linear relation of predictor (independent) variable of Employees' Empowerment (EME) and outcome (dependent) variable of Innovation Performance (INP). From Table 4, R was 0.601. This implies there was a positive and strong relation between independent variable,

Employees' Empowerment (EME) and dependent variable, Innovation Performance (INP).

Model of this study was also assessed through the use of the coefficient of determination (R^2). R^2 indicates proportion of variance in the dependent construct that is explained by the independent construct (Cohen, 1992). The R^2 is the portion of variation in the outcome variable explained by the model. In Table 4, 0.362, that is 36.2% of variation in the dependent construct of Innovation Performance (INP) has been explained by the independent variable of Employees' Empowerment (EME). This finding shows that Innovation Performance is affected by Employees' Empowerment.

In addition, the adjusted R^2 of 0.356 which is 35.6% consist of variation in Innovation Performance (INP) which was explained by adjustment in Employees' Empowerment (EME) in this study's model. This means that a change or adjustment in Employees' Empowerment would cause 35.6% change in Innovation Performance of the workers. Therefore, the Software Development Firms should continually provide employee empowerment measures such as delegation and training so as to continually improve the innovation performance of workers.

Furthermore, Table 5 showed the ANOVA results for objective two. ANOVA result indicated significance of test for R as well as R^2 by employing F-statistic. An F-statistic represents regression mean square which is divided by residual mean square. It explains if variation in the dependent construct could be explained by this study's model. Hence, should the significant figure of F-statistic be small (that is less than 0.01), then an independent construct does good job in

explaining variation in a dependent construct. The significance figure of the F-statistic of 60.024, from the results in Table 5, was 0.000 which is less than 0.01. This result means that the R and R^2 of independent variable (Employees' Empowerment) and dependent variable (Innovation Performance) were significant and therefore Employees' Empowerment could significantly affect Innovation Performance of software development firms' workers. Therefore, variation in the dependent variable could be explained by this study's linear regression model.

Table 5: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	384.262	1	384.262	60.024	.000[b]
	Residual	678.590	106	6.402		
	Total	1062.852	107			

a. Dependent Construct: INP

b. Predictors: (Constant), EME

Source: Field Survey, Boadi (2022)

Last but not least, Table 6 which is named "Coefficients" contains details that are also important in comprehending regression equation. This dissertation ascertained its functional regression equation by the use of the column marked "unstandardized coefficient" that implies that this research had the intention of prediction and forecasting. From the result in Table 6, the constant was 10.996, unstandardized coefficient of EME was 0.406 and the standardized coefficient of this study was .052. Hence, this study, from the results in Table 6, stated the

regression equation predicting Innovation Performance (INP) based on Employees' Empowerment (EME) as;

INP = 10.996 + 0.406EME

According to the rule of thumb, if the significant values are <0.01, it means that the coefficient of EME is significant. In Table 6, the significant values were 0.000, hence coefficient of EME was significant. In Table 6, considering the figures of the slope as well as the intercept in the resulting equation, some statements were made. First, from the intercept, usually depicted as the constant, expected mean value of Innovation Performance (INP) was 10.996 when Empowerment (EME) is equal to zero (0).

Second, considering to the slope, for any improvement made in the independent variable, the dependent variable will increase by 40.6%. To conclude from this result, Employees' Empowerment (EME) had a strong positive relationship with Innovation Performance (INP). This implies that Employees' Empowerment can facilitate workers' Innovation Performance. This finding was in line with studies by Shahzad et al (2017), who examined the role of organizational culture in the innovation performance of software development firms in Pakistan and found that empowerment was a significant factor the influence innovation performance. Similarly, Al-Ansari et al. (2013), indicated that innovative characteristics of SMEs such as empowerment affects business performance.

Table 6: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	10.996	2.021		5.442	.000
	EME	.406	.052	.601	7.748	.000

a. Dependent Variable: INP

Source: Field Survey, Boadi (2022)

The Third Objective of the Study

This section of the study evaluated the third objective. The third objective was stated as "to examine the effect of workplace flexibility on innovation performance of software development firms in the Greater Accra region". The research data was examined by using linear regression to assess the cause-and-effect relationship between workplace flexibility (independent construct) and innovation performance (dependent construct) in the objective. Three Tables were used to display the findings of the regression analysis for the third objective of this study. Table 7 displayed the model summary; Table 8 displayed the ANOVA and Table 9 showed the results of the coefficient.

