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# IMPACT OF STRATEGIC INFORMATION SYSTEM PLANNING (SISP) ON SMEs IN A DEVELOPING COUNTRY – THE CASE STUDY OF NORTHERNGHANA

BY

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A THESIS SUBMITTED TO

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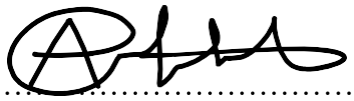
AUGUST 2022

# DECLARATION

I do by declare that this thesis is the result of my own research undertaken under supervision and has not been presented by anyone for any academic award in this or any institution. All references used in this research are fully acknowledged.

I bear any responsibility for any shortcomings.



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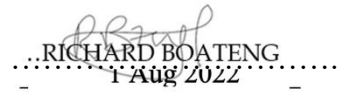


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# ABSTRACT

The importance of information systems (IS) or information technology (IT) in supporting business operations is expanding, necessitating effective IS/IT planning. Firms can better link their IS and strategic business goals with effective IS/IT development. As a result of this alignment, firms can achieve competitive benefits from their IT investments. Despite substantial research into strategic information system planning (SISP) techniques in big businesses, work in the context of small and medium enterprises (SMEs) is relatively restricted, especially in developing countries. Given the rising relevance of IT to support many aspects of SMEs' operations, this topic warrants additional examination.

Despite the specificity of how SISP has been examined by other researchers or scholars in recent years, there is still a scarcity of research in the domain of SISP's influence on SMEs. Moreover, it was revealed that very little research has been conducted in the area of SISP and SMEs, particularly from a Ghanaian perspective. Furthermore, a search for relevant literature from similar studies indicates that the majority of them do not employ any theory, concept, or framework. Due to this, a theory-based study is required in this study; and the Unified Theory of Acceptance and Use of Technology (UTAUT) theory was seen as the most suitable one to perform this research in order to fill the gap in the literature.

The purpose of this research is to see how advantageous SISP is for small businesses, as well as the issues that come with its use and implementation. The study is based on critical realism principles and adopts a qualitative methodological technique to gather the experiences of small business actors. Fifteen business operators from three different SMEs were interviewed for the study.

In addition, in order to obtain answers to the research questions posed, the study used Miles and Huberman's data analysis technique to examine the data gathered from small business operators.

Findings show that small and medium business operators have little knowledge with regards to SISP, but they have been employing it in their operations as well. Impactful benefits such as adding value to the business, increasing sales, improving business decision-making, etc. were all identified during the study. Inadequate knowledge of SISP, financial constraints, and expertise constraints, among others, were some of the challenges identified. Furthermore, finding also reveals that by reviewing the SISP approach employed in the investigation, the study defines the SISP research agenda. Both the SISP approach (Earl) and SISP objectives have an impact on SISP success, according to the findings from the three (3) SMEs.

In light of this, the study suggests that small business owners and managers devote sufficient time and resources to understanding more about SISP, its implementation process, and the problems that it entails, as well as taking steps to educate entrepreneurs about the technology's benefits. Finally, the researcher recommends that future studies look at how variables such as experience and business life span affect SISP implementation among SMEs in Ghana.

**Keywords:** Strategic information system planning (SISP), Information systems, Information technology, small and medium scale enterprises (SMEs), Lederer and Sethi Approach, Earl Approach, UTAUT model.

# DEDICATION

*To my lovely mother (Hajia Azara Abubakari), siblings, and late Dad. Your support and prayers keep me moving.*

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# LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| BSP | Business System Planning |
| CASE | Computer Aided Software Engineering |
| CEO | Chief Executive Officer |
| CIS | Computer Information System |
| DP | Data Processing |
| ERP | Enterprise Resource Planning |
| GPS | Global Positioning System |
| GDP | Gross Domestic Product |
| IS | Information Systems |
| IT | Information Technology |
| MIS | Management Information Systems |
| NBSSI | National Board of Small-Scale Industries |
| POS | Point of Sales |
| QR Code | Quick Response Code |
| R & D | Research and Development |
| SMEs | Small and Medium Scale Enterprises |
| SISP | Strategic Information Systems Planning |
| SIS | Strategic Information Systems |

| | |
|---|---|
| SMB | Small and Medium Businesses |
| SMME | Small Medium and Micro Enterprise |

# CHAPTER ONE

# INTRODUCTION

## 1.1 Research Background

In organisations, strategic information system planning is now an effective decision-making practice and a major problem for information system (IS) managers with many variables leading to the shift in the role of IS in the market. These variables include the use of IS for competitive advantage, industries effusion in IS, IS's consistent presence in the operation of daily business activities, and the rise in inter-organisational processes (Kearns & Lederer, 2004). Strategic planning for the IS role is important because with these changes organisations can attain their objective (profit-making) efficiently in this complex and competitive environment (Kitsios & Kamariotou, 2019). Businesses operating with the right vision are therefore encouraged to respond to these complex environmental changes and this initiative is sponsored by the implementation of strategic information system planning (SISP). Information systems (IS) are related to business planning, leadership knowledge, making a decision, and are targeted at increasing competitive advantage.

Strategic information system planning is an ongoing exercise that can propel an organisation to determine its technological goals for operation that help organisations to determine its technology goals (Grover & Segars, 2005). It can enable an organisation to use its information systems and technology more efficiently, be competitive, identify new higher paying applications and better forecast the IT requirements of a business (Bechor, Neumann, Zviran, & Glezer, 2010).

IT has transformed corporate business processes and performs a vital role in business strategies. Business information systems, activated by robust technological applications, will make them respond to the business environmental challenges effectively, provide innovation to support

customer service, restructure their channel of delivery of service in order to meet customer standards and needs (Ismail, Khater, & Zaki, 2017). Businesses must develop a solid and well-structured Strategic Information System Strategy (SISP) to accomplish their needs and operations. A strategic information system comprises procedures in data arrangement and the board utilisation of capacities and highlights of information technology (Teubner, 2007). An appropriate IT strategy involves the ability of businesses to utilise IT more seriously, distinguish new and higher compensation applications, and appropriately conjecture IT assets prerequisites (Basu, Hartono, Lederer, & Sethi, 2002). Likewise, strategic information systems planning inside small-scale businesses instructive establishments are significant for the effective execution of a grounds wide data framework and general performance. Understanding the significance of SISP, a few research proposed a SISP model to control business associations (Teubner & Mocker, 2014). Numerous investigations likewise uncovered components propelling and restraining SISP (Doherty & Fulford, 2006). Nevertheless, the vast majority of this exploration has not focused on business firms using IT/IS. Along these lines, this investigation endeavors to contain the gap by investigating the current nature of SISP execution in a particular setting.

Applications are selected for their consistency with the organisation's priorities or their potential to dramatically affect the strategic positioning of businesses. Improving strategic planning strategies in information systems has now rapidly become one important challenge facing IS managers today (Merali, Papadopoulos, & Nadkarni, 2012). As regards information technology resource planning, strategic information system planning can be described as the least level as "the process of deciding the structures of applications based on computers that will enable it to archive its business goals" (Bechor et al., 2010).

Now that business firms are with the ambiguity and complication relating to the environment, information system (IS) managers must develop IS strategies that will

support them in making rightful decisions to improve competitive advantage (Kitsios & Kamariotou, 2019). Information systems could only be trusted to maintain a competitive advantage if only IS strategy is to align the business strategy. These challenges are adversely affected by a lack of strategic planning. IT administrators are less informed of enterprise priorities so therefore they cannot understand the relevance of decision-making in businesses.

In firms using information systems or information technology, structured processes related to the management of strategies and knowledge processing help managers concentrate on plans, systems, and processes aimed at improving firm efficiency. IT investment was therefore a critically important issue to managers due to the fact that IT influences corporate success as well as helping administrators balance corporate strategies and organisational efficiency (Akter & Wamba, 2016).

Business organisations are important components of the national economy of Ghana since they make up the vast majority of the country's businesses (Yanney, 2014). Nowadays the financial crisis has negatively affected them. Business firms are obligated to gather knowledge about their community to address these challenges. Such knowledge should be correct to succeed and face the uncertainty of the environment, and the method of information collection should be strategic as well. As businesses seek to compete, be innovative and increase their growth in the current uncertain environment, there is the need to strategically align business with its information technology (IT).

For the relationship between alignment and performance, most researchers are concerned with how they can use a different path to achieve a larger extent for alignment base on their capabilities, strength, and market position. Researchers proposed that comprehensive planning would be more successful as it could enable planners to understand the environmental effects and react better to them. Previous work investigated the relationship that exists between the IS strategic

planning process, and the progress and the challenges faced by managers. However, these studies focused on business organisations in Ghana, specifically the Northern Region due to less research or knowledge in the area of SISP.

The research project will be initiated to build on the work of Earl (1993) and Segar (1994) to understand the SISP approach importance and relevance. Nonetheless, the work showed in this study focuses on the use of qualitative approach.

A qualitative approach was used to accomplish the research since this study adopted an interpretive case study approach as well as exploring how strategic information system planning can be used to impact organisations or firms.

### 1.2 Research Problem

Strategic information system planning is the process of finding opportunities for businesses through IT that will add value to firms or businesses, align their objectives with IT, and increase their competitive advantage (Kamariotou & Kitsios, 2019b). IS can only be seen as a sustainable source of competitive advantages if the IS approach is matched with the company strategy (Peters, Wieder, Sutton, & Wakefield, 2016). Mostly, strategic information system planning research has only focused on literature review and on large businesses.

For instance, Wainwright (2000) in his work focused on the process of creating the awareness of strategic information systems (SIS), which in the its findings shows the realigning of the IT sector and how to consider taking more optimistic and balance organisational decision. Owusu and Broni Jr (2020) in their paper also focus on investigating the nature of SISP implementation and how an organization in Ghana can use it. The findings from their study shows the enablers or influencers to the implementation and adoption of SISP in organisations. Moreover, the study focuses on SISP implementation as well as its usage in organisations in Ghana. Yang, Leung and Young (2020) in the research article explain the facilitators of IT/IS

and the research relationship that contributes to archiving SISP success. Their findings indicate it was necessary to understand SISP facilitators for improving SISP success in South Korean organisations. Ankrah (2016) in his paper explores the success predictors of strategic information system planning (SISP) and investigates staff involvement in information system strategic formulation whereby six banks were used (three from Ghana and three from foreign countries). Findings from his study shows how successful SISP has been to some financial institutions in Ghana as well indicating staff involvement in information system strategy formulation.

Base on the above evidences, previous studies have been silent on SMEs, who largely tend to form the bedrock of the economy of developing economies. Second the factor established in studies that focus on large firms may not be contextually relevant for SMEs, so SISP investigation in SMEs is necessary. Third, SISP may be viewed as an expensive activity and usually for large firms with complex IS, however, SISP has advantages that SMES can largely benefit SMES in terms of planning how to leverage IS for competitive advantage and judiciously using their scarce resources. Further, SISP can also help SMEs better plan for uncertainty especially in era of global pandemics and political wars which threaten the survival of both large and small firms.

It is therefore very necessary to have a study on the impact of strategic information system planning (SISP) on small and medium scale enterprises, which will provide a clear explanation nature and how to interrelate SISP with SMEs especially in developing countries.

The impact of strategic information system planning on small and medium scale enterprises in northern Ghana has had no research done on it. Formal processes related to strategic management and information management in SMEs allow managers to concentrate on plans, systems, and processes aimed at enhancing the performance of the organisation.

Small and medium scale businesses are an important component of the economy of the nation since they made up a large number of enterprises within a country (Muhammed, Abdulraheem, & Yusuf, 2017). Nowadays, the financial crisis has affected them negatively. SMEs are obliged to obtain knowledge about their society in order to operate. In order to compete and face the complexity of the world, this information should be appropriate, so that the information collection process will be strategic. As SMEs strive to compete, be imaginative and increase their growth in the current unpredictable climate, they have to match their business strategy with their IT strategy (Singh, Garg, & Deshmukh, 2008). Regarding the relationship between alignment and efficiency, researchers suggest that to achieve a high degree of alignment according to their strengths and market position, small and medium-sized companies should use different routes. Researchers have also proposed that more detailed planning would generate success because of its capability of aiding planners to understand and adapt better to the effects of the environment. Previous researchers explored the connection between the IS planning strategic process and the achievement and barriers faced by managers (Wu, Straub, & Liang, 2015). With the advent of Strategic Information Systems Planning (SISP), SMEs are not familiar with developing strategic plans and does not implement SISP in their operation. This research will explore the importance of SISP, which can lead to greater results, so that conclusions can be drawn about the application of this method in companies using IT/IS instruments.

### 1.3 Research Purpose

In view of the limitations of previous study on the strategic planning of information systems and its impact on SMEs, the purpose of this research is to explore the value outcome and constraining factors for SISP implementation in SMEs in Ghana.

### 1.4 Research Objectives

1. To explore the nature of SISP used in SMEs in Ghana.

2. To explore the potential value outcomes of SISP implementation on SMEs in Ghana.

3. To explore the factors that constrain or hinder the implementation of SISP in SMEs.

## 1.5 Research Questions

1. What is the nature of the use of SISP in the operation of SMEs in Ghana?

2. How does SISP implementation in SMEs activities facilitate value increment or have a positive impact?

3. What are the factors that constrain or hinder the implementation of SISP in a small and medium scale business?

## 1.6 Significance of Research

There are three key dimensions of the significance of the research: research, practice, and policy.

As far as research significance is concerned, the study extends the existing SISP work by analysing the activities for which strategic information system planning is used to achieve the objectives of SMEs deploying IT/IS tools in northern Ghana, and the positive impact it has on businesses. In developing countries such as Ghana, literature relating to the use of SISP in SMEs is limited.

With respect to practice significance, this study provides guidelines to businesses on how to tailor their strategic information system planning to assist in addressing the peculiar challenges.

Policy will also be pivotal in the findings of this research, as it will make up-to-date guidance concerning SISP's impact on SMEs in Ghana.

## 1.7 Chapter Outline

Chapter one is made up of the research background, research problem, research purpose, objectives, research questions, and significance of the study and then concludes with the chapter outline.

Chapter two provides a detailed and thorough review of important literature relating to strategic information system planning (SISP), its implementation, and usage.

In chapter three, a thorough discussion of the theoretical grounding of the study is provided together with the discussion of other IS theories. The theory and its related concept are explained with their relevance to the study.

Chapter four discusses the research method, the paradigms and sampling technique, and the size used for this study. It also gives justifications as to why such methodology or paradigm was employed as well as telling us how the methodology can be used to find answers to the research questions.

Chapter five presents the research findings and focuses on the presentation data, analyses of findings, and discussions. Chapter six provides explanation on the outcome of the research pertaining to the reviewed literature so that research questions stated in chapter one can be answered. It brings together the literature from chapter two, and the findings and analysis from chapter five.

Finally, chapter seven presents the summary of the study, conclusion, the implication to research, policy, and practice and direction for further research. This is followed by references and appendices.

# CHAPTER TWO

# LITERATUREREVIEW

## 2.1 Chapter Overview

In particular, this chapter provides descriptions of the terms used in this study and discusses the literature on strategic information system planning for small and medium-sized businesses in general. Therefore, the current chapter includes a summary of relevant literature on the adoption of SISP in developing countries, specifically Ghana on small and medium-sized businesses, in order to facilitate adding value to its activity and management. The process undertaken is split into three parts. In the general context of SMEs, the first section discusses the literature, the second part is followed by the meaning and conceptualisation of SISP, and finally, conceptual methods and methodological approaches implemented by current researchers are reviewed in the third section.

## 2.2 Overview of Small and Medium Enterprises (SMEs)

Small and medium enterprise (SME) or small and medium businesses (SMB) are enterprises or businesses whose number of employers or workers fall below certain levels (Moeuf, Pellerin, Lamouri, Tamayo-Giraldo, & Barbaray, 2018). The SMEs sector plays an important role in our modern economy, proving to be an enticing and formidable creative sector. In SMEs, the number of workers varies from one sector to another. In most cases, the chief executive officers (CEOs) of small and medium-scale enterprises are also the owners, creators, and managers of SMEs. To guide SMEs, a CEO is expected to strategically assign her/his time, resources, and money. The CEOs are mostly the reason for the development, success, or failure of SMEs.

The SME's role in the development of an economy cannot go unnoticed. Policymakers, analysts, and business gurus agree that SMEs can be a driver of development, leading to more

than 50% of gross domestic product (GDP) and generating more than 60% of jobs in the known high income developing countries (Santoro, Ferraris, Giacosa, & Giovando, 2018). For example, in Ghana, the SME sector contributes about 70% of industry employment and over 50% of Ghana's GDP (Abor & Quartey, 2010).

SMEs are categorised into four groups by the National Small Business Act 102 of 1996 (South Africa, 1996). It includes micro enterprises, very small enterprises, small enterprises, and medium-sized enterprises. With the exception of micro-enterprises, the number of workers is the differentiating factor between these groups. However, the criterion generally used for micro-enterprises is the degree of turnover (Dzisi & Ofosu, 2014). While larger global companies have created a substantial part of the wealth of the economy, SMEs have created much of the world's economic growth over the last 20 years (Quaye & Mensah, 2019). Small and medium-sized businesses also rely on the ability to quickly adopt and be resilient, such as their cordial relationship with their customers, their willingness to accept methods of operating, and how they handle risk issues; but many of them are vulnerable to significant external shocks (Fakha & Saed, 2014). Small and medium-sized enterprises in northern Ghana mostly rely on their adaptability and resilience, such as their close proximity to their clients, their openness to new ways of operating, and their risk-taking attitude, but many of them are often vulnerable to significant external shocks (Afriyie, Du, & Musah, 2019). While SMEs are struggling to absorb and cope with barriers, they need to improve the capacity to tackle ever-increasing challenges in the global market (Musawa, 2013).