With regards to the model summary, Table 7 contains values for the R, R^2, adjusted R^2 and the standard error of the estimate. R depicts the Pearson product moment correlation coefficient which showed the direction and strength of the relationship between workplace flexibility, WOF (independent construct) and innovation performance, INP (dependent construct). As shown in Table 7, R was

0.441 which means that there was a positive and strong relationship between workplace flexibility, WOF and innovation performance, INP. The R square value which indicates the coefficient of determination was also represented in Table 7.

R^2 represents the proportion of variance in the dependent construct or variable that is explained by the independent construct. It shows proportion of variation in the dependent construct explained by the regression model. As indicated in Table 7, the R square value was 0.195. This implies that about 19.5 percent of the variation in Innovation Performance (INP) has been explained by Workplace Flexibility, (WOF). This means that Workplace Flexibility (WOF) has influence on Innovation Performance (INP). Table 7 also displayed the adjusted R square as 0.187. This implies that 18.7 percent of the variation in Innovation Performance (INP) is explained by an adjustment in Workplace Flexibility, (WOF), which also means that any change in Workplace Flexibility can cause 18.7 percent change in Innovation Performance of the workers.

Table7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.441[a]	.195	.187	2.841

a. Predictors: (Constant), WOF

Source: Field Survey, Boadi (2022)

In addition, Table 8 contained the ANOVA results for the third aim of this study. The ANOVA results in Table 8 showed the F-statistic which represents test significance for the R and R^2. F-statistic is calculated as "regression mean square

(MSR) divided by the residual mean square (MSE)". It shows if variation in the dependent construct will be explained by the regression model. If the significance value of the F-statistic is small (<0.01), it means that the independent variable is good at explaining the variation in the outcome variable. From Table 8, significance value for the F-statistic of 25.647 was 0.000. This implies that the R and R square between Workplace Flexibility (WOF) and Innovation Performance (INP) were statistically significant. That is, variation in the dependent variable (INP) can be explained by the linear regression model. Hence, Workplace Flexibility can significantly influence Innovation Performance of the workers.

Table 8: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	207.058	1	207.058	25.647	.000[b]
	Residual	855.793	106	8.074		
	Total	1062.852	107			

a. Dependent Variable: INP

b. Predictors: (Constant), WOF

Source: Field Survey, Boadi (2022)

The Table 9 which was captioned "Coefficient" also showed results that were essential in understanding the regression equation. The study estimated the functional regression equation using the column marked unstandardized coefficient which means that this study has the intention to predict and forecast. From Table 9, the constant was 19.447, the unstandardized coefficient of Workplace Flexibility

(WOF) was 0.228 and the standardized coefficient of the study was 0.045. Therefore, from Table 9, the regression equation predicting Innovation Performance (INP) based on Workplace Flexibility (WOF) was established as;

INP = 19.447 + 0.228WOF

Based on the rule of thumb, if the significant values are less than 0.01, then the coefficient of WOF is significant. The significance values in Table 9 were 0.000, hence the coefficient of WOF is significant. From Table 9, taking the values for the slope and the intercept in the resulting regression equation, the following statements were made. According to the intercept, often labelled as the constant, the expected mean value of Innovation Performance (INP) was 19.447 when Workplace Flexibility (WOF) is equal to zero.

In addition, from the slope, any improvement made in the independent construct, the dependent construct will increase by 22.8%. This result means that Workplace Flexibility (WOF) had a strong positive relationship with Innovation Performance (INP) which means that Workplace Flexibility can influence workers' Innovation Performance. In similar studies, Chen et al. (2018), revealed that firms that exhibit flexibility at the workplace facilitate higher innovation speed and become higher performers in their industry. In addition, this finding was supported by Shahzad et al. (2017), who found that workplace flexibility had significant impact on innovation performance.

Table 9: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	19.447	1.426		13.633	.000
	WOF	.228	.045	.441	5.064	.000

a. Dependent Variable: INP

Source: Field Survey, Boadi (2022)

The Fourth Objective of the Study

The fourth and last objective of this study was also assessed. It was formulated as "to examine the relationship between teamwork and innovation performance of software development firms in the Greater Accra region". Linear regression was used to examine this objective so as to establish cause and effect relationships between the independent variable (Teamwork, TMW) and the dependent variable (Innovation Performance, INP). The regression analysis was examined and presented with the aid of three (3) tables comprising model summary, ANOVA and coefficient.

From the Model Summary in Table 10, values for R, R-squared, adjusted R-squared and the standard error of the estimate were displayed. R explains the Pearson product moment correlation coefficient that showed the direction and strength of the linear relationship between the independent variable (Teamwork, TMW) and the dependent variable (Innovation Performance, INP). R was 0.588, as shown in Table 10. This means that there was a positive and strong relationship

between the independent variable (Teamwork, TMW) and the dependent variable (Innovation Performance, INP).