### 2.2.1 Technology and SMEs

It is generally accepted that small and medium-scale enterprises (SMEs) play a vital role in the local economies across the globe (Owusu, 2020; Owusu, Broni, Penu, & Boateng, 2020). The implementation of emerging technologies in the modern world has changed the way companies are run. In the process of bridging trade barriers, functions of technology include developing

and diversifying communication processes, extending the advertising network, and ensuring the reliable and timely distribution of goods and rendering of services. Checks from a new report on the economic effects of information technology (IT) on small and medium businesses conducted recently on more than 4,000 SMEs in five of the world's largest and most diverse economies (USA, Germany, India, China, and Brazil) have shown that in the last three years, technology-oriented SMEs have outperformed SMEs using no technological innovation (Dzisi & Ofosu, 2014). SMEs groups that make use of technologies have expanded their companies and lowered costs, and improved employee efficiency. The findings of the research show, in detail, that if the latest IT tools were embraced by 15% of those enterprises that are small and medium-sized that will make use of little technology and 30% of SMEs that used moderate amounts of technology, in only those five countries, they will boost their total revenue by $770 billion and create more than 6 million new jobs (Ayala, 2013).

### 2.3 A Review of Strategic Information System Planning (SISP)

Strategic Information Systems Planning (SISP) is a subject with a lot of practical application. For several years, it has been one of the most important topics on business priorities (Chen, Mocker, Preston, & Teubner, 2010). Big firms that rely heavily on information technology (IT) generally possess committed SISP leadership roles with titles like "Head of IT Strategy" or "Director Strategic IT Management" (Mocker & Teubner, 2006).

The concept behind strategic information system planning is to include using technology to help in the implementation of a business strategy of a company and to utilize the current infrastructure for successful implementation and to direct future IT acquisitions. Earl (1993) argues that the following areas should be discussed by SISP:

1) Trying to align IT development with business goals

2) Use technology to achieve a competitive edge

3) Managing IS capital in an efficient and effective manner

4) Designing regulations and frameworks of technology.

Earl argued that the initial three fields are the strategy of information systems, information management and the strategy of information technology.

Other researchers have argued that SISP is a way to define an IS&IT infrastructure portfolio to achieve business goals as described in their business strategy (Hartono, Lederer, Sethi, & Zhuang, 2003). The planning process is a dynamic activity requiring a high degree of dependence on key business processes and technologies.

Mentzas (1997) concludes that while there are several systematic methods available to help in planning, there continues to be more problems in three areas:

1) SISP is required for alignment for the organisation's business plan

2) Practically moderate the use of existing SISP methodologies

3) Minimal participation of management and devotion to the SISP.

As a basis for the growth of SISP and as a way to solve these issues, he also suggested a generalized strategy planning approach. The method is made up of five levels, namely, strategic knowledge, situation analysis, the definition of strategy, strategy selection, and execution of strategy planning (Mentzas, 1997).

Premkumar and King (1991) suggested another widely used approach to planning, which is focusing on the input of knowledge and resource, and then converting them into a collection of strategic strategies and generating those results when implemented.

Over the last decade, the definition of SISP has grown. According to Sepehri (2010), the key goals in late 2010 were to enhance user contact, boost top-level management support, have

effective and efficient prediction of resource needs and resource assignment, find more opportunities to improve the department of their MIS, and find new computer applications with a higher return on investment.

Due to different roles in businesses, there are different explanations for SISP. For example, the procedure for putting together a collection of computer-based applications that can enable a firm to execute its business objective or plans that are centered on execution (Newkirk, Lederer, & Srinivasan, 2003). Tallon and Pinsonneault (2011) concentrate on the planning step in their definition and describe it as the strategic thinking process that determines the most preferred IS of which the organization will execute and implement its long-term IT operations and policies.

Strategic information system planning varies from planning, which relies mainly on consumer demand and financial justification (Clauss, 2017). As a means of achieving goals, information systems and technology have become so relevant that IT must be part of the target selection process, not simply a means of achieving goals already defined (Amrollahi, Ghapanchi, & Talaei-Khoei, 2013).

Since businesses are forced to create 'plans' for IT/IS progress management, they perform various stages of planning in IS and technology, being technical, analytical, and functional (Pita, 2007). More often, SISP is mistaken as comprehensive scheduling or planning a business. The strategic planning idea is generally associated with long-term planning. Long term planning, however, is not planning strategically; it turns existing practices into updated practices that are more likely to take place in the future. Strategic planning, on the other hand, aims to build a more desirable future by modifying existing actions to have a beneficial effect and outcomes in the external environment.

Although the IT approach is capable of shaping business strategy, IT strategy is not simply derived from business strategy. While there is some clarity in the comparison with business planning, SISP also needs professional expertise as it is seen as an ongoing practice and continues studies and practice.

In SISP, there are three main terms in its definition: Information systems (IS), Planning and Strategy, and IS & IT (hardware and software) are the planning objects. Formal planning is a formalised mechanism where future vision, control, and decision-making result in the form of an integrated decision-making framework. Strategy may be described as a series of decisions (Laudon & Laudon, 2015). If the strategy contains a strategic dimension of SISP, the strategic dimension of SISP is achieved. A strategic plan is described as a structured future-building process that is focused on the present but defines the design of the path chosen (Ross, Weill, & Robertson, 2006).

### 2.3.1 Definition of SISP

The term SISP has three main terms that are significant, namely information systems, planning, and strategy. Planning is the object of IS and IT. As IT strategy is capable of shaping business strategy, IT strategy is not necessarily derived from a business strategy. While there is some insight in the comparison with business planning, SISP also needs the expertise of the expert as an ongoing practice and continuous studies do not provide a conducive road to success (Peppard & Ward, 2004).

The formal definition of SISP presented in the literature is represented in the following section.

SISP is known as a situation or process whereby a business organisation recognises a range of applications in IT that will help it meet its objectives (Kearns & Sabherwal, 2006).

SISP can also be described as a technique that includes knowledge management, IT strategy, information management strategy, change strategy leadership, and human resource strategy (Galliers, Swatman, & Swatman, 1995). SISP is an ongoing planning activity that ensures that information and communication technology (ICT) is implemented in an organisation and aligns with business strategies, improves the effectiveness of the organisational process, creates business opportunities, and contributes to the competitiveness of an organisation (Ishak & Alias, 2005).

SISP is a method of promoting and controlling the company's strategic direction by classifying value-added computerised information systems, leveraging and organising various organizational technologies via comprehensive information architectures, and developing general strategies for an effective application system (Grover & Segars, 2005).

SISP is a tool for deciding an organisation's course, growth, and policies for utilising and managing information and networking technology (Warr, 2006).

Many of the ideas in general provided in the literature appear to explain SISP as a practice and process of management that will enable an organisation to recognise and select appropriate computer-based applications to build strategic strategies and enhance their organisational efficiency.

### 2.3.2 Development of SISP

Traditionally, by automating internal procedures, IT has been used to minimise costs in organisations. Over time, this position has drastically changed. From the era of Data Processing (DP) with a focus on performance to the era of the management information systems (MIS) with a focus on efficiency to the era of strategic information system (SIS) with a focus on diligence. In addition to accepting this as a somewhat simplistic way of looking at the transformation of IT/IS, these authors discusses that it is definitely a useful model that is

frequently utilised to provide a general review of the topic. The development of the ISP can somewhat connect to the distribution and improvement of IS computer-based data in organisations. The evolution of IS in organisations is based on four models (Peppard & Ward, 2004). There are four separate data process, although overlapping IS time, dating back to the 60s, according to this model.

Each era has different IT features and has a different objective, despite the fact that the era's goal of data process (DP) and the management information system (MIS) was to improve competitiveness, which was part of the SIS. Many investments are still being made in the IT sector to gain a competitive edge, but not for productivity and efficiency reasons. Although it is easy to criticise the three viewpoints as from being from an age of over-simplicity, the frame itself, both in theory and practice have not only proven popular among scholars, but have been useful (Hayward, 2013).

Although a strong emphasis on IT task automation and repetitive scholars was initially introduced, an active search was carried out for the ability to use IT from the conclusion of the 1970s until the 2000s to gain company. In fact, it has been generally agreed that IT innovations in the enterprise till now can be classified as data processing (DP), information systems management (MIS), and strategic information systems (SIS) (Kummer & Schmiedel, 2016).

**Period One (1960s)**

First is the era of data processing (DP) dating back to the 1960s, where the primary focus was on automating simple business operations and thus achieving the organisation's productivity gains. Usually, the process of automation takes place through functions, and therefore the definition of planning is largely based on the project that the system was based and the economic criteria with which some are based on the relevant of the systems (Galliers et al., 1995). The emphasis during this early phase of computerisation was on handling the processes,

programming, and data collection activities. It has been proposed that SISP's early writings concentrated attention on improving computer performance and management concerns in general.

**The second period (1970s)**

During this period, the SISP models were created based on the collection of applications that were organised in a hierarchical structure introduced by Antony (1995). The model lacked guidance to define or clarify SISP possibilities and rather focused a lot on the problems at hand, instead of on potential priorities or concerns. By the late 1970s, particularly for larger organisations, an approach that incorporated separate yet interrelated information systems within the organisation became the standard.

**The third period (1980s and 1990s)**

The 1980s, according to researchers marked the beginning of what is generally known as the era of the Strategic Information System (SIS), which was characterised by the use of desktop computing and SISP to facilitate the provision of competitive advantage (Peppard & Ward, 2004).

Calls for the introduction of new approaches came in the mid to late 1980s, as the IT world changed in several respects. In addition, the ties developed between business planning and IT planning were strengthened as computer-based information systems played a more important role in the business strategies of the company. In that sense, in meeting short-to-medium-term needs, SISP became the critical missing factor (Jeston & Nelis, 2014).

**The fourth period (2000s)**

IS capability was introduced as the 'Fourth Era' in the fourth century, which goes beyond finding alignment or looking for IS/IT competitive opportunities. The skill of IS was embodied

in three dimensions: operating in harmony, being a scalable and reusable IT network, and an efficient method of use and convergence of knowledge of business and IS. Computer Information System (CIS) goes beyond the IS or IT competitive opportunities aspect of finding an aligned mentor. In essence, CIS has three-dimensional centers that integrate information and business knowledge, scalable infrastructure and reusable IT and an efficient mechanism to resume IS/IT use (Peppard & Ward, 2004).

### 2.3.3 Why Engage in SISP

Various meanings of SISP were discussed in the previous section. However, there are still concerns about ‘why prepare, why spend time projecting the future' as this can be a rather dangerous game. Why prepare for a strategic advantage if it might not be especially suitable because the business is doing well now? Why not actually continue the successful practice? Does systematic planning restrict entrepreneurial innovation, as forms and processes replace vision and flexibility? Will one learn how to 'see the future’?

Strategic planning is not used in some instances to 'conceive an intended strategy but to elaborate the implications of an already conceived intended strategy', meaning that planning may limit vision and flexibility (Pita, 2007).

### 2.3.4 The Need and Intent of SISP

The realities of the digital world characterised the 1990s by super high -speed networking, instant messaging, real-time communications, digital meetings, and relentless technological advancement, thus accelerating changes in the company, beginning with its vision, mission, business and IT objectives, structures, and characteristics of the workforce (Malecki & Moriset, 2007).

Organisations are reacting to the pronounced need for strategic planning of IT/IS capital, with crucial reliance on IT/IS. In small and big organisations, the need for SISP is present (Doherty & Fulford, 2006).

There is no dispute that the aim of the SISP in an enterprise is for them to profit financially by enhancing performance and decision-making. Although this is valid and useful, this is a short-term and pragmatic solution to the critical issue of what the SISP's real aim is (Pita, Cheong, & Corbitt, 2013).

The aim of SISP is to allow management to act and respond to environmental dynamics and to enable management to develop, maintain and compound competitive advantages. In other words, the goal of SISP is to gain competitiveness through data manipulation and that planning is more than just future thinking and decision-making (Pita, 2007).

SISP is then expected to create a strategic plan of recommendations in a formal or less formal way that addresses future IT/IS needs in conjunction with business objectives.

The usefulness of SISP is obvious by the following advantages it offers (Duhan, 2007):

1. Facilitation of the IS role and incorporation within the organisation
2. Supporting the recognition for strategic purposes of ways to use information systems
3. Ensuring the allocation of sufficient resources to essential applications
4. Ensuring that the IS function supports organisational goals and activities at every level

Depending on their contribution to business performance, applications in a SISP portfolio will range from key support, high potential, and key operational and strategic applications. For the activity of the business enterprise, strategic applications such as applications that can carry the organisation into new markets with new entrants and numerous competitive products are important.

However, applications will fall into other groups of the portfolio much of the time, such as high potential or assistance; in other words, doing the same-cheaper, doing the same-better, doing something new and adding value, and doing something new to test its ability. (Newkirk & Lederer, 2006).

The value of SISP is downplayed by some writers and focuses on the difficulties of justifying the cost of IT/IS investments (Pita, 2007). Due to its capacity to offer strategic advantages, improving SISP has become one of the top IT management problems. IT executives reported SISP as severe and troublesome when faced with SISP failures (Shi & Bennett, 2001).

### 2.3.5 What SISP is Not

1. It is doubtful that SISP would result in fundamental changes in strategy. Situations rarely allow for drastic changes in direction. For the sake of change, SISP does not contribute to change, nor is it a rubber-stamp for present paths, past behaviour, or preconceived ideas of how things should be.
2. The SISP is not a written final text, a comprehensive action plan, or an exercise in budgeting. It is a learning process that should result in an enhanced, shared vision among senior managers of the IS/IT role and the identification of a select group of potential business initiatives that can provide opportunities for high returns on investment after further analysis.
3. SISP is not something that can be contracted out to outside advisors. Agency management, critical stakeholders, senior agency administrators, and senior IT workers must be the owners of the strategic plan. The report of a consultant can be (and sometimes is) rejected by executives of agencies and important stakeholders. While consultants may provide valuable assistance in the planning process at different times, strict caution must be exercised so that the outcome is not theirs and not yours.

4. SISP is not a technological exercise for developing a single data architecture or comprehensive, transparent models of all business processes of the agency (at least not as the term is used here); although such long-term, time-intensive, and resource-intensive projects can be useful.

### 2.3.6 SISP and its Role in Strategic Management

One of the most challenging and important tasks for organisational success is strategic IT management. To achieve better business results, the aim is to identify IT capabilities and ensure convergence of company and IT features (Schwarz & Hirschheim, 2003) to improve IT efficiency. Given the evidence that companies with successful strategic IT management have 20% higher profits, success has been linked to the efficient allocation of IT resources (Weill & Ross, 2005), although some organisations are still not sure of the need for this. This weak IT investment track record is exposed in surveys that consistently show that "20 to 70 percent of large-scale investments in IT-enabled change are wasted, challenged, or fail to bring the company back" (Wilkin & Cerpa, 2012). Therefore, since SISP allows companies to define their business objectives and plans and then identify IT strategies that maximise the achievement of business goals (Cohen, 2008), it is wider and more corporately responsible than other types of IS planning (Segars, Grover, & Teng, 1998). The characteristics that describe SISP contextually include scope (which is broad); perspective (which planning positions at the highest level of organisation); timeline (which is long, since projects frequently require substantial organisational change); and level of abstraction (as SISP relates to more conceptual planning than to practical initiatives). Therefore, SISP includes formalising:

- The best approaches to strategic business/IT approach for a given business
- A business strategy for execution
- How the method is championed
- The level of dedication to individuals, financial and other resources

- Processes for an investigation

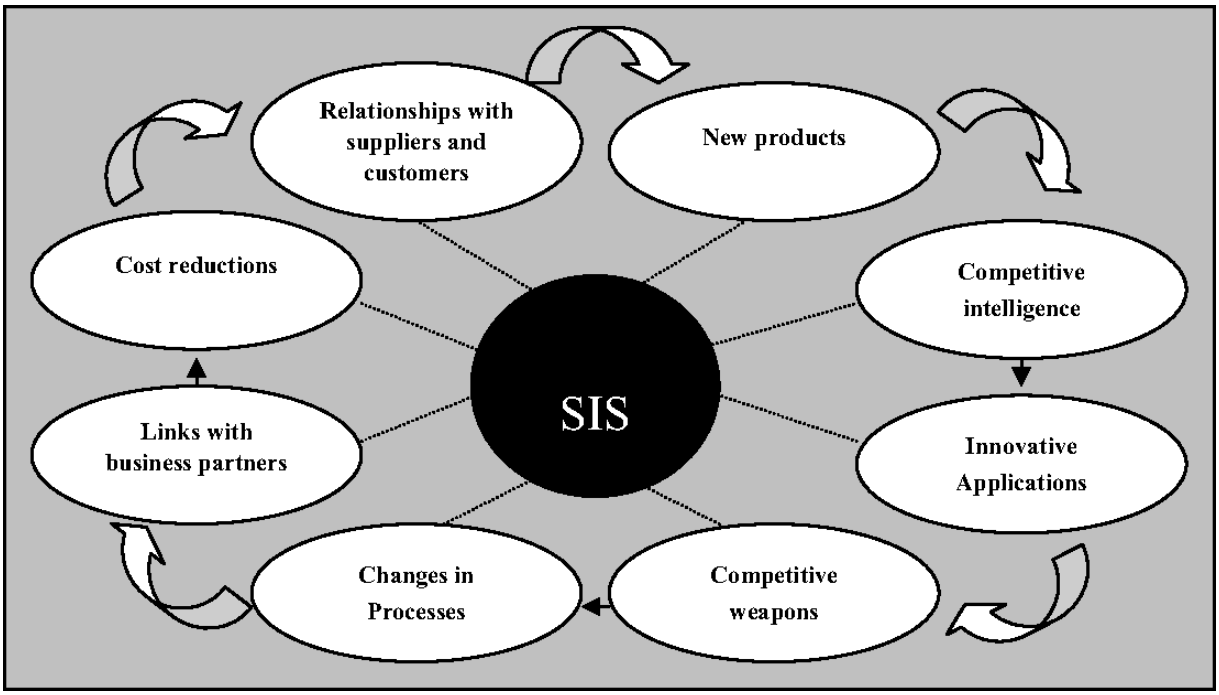
### 2.4. Objectives of SISP

Beginning first with Strategic Information Systems (SIS), Abazov et al. (2006) claims that advancements in IT have influenced the lives of most people in their daily lives, but strategic IS can offer a lower-cost, differentiated, or creative product or service that focuses on a specific market segment. Technology has grown tremendously over time, and so have the possibilities. In corporate practices, IT is used to boost the productivity and effectiveness of individuals and companies in general. The growing demand for IS and IT has made it more and more complicated and very tough to handle. In comparison to other schemes, according to Hemmatfar, Salehi, and Bayat (2010), SISs vary as follows:

- They transform the way how businesses operate and compete
- They have an external component. emphasis
- They are imaginative (and not easily copied)
- Higher project risk is correlated with them.

Eight elements for the role of technology in strategic management was introduced by Turban, Leidner, McLean, and Wetherbe (2007) and these factors are found in the diagram below:

Figure 2. 1 Strategic Information Systems Factors




Source: Turban et al. (2007)

The idea of SISP has evolved over the past decades with respect to the preparation of SIS, which is SISP. In the 1970s, the primary goals of system planning were to enhance user contact, increase top management support, better forecast resource needs and assign resources, find more possibilities for improving the MIS department, and identify new and higher payback computer applications, according to McLean and Soden (1977).

Moskowitz (1986) established in the 1980s that the creation of organization-wide data architecture has become an additional goal of SISP. The recognition of strategic applications has emerged as another primary objective of SISP (Vitale, Ives, & Beath, 1986).

There are five core objectives of SISP according to Galliers et al. (1995):

- Aligning IS for business wants
- Pursue IT competitive advantage

- Gain top contribution to management
- Requirements for forecast of IS capital
- Establish the course and policies of technology.

## 2.5 Dimensions of SISP

Grover and Segars (2005) outlined six principles of strategic information system planning, namely:

- Thoroughness: It is generally seen as the scale of the search for answers that need to be balanced against the expense of time and financial capital.
- Formalisation: The presence of systems, processes, written procedures, and policies that direct the process of planning
- Focus: The balance between the emphasis of innovation and regulation within the strategic planning system.
- Flow: Emplacement of power and decentralization of duties.
- Participation: The degree to which various effective areas and key workers are involved at lower levels of the company, as well as the extent to which the process includes lateral contact.
- Consistency: The frequency of assessment of planning activities and results. Frequent meetings, regular contact, and reassessments of the overall plan, all of which are valuable in a complex organisational certain, describe high levels of continuity.

## 2.6 SISP Approaches

The approach to SISP defines how the SISP mechanism is executed and the methods that are applied (Earl, 2003). He proposed five SISP approaches: business-led, method-driven, administrative, technical, and organisational approaches.

- Business-led approach: The underlying 'assumption' of this approach is that the only foundation on which IS plans can be constructed is the current business direction or plans, and that business planning should therefore drive SISP. The emphasis is on the company leading the IS and not the other way around (Peppard et al., 2014). To determine where information systems are most needed, business plans or strategies are evaluated (Ravichandran, 2018). This link is also an annual initiative and is the responsibility of the IS director or IS strategic planner (or team). Subsequently, the IS strategic plan is sent to the board for questioning, approval, and priority setting.
- Method driven: Followers of this approach tend to believe that the use of a formal technique or procedure is improved by SISP or relies on it (Kamariotou & Kitsios, 2018). Without the use of a structured system or the intervention of consultants, the IS director will conclude that management will not care about IS needs and opportunities (Lutchman, 2012). Indeed, awareness or expectation of some of the business-led approach's typical frustrations can trigger the desire for technique. Any strategy, however, will not do. Usually, the 'best approach' is searched for, or at least one better than the last method implemented.
- Administrative: Resource planning is the focus here. It was expected that broader management planning and control procedures would accomplish the SISP goals by structured procedures for allocating IS resources (Kamariotou & Kitsios, 2018). In general, IS architecture proposals were submitted to committees by business units or divisions that explored project feasibility, common system opportunities, and resource implications (Teubner & Mocker, 2014). In certain cases, when plans expanded the annual hierarchical approval process, resource managers did the staff job. The administrative method was parallel to the usual financial planning or capital budgeting routine of the company or could be attached to it.

- Technology driven: This approach is based on the premise that SISP is a necessary outcome of an information systems-oriented business model and, therefore, that analytical modeling methods are acceptable. This approach is distinct from the two main features of the method driven approach. Firstly, a business model is a final product (or series of models). Second, based on mapping the company's operations, procedures, and data flows, a formal approach is applied (Apulu & Latham, 2011). The focus is on deriving IT and IS architectures or blueprints, and terminology for Information Engineering is used. Data, computing, communications, and applications architectures could be developed, and computer-aided software engineering (CASE) could be among the tools used. In-house, a patented technology-oriented approach may be used or adapted (Wallace, 2013). The aims of thorough research and creating a stable infrastructure are stressed by both IS directors and general managers
- Organisational: The basic premise is very different here. It is because SISP is not a special or tidy and clean undertaking but is based on the continuous integration of the IS role and the organisation to make IS decisions. In much more multi-dimensional and subtle language, the way IT applications are found and chosen is represented (Chao 2019). The approach is not without technique, but methods are used as needed and to suit a specific purpose. For instance, it is possible to use value analysis, plan conferences, set up business investigation projects, and organise vendor visits. The focus, however, is on method, especially understanding and involvement of management. In the past, a major SISP approach was used by some of these firms, but it was seen in hindsight to have been as much a process enabler as an empirical inquiry. Executive coordination and an appreciation of how IT could contribute to the organisation have often been left behind by the process rather than detailed IS investment recommendations.

### 2.6.1 Strength and Weaknesses of the SISP Approaches

The table shows the weaknesses and strength of Strategic information system planning.

**Table 2.1 Strength and Weaknesses of SISP**

| | **Method driven** | **Administrative** | **Technology** | **Organisation** |
|---|---|---|---|---|
| **Strength** | Provides a methodology | System validity | Rigor | Becomes normal |
| | Plugs strategic gap | System synergies | Focus on infrastructure | Emphasis on implementation |
| | Raises strategy profile | | Favors integrated tools | Promotes IS user partnership |
| **Weakness** | User involvement | Non-strategic | Lacks management support | Generation of new themes |
| | Too influenced by the method | Bureaucratic | Only partial implementation | Soft methodology |
| | Implementation unlikely | Resource-constrained | Complexity | Architecture becomes difficult |

Source: (Galliers & Leidner, 2014)

### 2.4.2 Problems in applying SISP

The five most frequently reported characteristics contributing to SISP dissatisfaction are described by Galliers and Leidner (2014) below, based on their ranking.

**Table 2. 2 SISP Application Barriers**

| Rank | Problem or barriers |
|---|---|
| 1 | Constraints on resources |
| 2 | Not entirely applied |
| 3 | Lack of recognition from top management |
| 4 | Duration of period of time involved |
| 5 | Bad relationships with user-IS |

Galliers and Leidner (2014) refer to problems or barriers as a concern in terms of method, process, and implementation.

1. **Method concern**: Lack of strategic thinking, excessive internal emphasis, too much or too little focus on architecture, excessive time and resource requirements, and inadequate resource allocation mechanisms were among the issues reported.
2. **Process concern:** Lack of line management engagement, weak IS user relationships, insufficient user knowledge, and education, and low management ownership of SISP theory and practice were process issues.
3. **Implementation concern**: Resources were generally not made available, management was reluctant, technical limitations existed, or there was organisational resistance.

Other issues emerged where proposals were adopted, including technological consistency, the time and expense involved, or the lack of benefits realised.

## 2.7 Information Strategy Explained

Different writers justify the definition of strategy in very various ways (Zerfass, Verčič, Nothhaft, & Werder, 2018). A collection of IT/IS resources or initiatives is a general belief of information strategy. Some see information strategy as an IT application architecture that serves as a model for constructing the IS environment. Furthermore, numerous authors compare information strategy with the enterprise's IS/IT department's plan (Grover, Chiang, Liang, & Zhang, 2018).

The information systems approach then refers to other departments' departmental strategies, such as marketing or manufacturing, which are developed to the highest level from business strategies. Both of these proposals have one common trait: a heavy emphasis on IT and its implementation. The terms "Strategic IS Planning (SISP)", "Strategic Planning for IS (SPIS)", and "IT Strategy Planning (ITSP)" are often used interchangeably to express this emphasis (Peppard, Galliers, & Thorogood, 2014).

## 2.8 Summary of Some Studies Done in SISP

Table 2. 3 Review of Literature Table

| No | Author | Title of paper | Research focus | Theory | Method/context | Future research Directions |
|---|---|---|---|---|---|---|
| 1 | King and Teo (2000) | Considering the effects of proactive versus reactive strategic information system planning. | The reactive and proactive modes of ISP are investigated in this study. | None | Qualitative/USA | The findings clearly reveal that proactive ISP modes outperform reactive modes in terms of fewer ISP process and output problems, as well as a higher perceived contribution of IS to organisational performance. |
| 2 | Basu et al. (2002) | Impact of organizational commitment, senior management involvement, and team involvement on strategic information systems planning. | The attainment of strategic information systems planning (SISP) objectives is often assumed to be aided by organisational commitment, senior management | None | Qualitative/USA | These connections should be studied more in the future. Planners should be more conscious of the dangers of over planning. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | involvement, and team participation. | | | |
| 3 | Transmissia and Michael (1999) | Strategic information planning and campus information systems development in Indonesia | Four Indonesian higher educational institutions were used to explore university strategic planning for information systems and administration. A case study technique was utilised in conjunction with a survey of a small sample of academic staff who had used the systems. | None | Qualitative/Indonesia | As a result, the study should be considered exploratory, and future research should focus on a mechanism for establishing a causal relationship between strategic planning and the usefulness of an IS service to the user community, better ways of assessing the value of information, analysis of strategic information management documentation accompanied by follow-up interviews with relevant staff; and action research involving |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | staff reference groups to determine the efficacy of an IS service. |
| 4 | Lederer and Sethi (1988) | The implementation of strategic information systems planning methodologies | This article provides a full description of SISP before demonstrating three different techniques. | None | Qualitative/USA | Researchers must acknowledge the significance of SISP and do research into it. It has risen to the top of multiple practitioner surveys, attracting the attention of information security researchers. This research lays the groundwork for future research in the field. |
| 5 | Segars et al. (1998) | Strategic information systems planning success: an investigation of the construct and its measurement | There is a lack of awareness of how this planning activity's success is measured. This study theoretically builds and practically examines a measurement model of SISP | DeLone and Mclean | Quantitative/USA | It does not, by any means, answer all of the questions about this crucial managerial job. A replication of this study across a larger sampling frame or a selected sample of international |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | success using classical frameworks for measurement construction as well as recent statistical approaches for gauging dimensionality. | | | entities could be a viable area for future research. |
| 6 | Newkirk and Lederer (2006) | Incremental and comprehensive strategic information systems planning in an uncertain environment. | The goal of this study was to see how incremental versus comprehensive SISP affected SISP success in varied levels of uncertainty. | | | Some researchers have suggested that an incremental planning approach is one that incorporates alacrity and flexibility; thus, agility will be more effective in an uncertain environment, whereas others have suggested that a comprehensive approach is one that emphasizes exhaustiveness and inclusiveness will perform better. |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7 | Kearns and Sabherwal (2006) | Strategic alignment between business and information technology: a knowledge-based view of behaviours, outcome, and consequences. | Based on knowledge considerations, this study seeks to answer the following research question: How do planning behaviors (particularly, IT managers' engagement in business planning and business managers' participation in IT planning): How do components of IT projects (particularly, IT project planning quality and IT project execution issues) moderate the relationship between business-IT strategy alignment and IT business effects? | IT Planning and Strategic Alignment Between Business | Qualitative/USA | The study's reliance on a single informant and perceptual data is one of its primary flaws. |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8 | Hackney, Burn, and Dhillon (2000) | Challenging assumptions for strategic information systems planning theoretical perspectives. | This work identifies eight such assumptions, each of which poses a set of problems for further research. In addition, case examples are presented that illustrate the challenges of leveraging the value of information technology (IT) as a strategic opportunity given the SISP methodologies. | Assumption theory | Quantitative/Australia | More theory and practice research are clearly needed to highlight the necessity of addressing changing perspectives of organisational dynamics through SISP possibilities. |
| 9 | Kamariotou and Kitsios (2017) | Strategic information systems planning SMEs performance outcomes. | The purpose of this research was to look at the impact of SISP stages on company performance, to identify phases that have a stronger impact on firm performance, and to | Structural Equation Model (SEM) | Qualitative/Greek | Only a few academic research have looked into the impact of SISP stages on company performance so far. This study suggested a framework that outlines a formal procedure that IS |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | draw conclusions for improving the process in Greek SME's (SMEs) | | | executives and managers should follow in order to plan and implement the best IT and gain a competitive advantage. |
| 10 | Sarif, Rahman, Yunus, and Ab Rahman (2018) | The determinants of strategic information system planning (SISP) success: A proposed framework for small and medium-sized enterprises (SMEs). | The purpose of this study is to develop a methodology for evaluating the impact of top management commitment and user participation on SISP success. The findings are important for the firm's top management to know in order to ensure SISP success. | None | Qualitative/Egypt | The literature focuses mostly on understanding IS planning practice in large firms, with just a small amount of attention paid to SMEs. |
| 11 | Kamariotou and Kitsios (2019a) | Decision support systems and strategic planning: | Because the corporate environment is becoming increasingly unstable, the installation of decision support | | | The fact that the sample size was insufficient is one of the study's limitations. Nonetheless, the findings |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | information technology and SMEs' performance | systems (DSS) are seen as critical to maintaining competitive advantage. Small and medium-sized businesses (SMEs) in particular confront issues such as a lack of intentional planning, strategic decision-making, and information exchange, as well as the difficulty of increasing profitability. Because effective strategic management and decision-making are required, strategic information systems planning (SISP) is used to gather data and assist decision-makers in | | | of an exploratory study will be compiled into a more refined conceptual model for future research. In addition, this poll is aimed at small and medium-sized businesses. Future academics could look at these findings and compare them to similar findings from large corporations. Future researchers may, presumably, employ a variety of data analysis approaches. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | formulating and implementing the best DSS development strategy. | | | |
| 12 | Ofosu, Owusu, and Boateng (2021) | Examining the Factors Influencing the Achievement of IT-Business Alignment in a Developing Economy: Evidence from Ghanaian Public Universities. | The purpose of this research was to assess the state of information technology (IT) business alignment in Ghanaian organizations and to identify factors that influence the concept's achievement of four basic criteria. | Delphi technique | Qualitative / Ghana | Because the study only looked at Ghanaian state universities and ignored private schools of higher learning, future research should consider expanding the scope to include Ghanaian private schools of higher learning. In terms of methodology, different approaches may yield different results. The study only takes into account the viewpoint of one stakeholder (IT); future studies could incorporate both business and student viewpoints. |

### 2.8.1 Observation from the Above Summary of Studies

Various theoretical and conceptual approaches have been modified or used as a basis or theoretical underpinnings for many of the studies performed. There was certainly no theory or concept applicable to such studies for many of the studies, and this can be due to the emerging level of the study performed on strategic information system planning (SISP), especially on SMEs in Ghana.

The majority of the research is centered on identifying and understanding SISP in general perspectives. In addition, contextual as well as the theoretical gap can be identified clearly in the summary of studies above.

## 2.9 Chapter Summary

This chapter reviewed literature on SISP, SMEs, and value creation. It further discussed some of the research done by previous researchers on the theories used in order to identify the research gaps.

# CHAPTER THREE

# RESEARCHFRAMEWORK

## 3.1 Chapter Review

It has become appropriate to address the research framework after clearly identifying the scope and goals of this study and addressing related issues in the strategic information system planning literature. The research framework refers to a description of the procedures necessary to analyse the variables or principles of a specific phenomenon (Boateng, 2017a). Information systems research has emerged with various contending models, each with a different category of acceptance factors. Throughout the years, these models have changed, and due effort has been made to accept and further extend the models over the time each was made available. This chapter of the thesis reviews widely used models of research in the acceptance of information technology. Theory of plan behaviour (TPB) (Ajzen, 1991), unified theory of acceptance and technology (UTAUT) by Venkatesh, Thong, and Xu (2016) and the technology acceptance model (TAM) are all discussed.