In addition, the model for this objective was examined by the R^2, known as the coefficient of determination. The coefficient of determination (R^2) shows the proportion of variance in the dependent variable that is explained by the independent variable. It is the proportion of variation in the dependent variable explained by the regression model. The R^2, from Table 10, is 0.346. Thus, about 34.6 percent of the variation in Innovation Performance, INP, was explained by Teamwork, TMW, which means that Teamwork influences Innovation Performance of the employees. From Table 10, the adjusted R^2 is 0.340, which implies that 34.0% of the variation in Innovation Performance, INP, would be explained by an adjustment in Teamwork, TMW, in the model. This means that any change or adjustment made in Teamwork would cause 34.0% change in Innovation Performance of the workers.

Table 10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.588[a]	.346	.340	2.561

a. Predictors: (Constant), TMW

Source: Field Survey, Boadi (2022)

Furthermore, Table 11 showed the ANOVA results. The ANOVA results showed the test significance for R and R^2 using the F-statistic. The F-statistic was the regression mean square (MSR) divided by the residual mean square (MSE).

Table 11 explains whether variation in the dependent variable can be explained by the regression model. When the significance value of the F-statistic is small (that is less than 0.01) then the independent variable (Teamwork, TMW) does a good job explaining the variation in the dependent variable (Innovation Performance, INP). The significance (Sig.) value of the F-statistic (56.089), from Table 11, is 0.000 which is less than 0.01. This means that, the R and R^2 between the independent variable (Teamwork, TMW) and the dependent variable (Innovation Performance, INP) was statistically significant, and hence TMW can significantly affect INP of the workers. That is, the variation in the dependent variable can be explained by the linear regression model.

Table 11: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	367.787	1	367.787	56.089	.000[b]
	Residual	695.064	106	6.557		
	Total	1062.852	107			

a. Dependent Variable: INP

b. Predictors: (Constant), TMW

Source: Field Survey, Boadi (2022)

From Table 12, this study assessed the functional regression equation using the column marked unstandardized coefficient which implies that the study intends to predict and forecast. As shown in Table 12, the constant term from the result was 12.197 and the unstandardized coefficient of Teamwork, TMW, was 0.392. Also,

the standardized coefficient of the study was 0.052. Based on these results, the regression equation predicting Innovation Performance, INP, based on Teamwork, TMW, was formulated as;

INP = 12.197 + 0.392TMW

Based on the decision rule, if significance values are less than .01, then the coefficient of TMW is significant. From Table 12, the significance values are 0.000 and therefore the coefficient of TMW was significant. Based on the results shown in Table 12, taking the values for the slope and the intercept in the resulting regression equation, the following statements were made. First, according to the intercept, often labelled as the constant, the expected mean value of Innovation Performance when Teamwork is equal to zero, is 12.197. According to the slope, for any improvement made in the independent variable (Teamwork, TMW), the dependent variable (Innovation Performance, INP) will increase by 39.2 percent.

This means that, Teamwork can facilitate Innovation Performance of the employees in the Software Development firms. This means that Teamwork had a positive and strong significant effect on Innovation Performance. Shahzad et al. (2017) similarly found that teamwork was a significant factor for creativity as well as high performance at the workplace. Naranjo-Valencia et al. (2011), also revealed that organizational culture of teamwork is one of the clear determinants of innovation strategy and performance.

Table 12: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	12.197	1.931		6.318	.000
	TMW	.392	.052	.588	7.489	.000

a. Dependent Variable: INP

Source: Field Survey, Boadi (2022)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

Chapter five was the final and last part of this dissertation. It provided the summary of the major findings, drew conclusions and presented some recommendations based on the findings including suggestions for further or future research.

Summary

Culture is considered as one of the relevant factors for organizational success and survival. Culture represents the collective conduct and behaviour of employees. Culture influences the direction of every organization and it is seen as a source of competitive advantage for organizations, institutions and companies, especially since it is believed to be hard to copy. In the same vein, innovation is regarded as a competitive mechanism for organizations' performance and success. Innovation is an important instrument that aid organizations to adapt to a continuously changing business environment. Many studies have assessed the association between culture and innovation in different countries and industries.