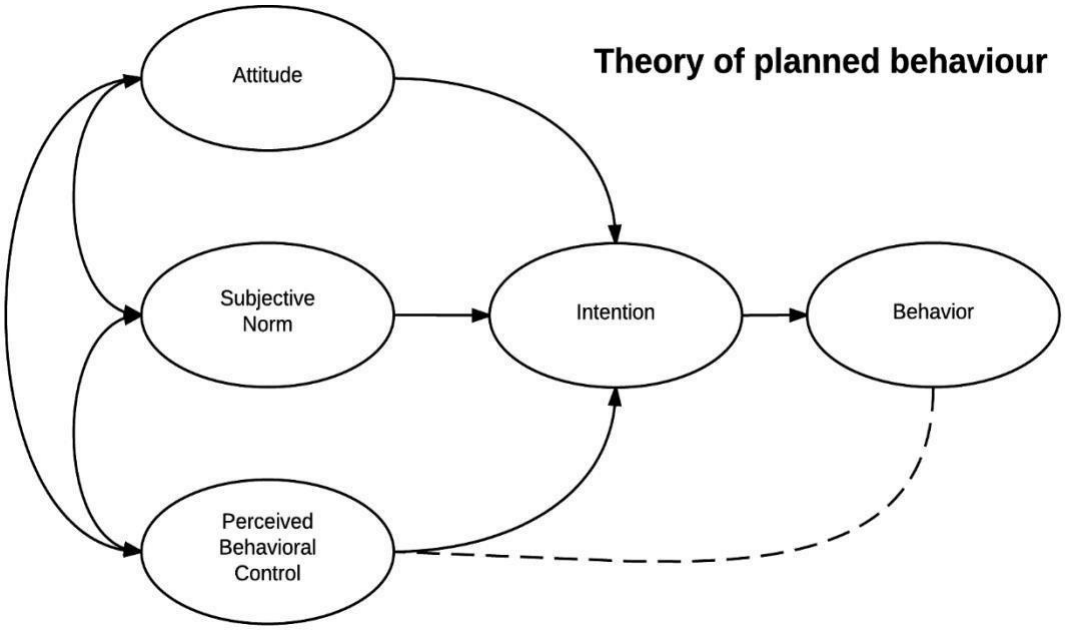
## 3.2 Approaches or Theories in Information Technology

In order to reflect the individual adoption of current developments in information systems, numerous theoretical structures have been expected.

1. **The theory of plan behaviour (TBP):** Developed by Ajzen (1991), it is commonly used to predict and explain how individuals behave when thinking about the responsibilities of the individual member of the organisation and the social context during which the framework was designed as an extension (Ajzen & Fishbein, 1970) of the Theory of Rational Actions (TRA). It has been designed to remedy the shortcomings of the original system by addressing the behavior that renders consumers unwilling to be monitored. An important element in the Theory of

Planned Behaviour, as in the early TRA, is the motivation of a person. There are three key structures in the theory: behavioural attitude, subjective norm, and perceived behavioral control. The two TPB constructs are an amendment to the original Reasoned Actions Theory and an additional behavioural control construct that is described as "the perceived ease or difficulty of performing the behaviour" (Ajzen, 1991). The distinction between TRA and TPB is the inclusion of perceived behavioural control, which describes the case where an individual has less than full control over how they behave and this can vary across acts and circumstances (Ajzen, 1991).

Figure 3. 1 Theory of Planned Behaviour




Source: Ajzen (1991)

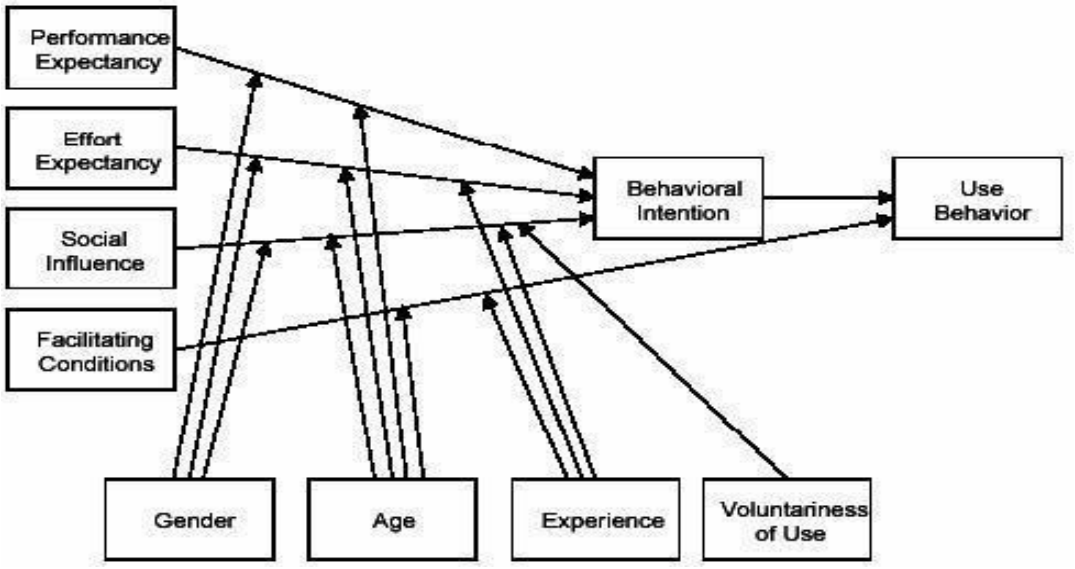
### 3.2.1 Weakness of TPA

The TPB has several constraints, which include the following:

- Irrespective of its purpose, it means that the individual has gained the chance and the resource to be active in acting on the desired character.
- Factors such as risk, mood, experience as well as anxiety are those that affect motivation and behavioural purpose but are not taken into accounts.
- Normative influences are considered, but economic or societal factors are not considered.
- It perceives that the process is a result of a linear process in decision making but it does not realise that it can change over time.

2. **The unified theory of acceptance and use of technology (UTAUT)**: Venkatesh et al. (2016) implemented and produced UTAUT based on eight competing models of Technology Acceptance. These models and theories are the Reasoned Action Theory (TRA), the Technology Acceptance Model (TAM), the Motivational Model (MM), the Planned Behaviour Theory (TPB), a model that incorporates the Technology Acceptance Model, and the Planned Behaviour Theory (C-TAM-TPB), the PC usage model, the Innovation Diffusion Theory (IDT), and the Social Cognitive Theory (SCT). The theory was based on four theoretical constructs representing determinants of Behaviour of Intention to Use or usage, which play vital roles as Technology Acceptance surrogates. Performance expectancy, effort expectancy, social influence, and conditions of facilitation are these constructs. The theory also considers, in addition to these variables, moderating factors that preside over the relationships involving different activities and purpose to usage. The influencers are experience, age, gender, and voluntariness, among others.

Figure 3. 2 UTAUT model



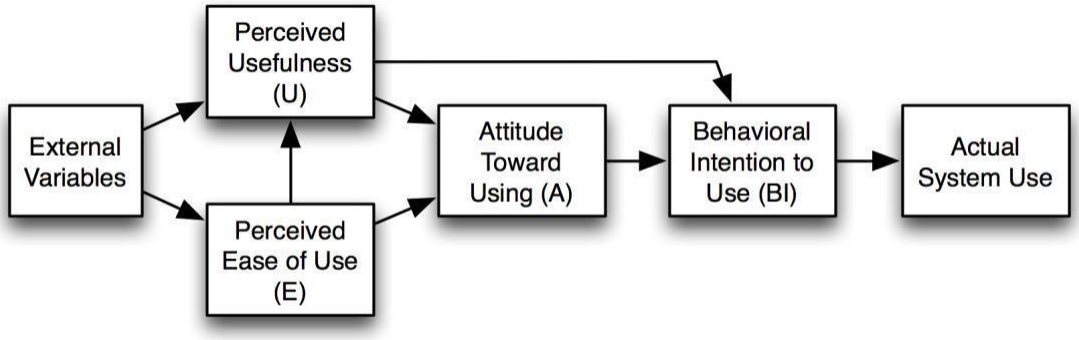

Source: Venkatesh et al. (2013)

- **Performance Expectancy**: the level at which people assume that the use of innovation or technology will result in improvements in overall performance and efficiency.
- **Effort Expectancy**: the easiness with which one can use technology.
- **Social Influence**: the stage at which people feel very important that others believe they can handle or use technology.
- **Facilitating Condition**: a degree to which the organisational and technological infrastructure needed for technical support is considered to exist.

3. **Technology Acceptancy Model (TAM):** the technology acceptance model developed by Davis (1989) is one of the commonly used IS model for forecasting individual users' use and adoption of information systems and technology (Venkatash & David, 2004). TAM has been thoroughly studied and confirmed by numerous studies evaluating the person. There are two considerations of perceived

utility in the TAM model and perceived ease of use is important in computer use behaviours. Davis (1989) describes perceived usefulness as the subjective likelihood of the prospective consumer that using a particular application framework would increase his or her work or live performance. He also characterises perceived ease of use (EOU) as the degree to which the prospective consumer expects the target device to be free of effort. The most significant determinants of real device use are ease of use and perceived utility, according to TAM. External variables affect these two factors. Social factors, cultural factors, and political factors are the major external variables that are typically manifested (Becker et al., 2013). Language, expertise, and requirements for facilitation are social variables. The consequences of the use of technology in political and political crises are primarily political factors. The attitude to use concerns the user's assessment of the desirability of using a specific application of the information system. The behavioural purpose is the measure of the probability of an individual using the application.

Figure 3. 3 Technology Acceptance Model




Source: Davis (1989)

### 3.2.2 TAM Weakness

TAM still has some drawbacks, beginning with the lack of thinking about various requirements and constraints for client tasks (Davis, 1989). In addition, the absence of an assessment of the position of facilitating conditions and, eventually, the presumption of data homogeneity in scientific research could lead to possible invalid results (Becker et al., 2013).

## 3.3 Research Framework

As discussed in chapter one, the main objective of this study is to show how using strategic information system planning (SISP) will influence value creation in small and medium enterprises in Ghana. The focus of this study is on SMEs in Ghana, specifically Northern Region. Before the research questions are answered adequately, there is the need to come out with a framework that covers the study and facilitate the achievement of the research purpose.

The design is in three parts: the various technology used (TU) by SMEs, the influential factors (IF) for the adopting of the technology, which is adopted from UTAUT (Venkatesh et al., 2016).

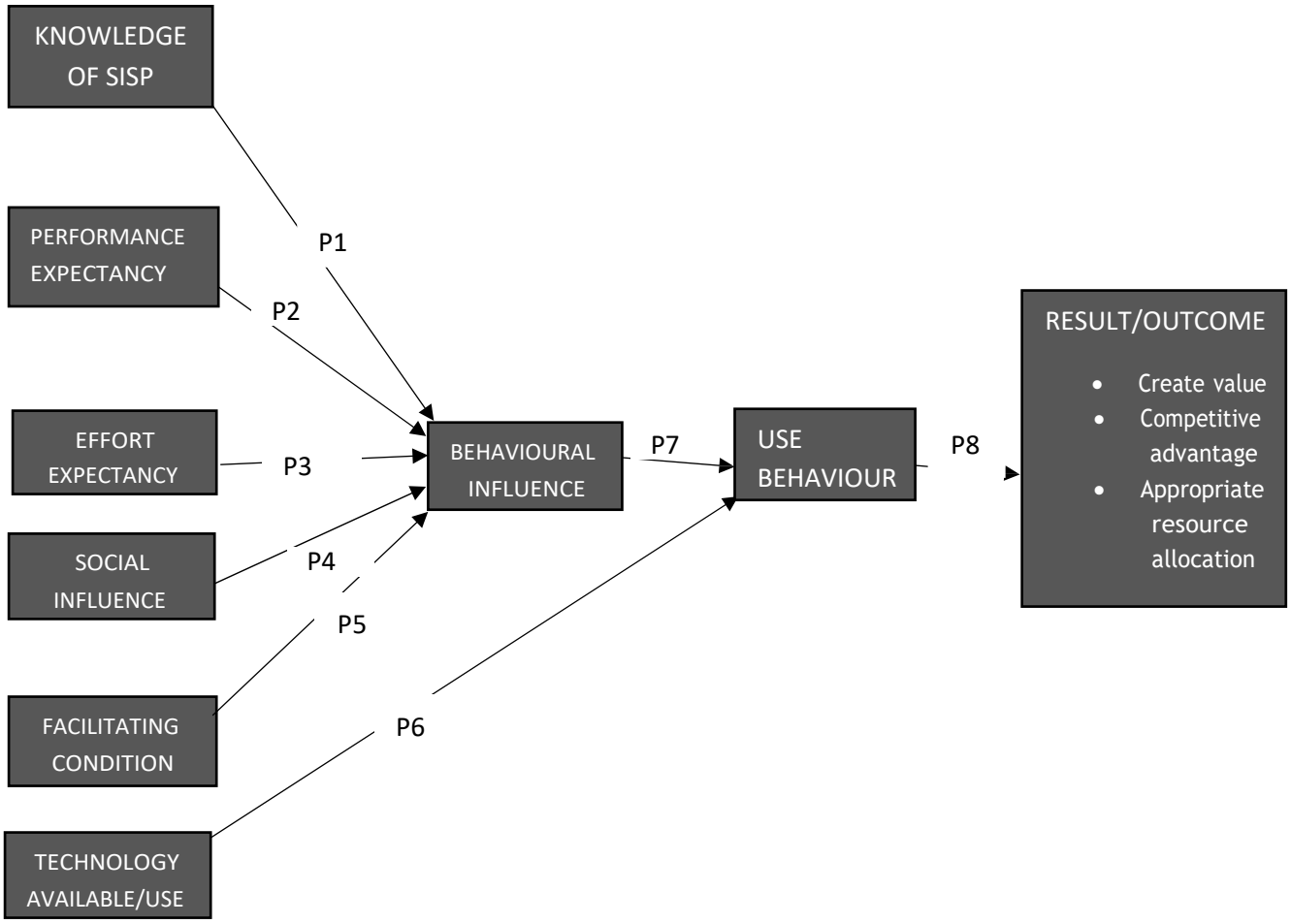
### 3.3.2 Why the UTAUT Theory

Venkatesh, Morris, Davis, and Davis (2003) performed an empirical analysis to ingest some components of the eight-behavior intention constructs used in earlier technology acceptance contexts in their quest for a more comprehensive IT acceptance model. They suggested an extended version, the UTAUT model, following a thorough review and comparison of the aforementioned models. The UTAUT study aims to describe 70% of the variation in user intention. The UTAUT approach was selected to be the most powerful model for evaluating acceptance and use of technology in that empirical analysis. Performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), behavioural intention

(BI) to use the method, and usage behaviour are the six major components in the UTAUT model.

### 3.3.3 Conceptual Framework Based On UTAUT Model

Figure 3. 4 Conceptual Framework




Source: Author's construct

## 3.4 Postulations Development

### 3.4.1 Knowledge of SISP

Users should be able to explain or state how they can operate with the process. How to, when to, which to, all need to be dealt with in its operation. This will help the researcher determine the knowledge level of the respondent (Owusu & Broni Jr, 2020). Business owner's ability to

understand what they are about to use properly with little or no supervision will have a great impact in their ability to adopt the technology. Therefore, it is postulated that:

*P1: Having a fair knowledge of SISP will have a significant influence on its adoption*.

### 3.4.2 Performance Expectancy

This indicates how many people who use SISP in their firms believe that using the system will help them enhance productivity (Venkatesh et al., 2003). This construct is composed out of constructs from other models that are thought to be related to performance expectancy and perceived usefulness is one of these constructs (TAM and TPB). The degree to which small and medium-sized business owners (sole proprietors) believe that SISP can assist them in delivering desired quality services and making intelligent business decisions, both technological and non-technological, may influence their readiness and intentions to adopt and use SISP. Performance expectancy has been found to be a strong predictor of behavioural intention (BI) to use other technologies in previous studies (Bawack & Kamdjoug, 2018, p. 51). Broni, Boateng, and Owusu (2020) discovered that users' expectations of performance have a substantial impact on technology adoption. Moreover, few research have looked into whether performance expectancy predicts whether SMEs in underdeveloped countries like Ghana will employ SISP. Subsequently, the researcher postulates that:

*P2: Performance expectancy will positively influence a user's intention to adopt SISP in their small-scale businesses.*

### 3.4.3 Effort Expectancy

This refers to the degree to which the user considers the technology to be simple to use. This one will be investigated by examining users' impressions of the system's ease of use as well as the simplicity of understanding how and where to utilise it. Effort expectancy takes into account aspects like Perceived Ease of Use (PEU) and specifies the amount of effort required by the

user to use the system (Venkatesh et al., 2016). The ability of users (business managers) to explore, implement, and properly use SISP depends greatly on their ability to do so without difficulty or challenge, which could affect their preparedness and intentions to use them. Previous research has shown that effort expectancy has a favourable impact on the users' willingness to adopt new technology (Baden-Fuller & Haefliger, 2013). The overall use of intention of a technology is influenced by effort expectancy (Broni et al., 2020, p. 330).

Therefore, the researcher postulates that:

*P3: Effort expectancy will have an impact on the user's intention to use and adopt the system.*

### 3.4.4 Social Influences

People who adopt technology believe in variables such as Subjective Norm (SN) and social factor, which is based on TRA, TPB, and TAM/TAM2, and is classified as people who are essential to the person (such as the manager, competitors, or friends) who believe the individual should utilise the system (Venkatesh et al., 2003). The perception of referent becomes an essential issue for behavioural intention for adopters with insufficient experience (Shiferaw & Mehari, 2019). Furthermore, despite the fact that social influence has been modeled using many models, the results in terms of its importance in predicting behavioural intentions has been disputed. Broni et al. (2020) indicated that social influence has a big impact on technological adoption. In the case of SISP adoption by SMEs, social influence is likely to have a favourable impact on behavioural intention, as it is postulated that:

*P4: Social influence will have an impact on the user's adoption of the technology.*

### 3.4.5 Facilitating Condition

This refers to the user's belief that the conditions and environment are in place for the new technology to be used effectively, such as the firm's readiness and infrastructure. This construct

will be investigated by examining users' perceptions of having the resources, as well as the knowledge and support to use the technology (Venkatesh et al., 2016). Hence, facilitating conditions play an important role in boosting or inhibiting the consumer's intention and adoption of SISP for their businesses, as well as facilitating the benefits derived from using SISP. Broni et al. (2020) noted that facilitating conditions have a significant impact on how a technology is used.

The researcher postulates that:

*P5: Facilitating condition will have an impact on the user's adoption and use of SISP.*

### 3.4.6 Technology Used/Available (SMEs)

In this modern age of technology, they are numerous technology and innovations that are in existence just to make life easier and faster. Such innovation goes on to change the world gradually as businesses start to adopt them in their operations (Brynjolfsson & McAfee, 2014). For SMEs, it is vital to make sure that these advances in technology are well understood for their operation purposes. It can be said that entrepreneurs who decide not to adopt these technologies such as electronic payment systems, social media presence, website creation, location base tools, customer relationship management (CRM), etc., often fall behind when it comes to adopting technology at the right time and putting it at the right place (Dibrell, Davis, & Craig, 2008). So therefore, with the availability of appropriate techniques, methods, and resources to be put in place to identify the relevant technology needed, business operation can then be run smoothly. Hence, the researcher postulates that:

*P6: Technology used by the SMEs will have a significant impact as to why owners should adopt the system.*

### 3.4.7 Behavioural Influence

It is one of the UTAUT Model's dependent variables used in this study and refers to a user's subjective possibility of becoming motivated to use the system (Venkatesh et al., 2003). Indeed, according to this framework, the behavioural intention to use SISP is directly and highly related to its actual usage. The link between behaviour and intentions is quite well established in the literature on technology acceptance (Ajzen & Fishbein, 1970). Given that the ultimate goal of any business is to persuade customers to adopt a system rather than their intention to do so, it is vital for authors to investigate the relationship between behavioural intention and actual usage. Existing research suggests that behavioural intention influences technology usage positively (Petersen, Brown, Pather, & Tucker, 2020). The accuracy of "perceived behavioural intentions to carry out a behaviour" prediction is dependent on conditions such as compatibility of measures of intentions and attitude toward the behaviour with the intended behaviour; consistency of "intentions and perceived behavioural control between the time of assessment and observation of the behaviour"; a realistic reflection of actual control by the psyche (Owusu, Abdurrahaman, Bakare, & Taana, 2021). However, it is decisive and suitable to be used in SISP adoption and impact determination on SMEs. Therefore, it is possible to postulate that:

*P7: Behavioural influence will be looking at SISP goals, prediction, and anticipated benefit.*

### 3.4.8 Use Behaviour

This is in regard to a given system's actual use behaviour, and Behavioural Intention dominates the actual use behaviour. User behavior is influenced by the individual's intentions and the intention to perform particular activities is known as behaviour (Ajzen & Fishbein, 1970). As long as the person can act deliberately, use behaviour anticipates the correct response. The intention to use will then determine use behaviour, according to the Technology Acceptance Model.

*P8: Use behaviour will have an impact on the adoption of the system.*

### 3.4.9 Result/ Outcome

The phrase "outcomes" in this context refers to the remarkable changes that result from the adoption and use of SISP technology. Outcomes will be investigated by examining people's opinions of the technology in terms of the benefits it will provide as well as the risks it will entail.

The UTAUT model has mainly been used "as is" with several other models or generalised to research various forms of technology both in operational and non-organisational circumstances. Within that regard, Venkatesh et al. (2016) suggest that the UTAUT model be extended to explore different outcome mechanisms. “New outcome mechanisms” refers to the additions to the initial UTAUT of new effects of behavioural purpose and technology use. The outcome construct will be analysed by looking at the perceptions of using the technology in terms of revenue development, appropriate business decision making, effective resource allocation, and the vulnerabilities of using SISP. Therefore, the research postulates that:

*P9: Knowing the outcome will help determine whether users should adopt the system or not.*

## 3.5 Chapter Summary

This chapter begins with an explanation of theories used in information systems and their various diagrams. A framework is also designed to answer the research questions as well as satisfying the purpose and objective of the research.

# CHAPTER FOUR

# RESEARCH METHODOLOGY

## 4.1 Chapter Overview

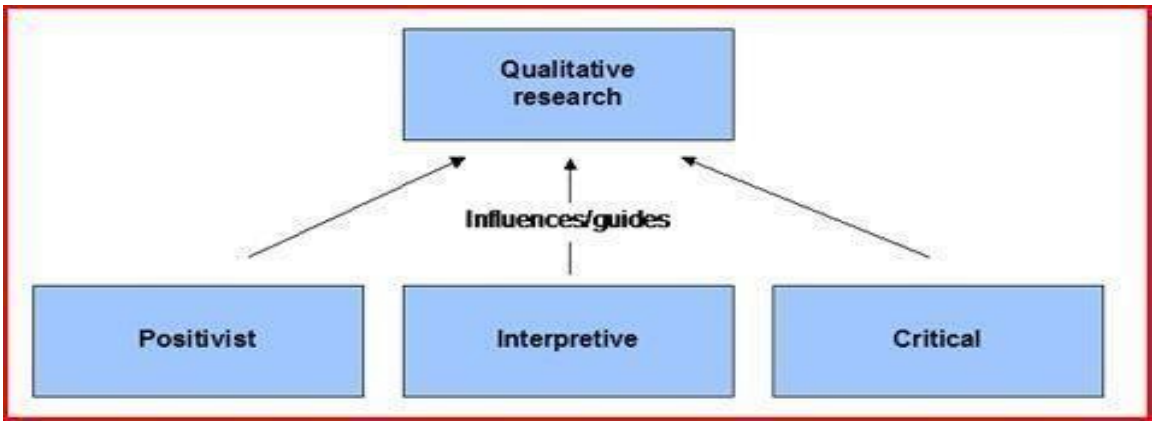
In the previous chapter, the framework to be used for this research was discussed and presented. For the purpose of the study, a detailed discussion of the research methodology used in this research is explained thoroughly in this chapter. Research design, research paradigm, data collection, and analysis of use for this research are discussed.

The research methodology is generally the research strategy that states the way and manner research should be carried out as well as identifying the method to be used. This requires planning because it provides an overall strategy for the processes that the researcher follows, the data that the researcher collects, and the data analyses that the researcher performs (Clark & Creswell, 2008). This is a strategy with the primary objective of resolving the knowledge gap. A research methodology explains how the analysis was carried out and it includes the following: research approach, the population of the study, sampling technique, data collection tools, data analysis techniques, and research expectation. The term "research methodology" can be defined as a research process theory. It involves the author's assumptions that serve as a basis for study, as well as the requirements or criteria for gathering, analysing, and drawing conclusions (Kothari, 2004). The field of research methodology, on the other hand, is way bigger than that of research methods. While research methodology focuses not just on the research methods used in the analysis, as well as on the reasons for using a certain method or technique rather than another such that the research findings can be scrutinised and substantiated by the researcher or others (Bryman, 2011).

## 4.2 Research Paradigm

A research paradigm is described as "a collection of shared values and decisions among scientists regarding how problems should be understood and addressed" (Kuhn, 1970, p. 171). In a study as to how science determines whether an issue is scientific or otherwise, Agamben (2002) emphasises the value of exemplars since paradigms may direct the investigation even in the exclusion of regulations. The word paradigm is used in scholarly research to describe a researcher's "worldview" (Mackenzie & Knipe, 2006). The worldview is used to define the point of view, school of thought, or collection of common values that guides the analysis of research data. The paradigms' principles act as a guide, influencing the kinds of issues the investigator should address and even the types of descriptions that are appropriate (Kuhn, 1970). Even though several other paradigms have been suggested, Boateng (2016) in his book stated that paradigms can be classified into three key classifications: Positivists, Interpretive/constructivist, and critical realist. These three paradigms have been prominent in the field of information systems over the years (Volkoff & Strong, 2013).

Figure 4. 1 Paradigms in Qualitative Methods




**Source:** Myers and Avison (2002)

### 4.2.1 Positivist Paradigm

The Positivist paradigm, which was first articulated by a French philosopher, Auguste Comte (1798–1857), describes a viewpoint to study that is based on what is known in research procedures as the scientific process of investigation. He stated that "experimentation, observation, and reason based on experience" should be the foundation for comprehending human behavior, and hence the only valid means of advancing knowledge and human understanding. The origins of positivism can also be traced back to the 17th and 18th centuries when scholars Descartes and Locke influenced it. At the time, the scientific world advocated for a transition away from traditional ideas of fascism based on executive actions and individual thought and the worldview of empirical experience was respected by philosophers and scholars during the Revolution (Park, Konge, & Artino, 2020). The basic characteristic of positivism is empiricism, which asserts that anything that can be observed with the physical perception is true, implying the presence of an objective global world that is subject to universal laws and procedures (Clark & Creswell, 2014). Positivism holds that only information derived from experience (the senses), including analysis, is reliable. The researcher's position in positivism studies is limited to collect data and objective analysis. Furthermore, through positivism studies, the investigator is separate from the study, and there are no protections in place to protect human desires. According to Crowther and Lancaster (2008), positivist studies typically

use a deductive approach. Moreover, positivism refers to the idea that researchers should focus on facts, whereas phenomenology focuses on the definition and allows for human interest. Positivism is based on quantitative data that can be analysed statistically. As a theory, positivism is in line with the science that understanding arises from human consciousness, as per one source. It takes an individualist, ontological approach to the universe, seeing it as a set of discrete, measurable elements and events that interact in predictable and normal ways (Collins, 2018). If you take a positivist approach to your analysis, you believe that you are independent of your research and that your research can be solely objective, the researchers caution and when doing research, independent means that you engage with your study participants as often as possible (Dissanayake, 2015).

### 4.2.2 Interpretive Paradigm

Interpretive researchers think that fact is made up of people's individual observations of the outside environment; as a result, they may follow an inter-subjective epistemology and the ontological assumption that truth is made up. Interpretivism, according to Antwi and Hamza (2015), is an anti-foundation list that claims that there's no specific right path or approach to understanding. According to Walsham (1993, p. 75), there are no "right" or "incorrect" hypotheses in the interpretive tradition. Rather, they must be assessed as to how ‘interesting' they are to the researcher and those working in similar fields. Abdulkareem, Ismaila, and Jumare (2017) stated, “interpretive researchers hypothesize that social constructions such as language, awareness, and common practices are the only ways to access truth (whether given or socially constructed)”. The observation and interpretation paradigms underpin the interpretive approach; to examine is to gather news and information, while to interpret is to make decisions based on information by making conclusions or assessing the connection in between information and some theoretical analysis (Aikenhead, 1997). It seeks to make sense of phenomena by looking at the meanings people offer to them (Mlitwa & Van Belle, 2010).

They strive to extract their constructs from the field by researching the phenomena under study in detail. Interpretivists, according to Antwi and Hamza (2015), claim that understanding and comprehension are works of interpretation because there is no objective knowledge that is not based on thought, reasoning humans. The “interpretive” model, according to Kankam (2019) emphasises the importance of contextualising analysis. The interpretive framework is associated with seeing the world through the eyes of individuals' subjective experiences. They rely on a subjective interaction between the researcher and the participants to use meaning-based procedures like interviewing or participant observation rather than measurement-based methodologies. Instead of concentrating on the full extent of human sense-making as it occurs, interpretive analysis focuses on the full scope of human sense-making as it occurs (Myers, 2019).

### 4.2.3 Critical Realist

Critical realism is based on critical theory and the assumption that study is carried out for "individual and group independence in an egalitarian society" (Mack, 2010, p. 9). The goal of a critical educational researcher is not only to recognise or account for societal patterns but also to improve them. Multiple philosophies, such as postmodernism, neo-Marxism, and feminism, are expressed in the critical framework**.** Critical realism enables an IS researcher to dig underneath the ground to comprehend and clarify why things are the way they are, as well as to speculate on the structures and mechanisms that form observable events (Boateng & Boateng, 2014). Essential model researchers are often called upon to modify current conditions and to assist the less fortunate in every social setting in escaping their particular circumstances (Klein & Myers, 1999). The primary subject of critical realist is seen as a social analysis, in which the norm's prohibitive and strange status is exposed.

### 4.2.4 Paradigm Adopted for This Research

Considering the aforementioned, this study employed a critical realist approach to help in the achievement of the study's goal: to explore the impact of strategic information systems planning on small and medium scale enterprises in Ghana. In recent years, critical realism has gained momentum as a viable alternative to interpretive information systems analysis (Bygstad & Munkvold, 2011). Another factor for the adoption of critical realism for this study is the retroduction approach that perhaps a critical realist must employ. A critical realist must use a retroduction research technique, in which researchers pick an unknown phenomenon and propose hypothetical means that, if they existed, would create the phenomenon in question.

According to Boateng (2016), there are three phases to using retroduction as a study technique. The analyst starts by looking at the interactions and incidents that occur in a social phenomenon. The requirement for this study was achieved by first reviewing literature to determine what has already been established on the subject. Second, if actual processes and frameworks existed, the researcher speculated their nature, as well as their interpretation and summary of observed relationships (Easton, 2010). The third step was to find out how these systems and structures function and whether or not they exist. Critical realism also helps an IS researcher to "dig deeper to grasp and clarify why things are the way they are, to hypothesise the processes and mechanisms that form measurable events" (Mingers, Mutch, & Willcocks, 2013, p. 18).

## 4.3 Research Design and Method

It is described by Coetzee (2013) as a strategy for choosing topics, the location of the research, and data collection procedures to address the research question (s). He goes on to say that the purpose of a good research design is to produce results that can be trusted. According to Koech and Mwangi (2013), a research design is a conceptual structure for action that acts as a link

between research questions and research strategy execution. To add to this, Creswell (2009) divides research methods into three categories: quantitative, qualitative, and mixed methods.

### 4.3.1 Quantitative Research

Van der Merwe, Venter, and Ellis (2009) explained a quantitative method as a method for evaluating hypotheses, defining evidence, establishing correlations between variables, and predicting outcomes. To maintain objectivity, generalisability, and reliability, quantitative research uses natural science methodologies. (Weinreich, 2009). Quantitative analysis strategies involve an unbiased random selection of study volunteers from the sample population, a structured questionnaire or intervention, and statistical methods for evaluating hypotheses about the link between specific variables. In quantitative research, the researcher is viewed as a great research instrument because of his or her active involvement in the research process, whereas in qualitative research, the researcher is viewed as a great research instrument because of his or her active involvement in the research process. Regardless of who does the research, the results are meant to be repeatable.

### 4.3.2 Qualitative Method

Van der Merwe et al. (2009) defined qualitative research as a research method directed at the advancement of theories and understanding. Qualitative researchers study phenomena in their natural environment, trying to make sense of, or explaining phenomena in terms of the meanings people attribute to them. The qualitative analysis focuses on the characteristics of people as well as processes and meanings that aren't tested or evaluated experimentally (Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017). Qualitative research aims to help people gain a deeper understanding of themselves and the world around them. Unlike quantitative research, which focuses on gathering information about human behavior to validate and expand hypotheses, qualitative research focuses on getting a deeper understanding

of human behaviour and experience. Direct evaluation, record study and description, participant observation, and open-ended unstructured interviewing are all examples of qualitative approaches. These techniques are intended to aid researchers in deciphering the meanings people give to social phenomena and elucidating the mental processes that underpin human behavior (Tavakol & Sandars, 2014).

### 4.3.3 Mixed Method

This approach, according to Boateng (2016), involves the use of mixed data (numerical and text) and alternative methods (statistics and content analysis) while still adhering to the same method. It is a form of research in which one phase of analysis is conducted using the qualitative research paradigm and the other phase is conducted using the quantitative research paradigm (Johnson & Onwuegbuzie, 2004).

### 4.3.4 Why the Qualitative Research Method was Selected?

The qualitative researcher's perspective stresses the importance of hearing the voice of the researcher and collecting firsthand knowledge about the researcher's life experiences on a given subject. Rather than concentrating mainly or solely on results, it appears to concentrate on social processes, where the defined relationship between the researcher and the respondents are respected. The attributes and qualities of qualitative research contributed deeply to its adoption as it focuses on the thick definition, or gathering actual, rich, deep data that illuminates daily patterns of action and meaning from the point of view of those being studied. As part of the reasons, qualitative research also employs a variety of data collection methods, particularly participant interviews, and employs an analytic analysis of qualitative data, drawing principles from the mass of specific information that makes up the data set. Qualitative methods produce rich, informative data while maintaining the participant's viewpoint and providing meaning for the phenomenon being studied (Weinreich, 2009).

### 4.4 Case Study as a Research Method

This study aims to see how strategic information system planning affects SMEs in Ghana, especially in the north. With this as a foundation, the best approach for conducting this research was established to be a case study. A case study is a research project under which one case (single case study) or a small number of cases (comparative case study) are chosen in their real-world sense and the scores obtained from these cases are evaluated qualitatively (Dul & Hak, 2007).

According to Yin (2012), case study research is most effective when it is used to answer descriptive or explanatory questions, such as what happened, how it happened, and why it happened.

In addition, it is useful for explaining a current particular phenomenon in which a detailed description is needed but the researcher does not need to influence things.

Three forms of case studies are defined by Yin (2012).