This current study used the quantitative research approach and descriptive method of research. This study distributed 154 questionnaires out of which only 108 respondents (about 70 % response rate) filled and delivered their questionnaires. IBM SPSS Version 26 was used for the data analysis of this study. The purpose of this study was to assess the organizational culture and innovation

performance of software development firms in the Greater Accra region. The following specific objectives were set for the study, to;

1. assess organization cultural variables that exist in the software development firms in the Greater Accra region.
2. assess the influence of employees' empowerment on innovation performance of software development firms in Greater Accra region.
3. evaluate the effect of workplace flexibility on innovation performance of software development firms in Greater Accra region.
4. examine the relationship between teamwork and innovation performance of software development firms in Greater Accra region.

In the 21st century, software development has become a foundation to the survival of many companies. The health industry, telecommunication, manufacturing industry, wholesaling, retailing, distribution, banking and finance industries, among others, currently rely on software applications to effectively and efficiently achieve their business goals and survive in the ever-changing business environment of today. Software companies and for that matter their workers were considered in this study because of their immense importance of sustaining the "business lives" of other companies. The knowledge-based theory which believes that knowledge is the most strategic resource of any organization was used in this study. The following are the summary of this study's findings based on the objectives.

1. The software development firms in the Greater Accra region and for that matter their workers accepted that the organizational cultural variables

of Employees' Empowerment (EME), Workplace Flexibility (WOF) and Teamwork (TMW) exist and are highly practiced in their respective organizations. Workplace Flexibility (WOF) was the most valuable and popular organizational cultural variable practiced in the Software Development Firms, followed by Employees' Empowerment (EME) and Teamwork (TMW).

2. The software development firms in the Greater Accra region and their workers agreed that Employees' Empowerment (EME) affect Innovation Performance (INP). Employees' Empowerment positively and significantly affected Innovation Performance of the workers in this study.
3. Thirdly, the respondents or workers in the software development firms in the Greater Accra region believed that Workplace Flexibility (WOF) positively and significantly influences Innovation Performance (INP). That is, in this study, Workplace Flexibility had a strong positive relationship with Innovation Performance and this relationship was significant.
4. Last but not least, this study found that there was a positive and significant relationship between Teamwork (TMW) and Innovation Performance (INP). That is, Teamwork had a positive and strong significant effect on Innovation Performance of the respondents.

Conclusion

Based on the first objective of this study, it can be concluded that the Software Development Firms' workers see the cultural practices of flexibility, worker empowerment and teamwork exhibited clearly in their workplaces. More specifically, the workers believe that their Companies are devoted to the adoption and utilization of modern technology, managers and workers welcome new ideas, workers are involved in short and long-term plans, delegation, training, recognition, better relationship, group spirit, open-door policy and coordination are all practiced and cherished at the workplace.

From the second objective, it can be concluded that the empowerment of the worker through cultural practices such as training, delegation, better relationships, involvement in decision-making and recognition could facilitate the innovative performance of the workers in the software development firms. That is, the workers can be highly innovative when they are empowered through the adoption of the various relevant cultural practices. Based on the third objective, it was concluded that flexibility at the workplace is very necessary to enhance the innovative performance of the workers.

That is, the adoption and utilization of modern technology, openness to new ideas and knowledge update could positively enhance the innovativeness of the employees. Last but not least, it could be concluded from the fourth objective that teamwork could promote the innovative performance of the workers of the Software Development Firms. That is, group spirit, helping each other, friendliness

and coordination among workers can promote the innovative performance of the workers.

Recommendations

The following recommendations were outlined based on the findings and conclusions of the study.

1. The software development firms and for that matter the managers of those firms should continually promote and support the cultural practices of Employees' Empowerment, Workplace Flexibility and Teamwork through the adoption of modern technological tools, worker involvement in decisions, welcoming of new ideas, delegation, better manager-worker relationships, recognition, training, among others. Workplace Flexibility is already held in high esteem by the workers and so more attention should also be paid to Employees' Empowerment and Teamwork. These cultural practices are critical in shaping the work behaviour of software developers so as to achieve organizational goals.
2. From the findings of this study, Employees' Empowerment significantly influences Innovation Performance. Hence, the owners or managers of the various software development firms in the Greater Accra region should provide more empowerment initiatives. The empowerment initiatives such as delegation, training, recognition, personal responsibility, worker involvement in decisions, among others, should be available to all workers to ensure they give off their best for the good of the organization's customers and market share.

3. The owners or managers of the software development firms in the Greater Accra region should implement and continually practise the adoption of modern technology, openness to new ideas, freedom to idea trials, etc. since these consist Workplace Flexibility practices that directly affects innovative performance of workers.
4. Last but not least, it is recommended that the owners or managers of the software development firms in the Greater Accra region should uphold Teamwork practices in order to enhance the innovative performance of the workers. Group spirit, being each other's helper, friendliness, idea sharing, integration and coordination should be cherished daily in the workplace so that employees will perform or develop quality software products and services to satisfy the organizational and market needs.