- Descriptive case study: a study that is used to characterise a particular context concerning its surroundings. It can also be used to build on a theme discovered through a study.
- Explanatory case study: the case study that investigates cause-and-effect interactions, as well as how incidents occur.
- Exploratory case study: a case study used to identify research hypotheses–or to evaluate a research technique–for a subsequent study, such as a large-scale survey.

In addition, for a better understanding of the phenomenon, either the research case study can be a single case study, or it is better to conduct several case studies. A multiple case study is needed when a study contains more than one single case (Yin, 2003). A single case study is the

best option if the researcher only wants to study one item (for instance, a specific individual from a particular group) or a single group (for example, a group of people) (Robert, 2012). Whenever a single case study is used, the study can challenge old theoretical relationships and test new ones, resulting in a more thorough investigation. Multiple studies were used for this research since the aim was to perform two separate case studies of the same phenomenon (Aberdeen, 2013).

### 4.4.1 Case Study Design

A case study is one of the widely recognised research methods for using information systems (Boateng, 2011). For instance, Effah, Amankwah-Sarfo, and Boateng (2021) used a case study in their research study on "affordance and constraints processes of smart service systems: insight from the case of seaport security in Ghana". This thesis is based on the descriptive case study approach, which necessitates the use of theory as guidance in the collection of data, as well as the theory being explicitly outlined and checked at the start of the study to serve as the research's foundation (Yin, 2003). Because of its versatility and the various sources from which data can be obtained, the case study approach was chosen for this study. The unit of analysis determines the limits of a case study (MOTORS, 2004). These can be employers or employees, events and programs, or groups and entities or organisations. The unit of research in this study was largely focused on the three elements mentioned above in the order listed: individuals or persons, events, and entities.

### 4.4.2 Selection of Cases and Sampling Technique

Research of firm-level phenomena necessitates site location depending on the organisation's characteristics (Benbasat, Goldstein, & Mead, 1987).

A visit to the National Board of Small-scale Industries (NBSSI) of the Northern Regional Branch and interaction with the Regional Project Manager, Mr. Abdul Razak gave me the

insight of the appropriate and convenient business enterprise to choose. Upon the visit, the researcher was able to specify the locations where participants could be approached; a convenience sampling method has been used to narrow down the actual study sites. According to Abeywickrama (2010), convenience sampling (also known as Haphazard Sampling or Accidental Sampling) is a type of nonprobability or nonrandom sampling in which members of a population who meet certain functional requirements are included in the study, such as ease of access, geographic location, presence at a specific time, or ability to support. The sites that have been handpicked were chosen based on their distance to each other, as well as their time and convenience. Places that were closer to the researcher were shortlisted, while those that were farther away were omitted. SME 1, SME 2, and SME 3 were not the real names of the business but anonymous names that are given by the researcher to conduct the study.

## 4.5 Data Collection Method

The collection of data for this study began on 6th April and ended on 10th May 2021. With the data presented, a clear process can be followed, ensuring that all decisions are taken in the best interests of the research study (Modgil, Gupta, Sivarajah, & Bhushan, 2021). Because if you have relevant data, you will be able to make informed choices. You will not only increase the quality of your judgment with good data, but you will also improve the quality of the outcomes you expect from every project. Critical realism promotes the use of different data collection approaches to improve viewpoint triangulation and uncover processes and systems that underpin easily measurable events. Documents, archival records, interviews, direct observation, participant observation, and physical artifacts are all possible sources of evidence for case studies (Yin, 2012).

### 4.5.1 Interview

Interviews were used by the author because they allowed him to get first -hand information from respondents of small businesses who are directly involved in using IT tools to operate

their day-to-day operations. The interview guide contains both open-ended and closed-ended questions in the survey. The questions were created with the study's goals in mind. These questions were double-checked with the researcher's superiors to make sure they were the correct ones to ask to answer the research questions. The interview guide aimed to instruct the interviewer during the interviewing so that they did not stray from the subject at hand. To assess the efficacy of the questions, a pilot interview with a proprietor was conducted in one small-scale business. Proprietors of three businesses (Apsonic motorbike selling shop, a building material business, and a multimedia business hub). Names such as SME 1, SME 2, and SME 3, respectively, were given to these businesses to keep their identity unknown.

The author interviewed four people from SME 1, which include the business owner, three sales representatives and two loading boys. Another interview was conducted on SME 2 with four employees involving the proprietor, cashier, and two sales representatives. The SME 3 interview comprised of seven people, which included the owner, general manager, receptionist, IT manager and three-service attendant. In total, 15 respondents were involved during the interview process as this number was deemed fit by the researcher in order to attain their view on the research objectives.

**Table 4.1 General characteristics of participant in the SMEs**

| SME TYPE | NAME/ TITTLE | ROLE | EDUCATIONAL LEVEL |
|---|---|---|---|
| SME 1 | Mohammd Zakaria (Owner) | • Sees to theoperations of the business.<br>• Provide support and advice to customers when the need arises. | HND |

| | | | |
|---|---|---|---|
| | | • Sole financier of the business. | |
| | Abukari Adam (sales personnel)<br>Fuseini Abass (sales personnel) | • Attends to customers.<br>• Report to the owner as to need the needs of customers.<br>• Market products. | WASSCE |
| | Abdul Rahaman (motor mechanic) | • Fixes parts of motorbikes | BECE |
| SME 2 | Ibrahim Kudus(Proprietor) | Manage the operations and activities of the business. | Degree |
| | Sumani Sadik (sales personnel)<br>Gyamfi Haleemah (sales personnel)<br>Salam Somed (sale personnel) | • Serves customers by selling goods.<br>• Meet customers' demand.<br>• Resolves customers complains.<br>• Accounts to the proprietor.<br>• Study customers behaviour and | WASSCE |

| | | | |
|---|---|---|---|
| | | recommend changes when the need arises. | |
| SME 3 | Okyere David (Owner) | Finances the operations of the business when the need arises. | Degree |
| | Yussif Jawad (General manager) | • Manages activities of the staff.<br>• Monitors business success.<br>• Implement creative ideas.<br>• Allocating resources properly. | HND |
| | Iddrisu Dawood (IT manager) | • Sees to the fully and functional operations of all IT related issues of the business.<br>• Gives IT support to other staffs. | HND |
| | Mensah Aku (receptionist) | • Book customers<br>• Attend to calls and customer needs. | |

| | | | |
|---|---|---|---|
| | | • Distributing information to customers when the need arises.<br>• Receive visitors or customers. | |
| | Hardi Kamil (service attendant)<br>Abdul Hakiim (service attendant)<br>Umar Farouk (service attendant) | All three responsible to the external operations and attending gatherings such as weddings, naming ceremonies, etc. to perform their duties at photo shooters. | WASSCE |

Source: Authors construct

### 4.5.2 Interview Ethics

After obtaining access to the companies through phone calls, text messages, personal visits, and emails, the researcher requested introductory letters from the Department of Operations and Management Information Systems (OMIS) as proof of the department's approval for the report. The interviews took place on occasions that were comfortable for the participants. Each interview lasted no longer than one hour and no less than 30 minutes. The interview was written down with the consent of the participants, and interviewees were told that the information gathered was for academic purposes only and that a transcribed version of the interview would be sent back to them for analysis. Boateng (2016) emphasises the importance of taking notes

during interviews to ensure some other important points and answers from participants that could address the research questions and help achieve the research goals are addressed and documented.

On the respondent datasheet, the study's objective was clearly specified. Aside from that, the researcher attempted to explain the research's motive to participants before asking for their permission.

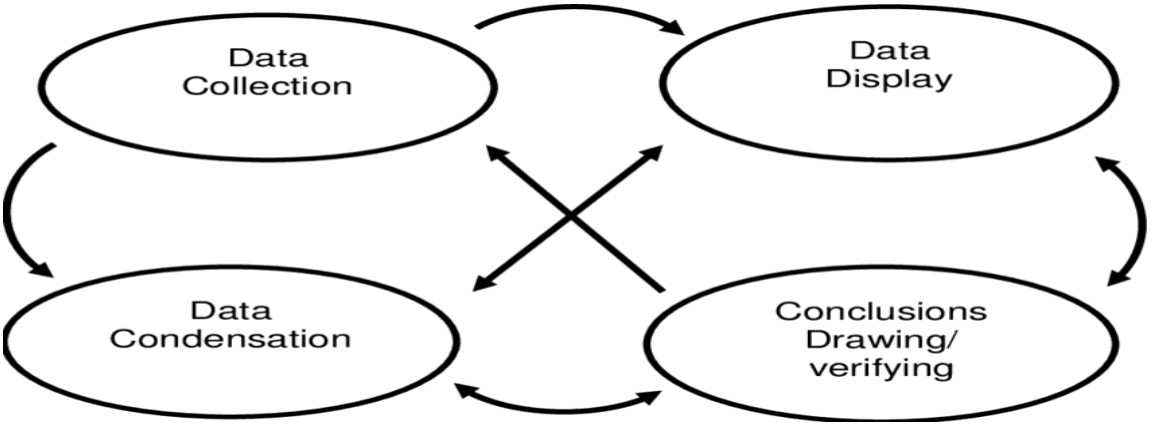
### 4.5.3 Document

Documents and archival information were gathered to correlate facts to the details gathered during the interviews.

## 4.6 Data Analytical Approach

Data analysis is an essential step in research since it entails a structured process of arranging or sorting the data as well as categorizing it (Greene & Brown, 2009). Following the research framework and purpose as a guide, Miles, and Huberman's (1994) data analysis technique was employed. These techniques highlight four main components: data collection, data display, data condensation, and conclusion drawing and verification.

Figure 4. 2 Miles and Huberman's Data Analysis




**Source:** Miles and Hubermans (2013)

### 4.6.1 Data Display

Displaying data visually makes it easier to find meaning in it. Charts, graphs, diagrams, tables, matrices, and any other instruments devised by researchers, such as illustrations, are used to display research results (Miles & Hubermans, 2013). According to Boateng (2016), data display encapsulates and organises information to assist in the development of themes and to serve as a starting point for further investigation.

### 4.6.2 Data Condensation

Miles and Hubermans (2013) describe data condensation as the method of choosing, concentrating, simplifying, aggregating, and or transforming the data, e.g., coding, patterns, jottings, a case, cross-case, and so on. To begin, the researcher conducted interviews and recorded data on the use of SISP in SMEs. The researcher then transcribed the data. The data that was not applicable to the research questions were discarded after engagement with participants. Irrelevant data is information that has no bearing on the study's theme but is relevant to the analysis. Following that, the researcher presented the data in the form of descriptive statistics after collecting and reducing the data. Lastly, in the discussion section, the information gathered was compared to the theory and previous literature (Boateng, 2016).

### 4.6.3 Conclusion Drawing and Verification

The qualitative study begins as soon as the data is collected, observing regularities, patterns, interpretations, potential combinations, and propositions (Miles, Huberman, & Saldaña, 2018). As the analyst works, the conclusions are double-checked. After the data has been obtained and a provisional conclusion has been drawn, the conclusion drawing process begins. To put it another way, the hypothesis is constantly analysed, and its validity is checked in order to arrive at the perfect conclusion about the use of SISP and its effect on SMEs.

## 4.7 Chapter Summary

The various paradigms and analysis methods were discussed in this chapter. In addition, the validation for the use of qualitative and critical realism was explained. The method of conducting interviews, data collection, and analysis were all clarified and discussed in this chapter. With that in place, the study's findings are presented in the following chapter.

# CHAPTER FIVE

# RESEARCH ANALYSIS AND FINDINGS

## 5.1 Chapter Overview

The previous chapter introduced different research paradigms and discussed why the critical realism research paradigm and case study approach were the best fit for this study, as well as how they affected data collection methods. The current chapter aims to present the research findings in relation to the case studies of the three SMEs concerned, as well as how they can use SISP in their activities.

## 5.2 SME 1 Case Description

SME 1 is an Apsonic motorbike shop that deals in the selling of Apsonic motorbikes and their respective parts. SME 1 owner has an HND in Accounting from Tamale Polytechnic now Tamale Technical University (TATU) in the year 2018. Due to the decline of organized public transportation networks, non-conventional modes of public transportation have exploded in popularity, originated by minibuses and shared taxi/vans, and more recently by commercial motorcycles (Kumar, 2011). Unlike other Ghanaian towns, Tamale has a high rate of motor vehicle ownership and use for transportation (Wahab & Salifu, 2017).

Apsonic is a Decheng International Group motorcycle brand that focuses on research and development (R&D) i.e., activities companies normally involve in to create and innovate new products and services which is the first stage in the product development cycle (Kenton, 2019), distribution and channel network, and after-sales service for motorcycles and accessories. The business firm is based in Lomé, Togo, and was established in the year 2005. Lomé Port is one of the West African cargo distribution and re-export hubs, and it is open to the outside world. Lomé Port is an entrepôt for landlocked countries in West Africa, with connections to Ghana, Benin, Mali, Burkina Faso, Niger, and Nigeria via well-connected roads.

Since its inception, SME 1 was registered as an intermediary or a retailer in the year 2015. The shop is located in the capital of the northern region that is Tamale at an area called "Lamashegu" of Tamale south.

### 5.2.1 Services Provided

SME 1 Apsonic motors that are owned by a private individual initially started with an operating capital of Ghc10, 000. With that, he first started with the sale of only Apsonic motor parts. In his operations, he creates the link between himself and some motorbikes engineers within his environs through which he was able to garner many customers and sales. Currently, aside from the sale of spare parts, he now deals in the sale of almost all Apsonic brands of motors including motorbikes, tricycles, motor king, "Pragya" etc.

He is engaged indoors to door delivery of goods to customers who require his product but are far or cannot be available in person. Due to this, the shop is popular among the dealers of Apsonic motorbikes and parts in its operational area. They deal in the following activities:

1. **Sale of Motorbikes:** The sale of motorbikes has been on a rise in the north since people see them as a cheap and convenient means of transportation. SME 1 reported that in a month, they could have a sale of only motorbikes of not less than fifty (50). Apsonic motors include: Apsonic jungle, Apsonic 125, Apsonic 125-30, Apsonic 50-A, Zone 170, etc.
2. **Tricycle:** The tricycle can be seen often carrying rice, food, sachet water, fruit, and so on. They are small and supportive, and yet they are slowly but steadily crossing the streets of Tamale, moving their tiny wheels into the transportation arena as one of the main modes of transportation for both goods and humans. However, whether you think they are useful or annoying is beside the point; the tiny tricycles have undeniably made their way into Ghana's market and economy, and they are making a difference by

removing burdens from people's shoulders and creating jobs. The tricycles have firmly established themselves. Since its inception, the majority of the population engage in its usage as a means of transporting goods as it is generally accepted in society. Apsonic has tricycles such as AP 150 ZH, AP 175 ZH, AP 200 ZH, etc. Recently, they added a new one that consumes diesel as the first of its kind as a tricycle.

3. **Spare Parts:** They deal in the sale of parts such as complete engine, engine oil, horn, crutch cable, brake pads, hand brakes, keys, helmet, mirrors, complete engines, etc. They do wholesale of the parts to other colleagues in the business. Definitely, as far as a vehicle is continuously being used, parts will wear out, which will demand replacements (Seitz, 2007).

### 5.2.2 Impact on the Society

The business currently has five employees who work under the supervision of the proprietor and are all receiving a monthly remuneration. The workers are delegated to attract potential customers, aid in the sale and marketing of the bikes, make accounts to sale, etc. to their proprietor.

Delivery service providers also benefit from the discount sale as well trade-credit method of sales to their delivery companies. A non-governmental organisation (NGO), government workers, farmers, traders all purchase their motorbikes and tricycles from the shop at a lower cost.

## 5.3 SME 2 Case Description

This is a building materials business hub or shop that is located in the capital of the northern region. According to the founder, it came into existence almost three years ago. He started by learning the trade under the supervision and guidance of his uncle who is also into the selling of building materials. SME 2 came into existence when the owner (after garnishing a lot of

experience and some capital) decided to part ways with the uncle in the year 2018 on a mutual agreement. SME 2 started with an initial capital of Ghc 10,000 with the sale of only cement at the beginning. Since then, it has been operating at an area call Kalpohin in the Tamale north dealing in the sale of cement of all brands (diamond, ghacem, sall and Dangote cement), iron rods, nails, paints, tiles, and so on. In Tamale, owning a house has become a top target priority for everyone due to the sale of such materials within the environs, and attracts many customers although there is still much room for needed improvement.

### 5.3.1 Impact on Society

Just like described by the first case, SME 2 has helped a lot of local contractors as well government institutions and individuals in providing quality and affordable services to them. Contractors who are currently out of cash are able to purchase the goods on trade credit and then given a timeline to pay. Government institution such as schools, hospitals, clinics, etc. that needs maintenance also engages the services of SME 2 to help provide them with materials they need.

Aside from that, SME 2 has also created jobs directly or indirectly for individuals within the metropolis. They are eight workers directly under his watch and he pays them a monthly salary each. They help him with the running of the business and make sure customers are satisfied. Indirectly, SME 2 has created some link between tricycle operators who carries the materials bought by customers to their destination, which the customer pays. Mason, carpenters, and tile layers all get recommendation from the owner of SME 2 to which they are rendered service and paid after their works. SME 2 has also been involved in some corporate social responsibility in the community by making donations towards the construction of a community toilet within the area.

### 5.4 SME 3 Case Description

SME 3 is a multimedia business located in the capital of Northern Region, Tamale. The owner graduated from the University for Development Studies in the year 2018 where he obtained a bachelor's degree in pure mathematics but formed the firm in the year 2016. SME 3 core business operations are providing quality photography, videos as well as graphic designing (stickers, banners, logos, and invitation cards). According to the owner, the idea was articulated as a result of the inadequate or poor quality of the aforementioned service in the metropolis. At first, because of limited capital, he started with only photographic service before later bringing on board the other services after training he acquired from a short course with private organisations.

#### 5.4.1 IT Tools Used

- **Camera:** An instrument used to capture images.
- **Trigger:** An instrument that allows the camera to communicate with a flash without a physical connection to the camera.
- **Tripod Stand:** A stand with three legs that is used to support something such as a camera or telescope.
- **Godox Softbox:** It is a softbox being spread and like an umbrella when folded and it is used to increases video or picture quality.

Aside from the above-mentioned, basic tools such as computers, applications for picture or video editing, global positioning system (GPS) address are used in the activities of the business.

#### 5.4.2 Mission and Objective

To ensure a high-quality delivery of photography, videography, and graphic designing (banners, stickers, invitation cards, and logo designs) to individuals within the northern region of Ghana.

### 5.4.3 Impact on Society

The business currently employs about nine persons to help in the operations and management of its activities.

## 5.5 Finding from the case

The results of the three case firms, each based on different owners in the report, are presented in this section. Responses from SME 1, SME 2, and SME 3 relating to the objective of the study, are clarified.

### 5.5.1 Case one: Nature of SISP Used (SME 1)

The study seeks to explore the impact of strategic information system planning in SMEs and to ascertain the nature of the SISP technology used in the running of the business activities so that the business can achieve its set objective.

The following are some of the information technology tools or online services employed by SME 1:

**Table 5.1 Technological Tools deployed by SME 1**

| **Information Technologies Tools/Online services used** | **Description** |
|---|---|
| Point-of-Sale (POS) | It is an inventory management software that enables the business to track their sales, manage customers' records, inventory, and other business transactions. |

| | |
|---|---|
| Quick Response (QR) code | The business uses the code to direct customers to their location and sending of messages. |
| Mobile money payment system | A mobile platform for making a financial transaction with the use of a mobile network that helps ease the stress of physical money movement. |
| Sage accounting software | It is accounting software used to keep proper books of accounts or records of business transactions. |
| Mobile phone | A medium use by the business to communicate, send direct SMS, and take pictures of goods for evidential sake. |
| Closed Circuit Television (CCTV) Camera | It is used to record images and serves as a monitoring television of activities in the business. |

From the onset, after the interrogations, the findings indicate that the business organisation adopted SISP in its operations and activities. As to the nature of SISP, Lederer and Sethi have come out with four different approaches, namely PROplanner, Business system planning (BSP), Information Engineering, and Method/1; while Earl has identified five approaches, namely business-led, method driven, administrative, technology-driven, and organisation.

In the interview process,

The sales personnel said:

*"**Although I don't know much about SISP**, we use social media networks such as **Facebook, WhatsApp, or email** to make a request or contact our customers. The shop also has a line phone, which is given to customers to call in and make inquiries or clarifications. A **desktop computer** is also made available which is handled by one of his employees who has a little knowledge in Microsoft word and excel to prepare documents as well as keep records of certain vital information. **Due to our limited budget**, **scanner device, a mini photocopier machine**, is also being used in collaboration with their desktop computer to attend to our customers when the need arises. But before **we normally go in for does technologies, we examine its relevant, usage and profit returns**". (Case 1- sales personnel)*

Another sales representative added:

*"Way back if you had wanted to give directions to customers as to how to use or regulate a particular product, it was very difficult using one personal phone, but now with the current availability of the **business phone and QR code**, communication with them has now been smooth and healthy. **We had to consult other people who know much about it.** They told us how it could improve customer satisfaction and improve business objectives. **We then saw the need and we explore it**". (Case 1- sales personnel)*

The owner said:

"*Yes, we have a **private IT consultant** with which we **tend to make inquiries about new technologies when the need arises**. **Before we use any technology or software, we consider how we can align it with our business set target** so that in the future we will not face any*

*challenge or be a disadvantage. And that is why we pay for the consultation from the IT man". (Case 1- owner/manager)*

The owner stated again:

*"In fact,* ***some of us are familiar with these IT technologies and we know the impact it has****, but before we employ them, we ask other friends within our environment". (Case 1- owner)*

From the above summary of the interrogation, it can be gathered that the business employs SISP in its operation but with the approach, the business resort to that of the Earl approach although some of them do not know much about it as can be seen in table 5.2.

The table below shows evidence of the EARL approach in the above discussion.

Table 5.2 Shows Evidence of SISP Approaches in SME 1

| **EARL Approach** | **Evidence from SME 1** |
|---|---|
| Business-Led | ***Before we use any technology or software, we consider how we can align it with our business set target***<br><br>*But before* ***we normally go in for does technologies, we examine its relevant, usage and profit returns****".* |
| Method Driven | ***We had to consult other people who know much about it.***<br><br>*we have a* ***private IT consultant*** *with which we* ***tend to make inquiries about new technologies when the need arises****.* |
| Administrative | ***Due to our limited budget****,* ***scanner device, a mini photocopier machine****, is also being used in collaboration with their desktop computer to attend to our customers when the need arises* |
| Technology-Driven | *But before* ***we normally go in for does technologies, we examine its relevant, usage and profit returns*** |
| Organisation | *Way back if you had wanted to give directions to customers as to how to use or regulate a* |

| | |
|---|---|
| | *particular product, it was very difficult using one personal phone, but now with the current availability of the* ***business phone and QR code****, communication with them has now been smooth and healthy* |

**Performance Expectancy on the Use of SISP by SME 1**

This section was created to identify the motive that influences a small and medium scale enterprise (SME 1) to adopt the use of these techniques and they believe that using them will change the fortunes of the business.

The owner responded that:

"*Usually, our social media handles and other device are what we normally use to aid us in the marketing of our product and services.* ***Our social media handles enable us to get in touch with customers both far and near, marketing of our services and goods is done through social media and various media houses in tamale****. In addition, I think* ***because we make consultations and get advice from the IT personnel, we also get our target customers****. In the implementation stage of these technologies, we normally spend a lot of time there. (Case 1 - owner)*

He added again that:

*"The desktop computer available has helped save and draft some vital information. In addition, that checking calendars and setting reminders are being aided with the use of the computer. The* ***scanner has also been useful when we make sales or receive goods, which involve receipts; we normally scan them with our device so that we can have both soft and hard copies of it, while the photocopier will duplicate the receipt too****. We employ those technologies*

*as a result of our business long-term target. We envisioned our business to be a well-known one in the whole metropolis so at times we take those decisions based on the business vision".*

Again, a sale representative stated that:

*"**The business contact line has also been helpful as it enables them to give quick responses to customers and track them get their records and analyze their behavior, as it was not done previously**. We decided to employ that as a result of our targeted market group and the increasing availability of mobile phones with society. Although our WhatsApp contact toowas there the needed time was not given to it as it will always require us to be online in order to respond to customers, but we still use it as well because the of **sharing pictures and videos are made simple there to our customers**". (Case 1- sales personnel)*

Hence, the response from the respondent clearly indicates how when a technology is being well studied, understood, and then implemented, it will improve the business performance and add value to the operations of the business. It will be assisting the business to penetrate new markets by being inventive and developing new products and services that contribute to future growth (Mgunda, 2019).

In summary, the findings reveal that "performance expectancy" was a result of the expected outcome or returns businesses will achieve when they strategically link their IT systems to the business objectives as it is viewed with conviction that using a particular technology will benefit or improve an individual's performance (Cohen, Bancilhon, & Sergay, 2013).

**Effort Expectancy on the Use of SISP by SME 1**

This section discusses the ease of use of the technology concerning SISP by small and medium scale enterprises (SME 1). The sole proprietor suggests that it was very easy to use those technologies since they require little or no supervision.

He owner stated that:

*"**Learning how to use devices such as phone, social media, scanner, and printer is not all that difficult**. **I think is very easy to use Facebook or WhatsApp to connect with customers**. Although the desktop computer usage looks somehow different, with time we are getting along with **especially am having senior high school graduate who has little knowledge in computers**. So, we are coping with that one as well very well". (Case 1- owner)*

The sales personnel stated:

*"Using the various social media applications and other computer devices in the shop is easy and fast to learn. **The only important thing is to be consistent with the system then you will get used to it**." (Case 1- sales personnel)*

A sale personnel added:

"*In the process of using these technologies, we don't find it difficult at all. **We make a lot of inquiries as to the implementation process, implications, business profit returns, and its consequences**". (Case 1- sales personnel)*

The sale representative added:

*"The business has a strategic plan when it comes to the introduction of a technology, **so mostly there are no challenges when it comes to usage**".*

Hence, the above interrogation clearly shows how the ease of use those stakeholders find during the implementation of IT for their business and how it can increase the level of behavioral intention as well (Attuquayefio & Addo, 2014).

In summary, it can be seen clearly that the "ease of use" is a result of the business firm understanding the various steps to consider before implementing a particular technology of which mostly they seek assistance from expert.

**Social Influence on the Use of SISP by SME 1**

This section discusses whether the usage of strategic information system planning by SMEs is a societal motive or otherwise. Many of the technologies adopted by the business are a result of colleagues or people's influences.

The owner said:

*"Learning how to link up some of our business objectives to the technologies we employ at times were influence by the society.* ***Because of our target of getting more recognitions, popularity, or high market returns, we usually make some the decision based on societal motive****". (Case 1- owner)*

He added again that:

*"Although we employ technologies, before we do that, we consider the society we live.* ***When the society get much into a particular technology, we at times then deem it a responsibility to implement it****".*

The sales personnel stated:

*"Yes, in our business,* ***we started engaging in social media when one of my employees display our product on his WhatsApp status some time ago****. After that, he started getting some*

*requests and inquiries from his friends. Therefore, I was advised by him to implement the usage of social media in the operations of the business". (Case 1- sales personnel)*

A sales representative said:

*"Yes, the demand of our business mostly determines us to use some technologies to ease pressure on ourselves. For instance, we use the online payment system (momo) to save our monies and make other business transactions so that* ***to avoid any thievery or misunderstanding****". (Case 1- sales personnel)*

Another sales personnel added:

*"With the level of competition, we find ourselves in, we cannot afford to make certain errors. So,* ***with the implementation of a new trend of technology*** *to improve sales, we make a lot of broader consultations". (Case 1- sales personnel)*

Hence, from the statement above it can deduce that business operators are highly socially influenced when it comes to the kind of technology they are using and when or where to use them. According to Barki and Hartwick (1994) in the literature on technological acceptability, dependence on others' opinions is only significant in compulsory situations.

In summary, stakeholders in the business are socially influenced by the business they operate for and the society within which they find themselves.

**Facilitating Conditions on the Use of SISP by SME 1**

This aspect deals with the circumstance or instance that facilitates the usage of strategic information system planning technology by SMEs. Regarding SMEs and technology usage and

positioning, the people interviewed narrated that operating with these technology does not require much education or terms and conditions.

The assurance of dependable technical assistance, as well as the skills and resources to use the technology, are critical to its successful deployment by users in the usage of any information technology or system. Resource constraints and a lack of critical support during difficult times will cause irritation and dissatisfaction with the system. In the case of my study, the following is what the respondents had to say:

The owner stated:

*"Yes, **we can use some of these technologies because of the availability of our IT personnel** who knows when, where, and which technology to employ. Usage of mobiles phones, social media applications, and email have all been friendly due to my **personal knowledge** about them". (Case 1- owner)*

He added:

*"Yes, we have an **IT guy among our staffs** who at times gives us advice of how to use and implement some the technologies".*

A sales representative said:

*"We always have a particular person we **outsource our IT resource from**, so most times he does the recommendation, and then we also have the chance to make our own assessment before considering it". (Case 1- sales personnel)*

The sales representative added:

*"**I am a senior high school leaver, I use some of these technologies at times**, so, therefore, assigning them to the rightful places that will be beneficial to our business is not a problem."*

Another sales representative said:

*"With regard to network, we have a very **strong internet connectivity** in our business shop. We always rely on it for all our internet access". (Case 1- sales personnel)*

She added:

*"I got a desktop computer at home of which a family relative dashes me. I have learned a lot using it for about two years now. Computer basics such as typing, photocopying, and scanning is not a problem so far as being around."*

Hence, the above statement indicates that with the business having the necessary resource and the needed skills available, it will facilitate the smooth usage of technology. In addition, the availability of internet service, skilled personnel, and manuals support them to judiciously use applications and other devices (Ghalandari, 2012).

In summary, the availability of resources, tools (computers, phones, etc.), and skilled personnel enables the facilitating conditions of the business firm.

**Behavioural Influence on the Use of SISP by SME 1**

This viewpoint holds that powerful circumstantial or environmental forces can drive a consumer or client to utilise a product or service without the person having established any sentiments or effects about the object he or she is patronising. Concerning this research, the owner stated:

"*Yes, actually in some of the technologies we use and the* ***phases of implementing*** *it goes through we never had any education or connection for them. It got to a time where especially* ***our customers within the working class especially those with formal education tries to always query us why we don't have any IT tools*** *in places where it is needed so that it will make our work easy. So,* ***we started using it the moment our customers begin to ask questions****". (Case 1- owner)*

He added again that:

*"We get some of the ideas from our* ***customers and competitors****. Through that we learn how to implement it and have proper control over them".*

A sale personnel said:

*"As you know we now leave in a* ***technological world****, so as the society moves towards it definitely, we also have to employ to the best of our knowledge so as to catch up with other competitors. Therefore, we will continue to use it so far as it will help propel our business and also help as archive are set goals". (Case 1- sales personnel)*

Therefore, the above statements clearly indicate that some of the technologies used, and their process of implementation are motivated by behavioural influences from others.

In summary, behavioural influence to deploy SISP in the adoption and use of technology helps the business operators to continuously improve business performance, and increase competitiveness (Pan & Gao, 2021).

### 5.5.2 Case Two: Nature of SISP Used (SME 2)

The second case deals in building materials such as cement, nails, iron rods, paints, tiles, etc. On the nature of SISP used, the proprietor said:

"*Sir, I won't lie to you but to tell you the truth, of late we have been using some technologies in the operation of our business which helps us a lot. We have a* ***desktop computer, point of sale (POS) application, which we operate with, they have GPS address****, which enables customers to get direction to our shop, we have company* ***mobile phone****, which is used to call suppliers and customers, it also serves as our mobile money accounts contact for money transfer. We have a long-term business plan which we normally follow when making certain decisions. We do both practical and theoretical analysis of any new trend before we employ its services. So,* ***we are being able to identify all these tools*** *and we then placed it where it is needed". (Case 2- proprietor)*

The proprietor added:

*"Before we employ any IT system, we have to make sure that we* ***properly coordinate it with our business goals****".*

The cashier said:

*"We make enquires both* ***professional and technical*** *to enable us to prevent any unforeseeable calamity". (Case 2- cashier)*

A sales representative added:

*"Judiciously* ***making proper use of technology*** *is to first note the implications and relevance it will have on your set target as a business or an individual.* ***We identify the IT needs of the business****, make consultation and then go ahead with our decision of acquiring them if it really fit well to our plan".*

The cashier sated:

*"**At times too we consider our budget for the year** before such decision of acquiring the services of an IT service or product. If the cost and expenditure fall within our budget, we make a positive decision but if it exceeds our budget, then we decide otherwise".*

Thus, the statement above clearly indicates how representatives of the business firms are able to use IT systems with caution.

The table below shows evidence of the EARL approach in the above discussion.

Table 5.3 Shows Evidence of SISP Approaches in SME 2

| **EARL Approach** | **Evidence from SME 2** |
|---|---|
| Business-Led | *Before we employ any IT system, we have to make sure that we **properly coordinate it with our business goals.*** |
| Method Driven | ***We identify the IT needs of the business**, make consultation and then go ahead with our decision of acquiring them if it really fit well to our plan* |
| Administrative | ***At times too we consider our budget for the year** before such decision of acquiring the services of an IT service or product. If the cost and expenditure fall within our budget, we make a positive decision but if it exceeds our budget, then we decide otherwise* |
| Technology-Driven | *Judiciously **making proper use of technology** is to first note the implications and relevance it will have on your set target as a business or an individual* |
| Organisation | *We do both practical and theoretical analysis of any new trend before we employ its services. So, **we are being able to identify all these tools** and we then placed it where it is needed* |

**Performance Expectancy on the Use of SISP by SME 2**

The proprietor stated:

*"Yes, studying the technology before implementing them has been of immense help to us.* ***For instance, in the sale of building material, a lot purchase the goods need to be in order to keep track of the movement of goods and services****. So, with the introduction of the desktop computer with the POS application, we have been able to* ***generate a receipt for them and also have the other saved in our files so in case of any uncertainty*** *we can make reference to them". (Case 2- proprietor)*

A sale representative added:

*"****Customers have started patronising more of our material recently*** *due to our fair and diligent nature of delivering our goods and service especially concerning the deposit and come and pick later side. We have* ***track records of all our customers and at times it helps us to also determine their behavior as well****". (Case 2- sales personnel)*

Another sale representative said:

*"****Our sales and profit margin are on a rise of late****. When we use this technological investment well,* ***we are told it will have a positive impact on our business****". (Case 2- sales personnel)*

The cashier added that:

**"***They have said almost all but to add a little to what has been said, especially the mobile money (MOMO), it has to help me personally by* ***keeping safe of the monies collected as well as making payment to my superiors or suppliers very easy and convenient****". (Case 2- cashier)*

Hence, the above statement indicates how business operators understand the implications of using the SISP technology and the long-term benefit it will have on their small-scale business.