Suggestions for Future Studies

1. Firstly, it is suggested that further studies should be undertaken in other sectors of Ghana such as the hardware sector in order to compare and confirm this study's findings.
2. Second, it is suggested that further or similar studies be carried out with a larger sample size than the sample size that was involved in this study.
3. It is further suggested that future studies similar to this current study should be undertaken to include more organizational cultural practices.

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APPENDIX

Appendix A

UNIVERSITY OF CAPE COAST

COLLEGE OF HUMANITIES AND LEGAL STUDIES

SCHOOL OF BUSINESS

DEPARTMENT OF MANAGEMENT

Questionnaire

Dear Sir/Madam,

I am an MBA student from the Department of Management, School of Business, University of Cape Coast. As part of my academic work, I am undertaking a study on the topic, **"Organizational Culture and Innovation Performance of Software Development Firms in Greater Accra Region"**. You are selected for data for this academic purpose. Your views are needed and very relevant to the study and every information you provide would remain highly confidential. This is only for an academic purpose. Thank you so much for accepting to participate in this study.

SECTION A: CHARACTERISTICS OF YOUR FIRM/COMPANY

Kindly respond by ticking [√] or writing.

1. Ownership of this Firm/Company: Private { } For the State/Government { }
2. Size of this Firm/Company: SME { } Large { }

SECTION B: DEMOGRAPHIC CHARACTERISTICS

In this section kindly provide the information requested below by ticking [√]

1. Sex: Male { } Female { }
2. Age: Below 21 yrs { } 21 – 30 yrs { } 31 – 40 yrs { } 41 – 50 yrs { } 51 – 60 yrs { }
3. Marital status: Single { } Married { } Divorced { } Widowed { } Separated { }
4. Years of work: Less than 1 yr { } 1 – 4 yrs { } 5 – 9 yrs { } 10 – 14 yrs { } 15 yrs or above { }
5. Educational Level: Certificate { } Diploma { } Bachelor's degree { } Postgraduate degree { }

SECTION C

Please on a scale of 1 to 7, indicate the extent to which you agree to each of the statements below, where **1 – Least Agreement and 7 - Highest Agreement.**

		RESPONSES						
Employees' Empowerment (EME)		1	2	3	4	5	6	7
EME1	All workers in my firm/company are part of both the short and long-term planning processes of this firm/company							
EME2	Employees are encouraged to take responsibility for new ways of doing things in their work.							

EME3	Employees encouraged to use their initiative in developing new ideas and ways of dealing with work tasks.							
EME4	The authority in this organization delegates responsibilities to workers							
EME5	This Management of this firm/company pays attention to building relationships with employees							
EME6	This firm/company is committed to providing training to employees on new developments in the technology industry							
EME7	Recognizing and rewarding employees who implement new ideas within this firm is a norm.							
Workplace Flexibility (WOF)		1	2	3	4	5	6	7
WOF1	This firm/company is devoted to the adoption and utilization of modern technology							
WOF2	In this firm/company, employees are expected to be open to new ideas and responsive to them							
WOF3	Superiors or Managers often ask employees if there was a better way to do things in this firm/company							
WOF4	This firm/company is aggressively pursuing emerging business opportunities							
WOF5	This firm/company informs employees about technological changes on regular basis							
WOF6	This firm/company appropriately learns from the activities of its competitors							
WOF7	The willingness to try new ideas is encouraged within this firm/company							
Teamwork (TMW)		1	2	3	4	5	6	7
TMW1	There is a lot of group spirit in this firm/company							

TMW2	Members of this firm/company are always able to help each other when the need arises							
TMW3	This firm/company deals with challenges or difficulties through the working together of managers and workers							
TMW4	Management of this firm/company is friendly and approachable							
TMW5	This firm/company values integration and sharing among teams throughout the firm/company.							
TMW6	The creation and preservation of clear and explicit teamwork practices are important to us in this firm/company							
TMW7	This firm/company places great value on co-ordination among different work teams							
Innovation Performance (INP)		1	2	3	4	5	6	7
INP1	Many products have been launched in the past years that are new to the software industry							
INP2	In this firm/company, we pay critical attention to product specification during product development							
INP3	Our customers provide specifications for their products							
INP4	This firm/company provides value for customers							
INP5	This firm/company has the desired market share							
INP6	This firm/company's customer service is the best							
INP7	The customer base of this firm/company keeps increasing							
INP8	This firm/company offers customer-oriented software services							

INP9	This firm/company offers high quality software products and services							

Thank you so much.