In summary, the business managers have understood the importance of SISP, and when used appropriately, how it can generate more profit for their business (Sair & Danish, 2018).

**Effort Expectancy on the Use of SISP by SME 2**

The proprietor stated:

*"Although not until now we don't have any knowledge about SISP, but your explanation of* ***SISP clearly informs me that we have been using it indirectly****.*

*When we are to use new technology, studying the technology important to the firm and what it will bring on board is not difficult.* ***Some of the technologies are just a matter of reading the instruction guideline especially with the point-of-sale application and you will get familiar*** *with them while we do broader consultation with expertise before usage". (Case 2- proprietor)*

A sale representative said:

*"Yes, we have a way we introduce new trends to our business. We do not just wake up and start its implementation.* ***A lot happens behind the scenes before we employ them to use. So, considering all this we don't face any challenges****". (Case 2- sales personnel)*

Another sale representative responded that:

*"Using this is simple for me.* ***Some of the IT devices I have been using for mypersonal needs at home****. So with my boss introducing them in business operations* ***we don't have difficulty at all****". (Case 2- sales personnel)*

He added:

*"First when he introduced the momo payment mode, some of them were having fears of sending money through it with the fear that the night is network failure or maybe mistakes. However,* ***with advice and education from and colleagues****, it has not been a big issue. We are using it*

*effectively without any mistakes or error and even when it happens,* ***we quickly contact our service providers****."*

Hence, the business collectively accepts the SISP implementation process and found it is easy to work with. The ease with which they understood it is clearly influenced by the sort of expertise and advisors they have on board.

In summary, business operators understand SISP and had a better learning platform of how to use it because they have strategies in place as well as experts whom they consult when the need arises (Jeon, Sung, & Kim, 2020).

**Social Influence of the Use of SISP by SME 2**

The proprietor stated:

*"Although we started using some of these technologies and placing them at the rightful place, a lot of the implementation has been due to societal influences. For example,* ***a friend who is into the sale of provisions lures me to the adoption of the point-of-sale application****. This app has been able to keep customers record, analyse the customer behavior and make accountabilities for all sales easier and faster". (Case 2- proprietor)*

Another sales representative said:

*"Our customers too have influence in it,* ***for instance, the momo usage was as a result of a suggestion made by one customer****. The customer one time mentioned it and tries to use it to can be used to our work easier and faster". (Case 2- sales personnel)*

Another sales representative said:

"*Our communication with our customers on phone was also to address their needs and wants was first* ***initiated by our observation from our competitors****. Getting some who attends to customers online when we are less busy transformed our business immensely". (Case 2- sales personnel)*

The cashier said:

*"****Actually, our competitors have also had a great influence on us****. Some of the technologies we use and how to use them as been as a result of their influence". (Case 2- cashier)*

The proprietor also added:

*For instance,* ***a friend of mine introduces me to one of the accounting software's*** *(sage accounting). He was my colleague back to the basic school level who is now a chartered accountant by profession. He told me a lot about it especially how to use it and its positive implications". (Case 2- proprietor)*

In summary, the above statements indicate business operators were influenced by society, the work, the individuals they associate themselves with, and their competitors (Kulviwat, Bruner II, & Al-Shuridah, 2009).

**Facilitating Conditions on the Use of SISP by SME 2**

The proprietor said:

*"Yes,* ***we will need to fulfill some conditions before we can use these IT tools effectively and also placed them at strategic points****. For instance,* ***we had a desktop computer which allows us to use the point of sales application and other tools****". (Case 2- proprietor)*

A sales representative said:

*"With regards to contacting of customers, we just acquired a* ***new company phone which is purposely designated to that****. We use it for business-related calls and messaging only. Anyone found culpable using it for personal is at his/her disadvantage". (Case 2- sales personnel)*

Another sales representative said:

*"Concerning the knowledge and usage,* ***am a senior high school graduate and had little knowledge about computers and some IT devices****, so, therefore, is not difficult and at times too I teach my colleagues how to use them of which they get used to". (Case 2- sales personnel)*

She added:

*"Yes,* ***I have knowledge of how to use the computer and the software. So far as internet connectivity is stable, I can work with the software****".*

Therefore, these responses from the various stakeholders show they had little knowledge as to how to align their business with IT tools effectively (Skoumpopoulou, Wong, Ng, & Lo, 2018).

**Behavioural Influence on the Use of SISP by SME 2**

A sale representative said:

*"Yes, the environment we found ourselves in really has influences on us as a business. At times* ***competitors push as to implement some of these tools****. If we want to keep our customers happy, we have to do what pleases them but won't have a negative impact on our business". (Case 2- sales personnel)*

The proprietor said:

*"Our customers live* ***within our environment*** *and so they know the environmental trends. If any innovation gets much relevant to the customers and we fail to implement them, definitely it will affect both of us. Therefore,* ***customers leaving in the same environs with us influence our decisions****". (Case 2-proprietor)*

Hence, these responses indicate how behavioural influences from the environment affect our decisions (Tolefree, 2020).

### 5.5.3 Case Three: Nature of SISP Used (SME 3)

The third case is a multimedia business located in the capital of the Northern Region, Tamale. It is involved in the provision of quality photographic pictures and videos as well as graphic designing (stickers, banners, logos, and invitation cards). On the nature of SISP used, the owner said:

*"When we started the business, we did not get things easy at first especially with regards to customers.* ***Therefore, we adopted the online marketing strategy, which involves the use of various social media handles such as Instagram, Facebook, Twitter, and WhatsApp****. After implementing all this, we began to experience some changes.* ***These decisions were made with our IT support and the manager of the business before a conclusion where drawn****". (Case 3- owner)*

The general manager said:

*"Aside from the social media applications,* ***the installation of desktop computers and a laptop of which will be used to create room for the hosting of applications*** *is also provided. The accountant, marketing officer, and other staff used them for their daily activities when the need arises. So, therefore, a lot of the suggestions and ways of how, when, and which questions are being answered by our hardworking staffs at the top". (Case 3- general manager)*

The general manager added:

*"With the kind of expertise and quality staff, we have at our disposal,* ***in every decision they make they will have to do various consultations among themselves to know as to whether it is in line with our business model or objectives before they implement them*** *". (Case 3- general manager)*

The receptionist said:

*"The business has its long-term target. So, therefore, the managers of the structures in the business do not just sleep on their job. They work on the various means that can progress the business so that we can archive our set target. They* ***gather a lot of information before they make decisions*** *to bring in new technologies to avoid future problems". (Case 3- receptionist)*

She added:

*"Our general manager does a lot of work to help the business succeed.* ***Some decisions to bring in technology by him take a lot of time****. He normally considers our* ***business mission and objective, our long-term goals, the current information available concerning that particular technology, and the future consequences*** *of it. So, decisions are made based on the positive outcome". (Case 3- receptionist)*

In summary, with the above information provided above, it can be deduced that although technologies are employed in their business, they invest much of their time in understanding the technology first before its implementation. Top operators such as the general manager, the IT manager, the marketer, and the cashier or accountant all have input in the decision made in the selection process (Bailetti, 2012).

In conclusion, table 5.3 justifies that the business organization although have little knowledge about SISP to be specific, but they do have hierarchical procedures through which a technology

is considered to pass before its implantation. Therefore, the Earl approach can be seen as the one being used.

The table below shows evidence of the EARL approach in the above discussion.

Table 5. 4 Shows Evidence of SISP Approaches in SME 3

| **EARL Approach** | **Evidence from SME 3** |
|---|---|
| Business-Led | *When we started the business, we did not get things easy at first especially with regards to customers.*<br><br>***Therefore, we adopted the online marketing strategy, which involves the use of various social media handles such as Instagram, Facebook, Twitter, and WhatsApp*** |
| Method Driven | *He normally considers our* ***business mission and objective, our long-term goals, the current information available concerning that particular technology, and the future consequences*** *of it.*<br><br>*The business has its long-term target. So, therefore, the managers of the structures in the business do not just sleep on their job. They work on the various means that can progress the business so that we can archive our set target* |
| Administrative | *With the kind of expertise and quality staff, we have at our disposal,* ***in every decision they make they will have to do various consultations among themselves to know as to whether it is in line with our business model or objectives before they implement them*** |
| Technology-Driven | *Aside from the social media applications,* ***the installation of desktop computers and a laptop of which will be used to create room for the hosting of applications*** *is also provided* |
| Organisation | *Our general manager does a lot of work to help the business succeed.* ***Some decisions to bring in technology by him take a lot of time*** |

**Performance Expectancy on the Use of SISP by SME 3**

The service attendant stated:

*"In fact, after we understood the technological needs of the business and how to* ***align them to our business, there has been massive revenue improvement****. The number of customers has* ***increased and popularity within the society to have increased****". (Case 3- service attendant)*

The IT manager said:

*"Knowing these technologies and placing them at vantage points will* ***increase business fortunes and make the workflow of the business very smooth and efficient****". (Case 3- IT manager)*

The receptionist said:

*"The introduction of CCTV camera is expected to* ***reduce theft as well as monitor the operation and running of the business activities at the comfort zone of the manager****".*

*"I think our service delivery to have improved because after the installation of certain applications that enhance the beauty of our graphic design work,* ***quality of our work has been superior as compared to previously****". (Case 3- receptionist)*

The IT manager added:

*As someone with an IT background, I know what the business will get when we do things relating to technologies in the right way.* ***The return of efficient and effective utilization of IT*** *cannot be underestimated only if it is well orchestrated". (Case 3- IT manager)*

The general manager said:

*"We just need not rush in implementing an IT tool.* ***We have to take our time to consider certain vital factors before their implementation****". (Case 3- general manager)*

Hence, the statements above indicate that operators of the business understand the importance of strategically aligning their IT tools to their business goals. They also expect a high return in terms of investment and monetary aspects (Cohen et al., 2013).

**Effort Expectancy on the Use of SISP by SME 3**

This is what one of the service attendant had to say:

*"I think generally my understanding of SISP is limited but with it having link with* ***how to use IT tools well and placing them*** *at the necessary destination there is not a problem. I have been doing it* ***without any difficulty since I started its implementation*** *although I didn't know I have even used a particular method". (Case 3- service attendant)*

The IT manager had this to say:

*"Frankly, because of the* ***simple nature of how these tools are made****, using them to the benefit of the business has not been a tough one at all. Some* ***we learn from others or friends****". (Case 3- IT manager)*

The general manager had this to say:

*"****Due to the training I had during my HND days at the polytechnic****, using some of this accounting software such as QuickBooks or Sage accounting is not a problem.* ***I have little knowledge of the use of computers as well****. So, therefore, is never a problem". (Case 3- general manager)*

A service attendant said:

*"During the implementation stage, we don't find it difficult because* ***we have the necessary human and capital resource to accommodate it****". (Case 3- service attendant)*

The service attendant added:

*"****Our IT manager has been of immense help to us when it comes to activities relating to our IT implementation and usage****. We always rely on him for all our IT advice". (Case 3- service attendant)*

He again stated:

*"Before we introduced CCTV cameras to our business we did not have to think much because we could all feel the benefit it will have. The person who sold it to us did the installation to us and* ***train us on how to operate with it****. So, it was an easy decision when we thought of it as an emerging tool to aid in the operation of our business". (Case 3- sales personnel)*

**Social Influence on the Use of SISP by SME 3**

The general manager has this to say:

*"Yes,* ***I learn about some of these technologies from online platforms such as social media and others****. I followed a lot of* ***the popular graphic designers and photographers in Ghana*** *in order to get some knowledge. Therefore, through that being able to learn about these tools and their usage". (Case 3- general manager)*

The IT manager said:

*"Actually, a lot of these technologies* ***my friends and colleagues in the IT fraternity encouraged me to adopt them*** *and use them judiciously". (Case 3- IT manager)*

He added again:

*At times in too, through our* ***customer's recommendation****, we get to know or use some of these. Some of our customers do recommend good technologies to us that can improve our operations". (Case 3- IT manager)*

The manager said:

*"Most of my friends are* ***IT gurus so always when we meet at occasions or any other events****, we try to share our knowledge. It was through that* ***I learned of the existence of some the technologies and how to use them****". (Case 3- manager)*

Hence, this clearly indicates that the business and its operation (with some of the IT tools and how to strategically utilise them) is being influenced by society, individuals, and friends (Lu, 2014).

**Facilitating Conditions on the Use of SISP by SME 3**

The manager said:

*"Yes, first of all we needed to have the* ***knowledge and the requisite skills needed to operate some of these technologies****. Questions such as how to use, when to use, and which to use all need to be answered before". (Case 3- manager)*

He added that:

*"**Financially we have to be prepared as well**. The cost of obtaining the equipment, the operation cost, and the maintenance cost all were factored in before we made a decision". (Case 3- manager)*

The IT manager said:

***Our internet connectivity and availability of human expertise** are something we can boast of. The availability of them has also necessitated the technological advancements". (Case 3 - IT manager)*

From the above statements, it can clear to see that all the necessary staff and equipment needed to ensure the smooth operation and implementation of technology in their business is available (Ambarwati, Harja, & Thamrin, 2020).

Therefore, this means that their business firm ensures that they fulfill certain vital conditions both physical and financial, and they have the expertise available in order to operate with these technologies and link them up perfectly with their business goals.

**Behavioural Influence on the Use of SISP by SME 3**

The manager has this to say:

"*Yes, **certain behavior in the society really has an influence our choice of the technologies** we have implemented. In the society we found ourselves in, **technology has become a dominant figure nowadays**. The individual is using it in several ways. So, therefore, the people way of thinking and their attitude towards technology influence our decision sometimes". (Case 3- manager)*

This clearly attests to the fact that certain behaviours within the society at times motivate some of their decisions (Skoumpopoulou et al., 2018).

## 5.6 Chapter Summary

The qualitative findings and discussions of the study were provided in this chapter that was based on the UTAUT framework. Factors underpinning each construct were discussed and conclusions were formed. Based on the research goals, interviews with business operators and stakeholders were provided. The findings of this investigation will be analysed and discussed in the next chapter.

# CHAPTER SIX

# DISCUSSION OF FINDINGS

## 6.1 Chapter Overview

This chapter focused on the extensive analysis, discussion, and interpretation of research findings based on data obtained in the field using a survey questionnaire, interview guide, and focus group discussion. The research findings, the analysis, and interpretation were embedded in addressing the impact of strategic information system planning on small and medium enterprises in Ghana, precisely Tamale in the Northern Region.

## 6.2 Addressing the Research Questions

### 6.2.1 What is the nature of the use of SISP in the operation of SMEs in Ghana?

In this section, questions such as whether they have been using SISP, the kind or approach they used is being ask.

**Table 6.1 Nature of the use of SISP in SMEs operations (Research question 1)**

| **Nature** | **SME 1** | **SME 2** | **SME 3** |
|---|---|---|---|
| SISP being deploy | Yes, although not willingly | Yes, although not willingly | Yes |
| Technology used or available | Mobile phone, Social media, online payment systems, global positioning system (GPS), POS, desktop computers. | Mobile phone, Social media, online payment systems, global positioning system (GPS), desktop computers | Online payment, Camera, desktop computers, Trigger, mobile phone, Godox Softbox. |

| | | | |
|---|---|---|---|
| | | sage accounting software. | |

**Source:** Authors construct based on findings

The nature and approach of SISP used in SMEs operations as outlined in table 6.1, based on the study's findings. From the findings, the three (3) SMEs clearly deploy some IT tools which aid them in their operation as shown in chapter five. The SISP strategy, knowledge of SISP, and technology available or employed by persons who participate, are all described in the nature SISP in SMEs (Kamariotou & Kitsios, 2017). Participants appear to use the earl strategy, based on the data. In terms of SISP knowledge, participants reported that they know very little or nothing about it. Finally, computers, point-of-sale systems, accounting software, social media programs such as Facebook and WhatsApp, and other technology were deployed. Most of the responses given reveals that although the three SMEs uses SISP, but it is done unknowingly. SME 1, SME 2, and SME 3 respondent all testify to the fact that understanding a technology or a situation before taking the next step to implement them has a positive impact. Also, similar IT tools are being used by the three SMEs which interns to make their workload much easier.

### 6.2.2 How does SISP implementation in SMEs activities facilitate value increment or have a positive impact? (Research question 2)

This section discusses some of the questions ask pertaining to the gains or impact businesses will attain as a result of SISP implementation.

**Table 6.2 How SISP implementation in SMEs facilitates value increment**

| Impact or Value | SME 1 | SME 2 | SME 3 |
|---|---|---|---|
| Efficiency | Improve proper allocation of resources<br>Make business decision making much easier.<br>Proper analyses of customer behaviour. | Easily identified business IT needs.<br>Streamline of operations in their business | Reduce business and customers contact due to the digitilisation.<br>Enable smooth learning process by employees and customers. |
| Cost | Cost with benefit is easily identified. | Unnecessary spending is reduced. | Activities of the business is made known and clear to the external viewers. |

**Source:** Authors construct based on findings

The findings from the above table shows how the implementation of SISP will impact the operations of SMEs in relation to efficiency and cost.

The participants in the study (SME 1, SME 2, and SME 3) responses indicates that here are some benefits or impact they derived from as a result of the SISP. From the above comment by the SME, it affirms to the fact that when business properly align their IT tools to their objectives, efficiency and productivity will be on a rise.

Effective allocation of resources, prudent spending and decision making, streamlined of business activities, etc. where identified as being the outcome or results (Kamariotou & Kitsios, 2019b). The above prove the position that:

- The proper implementation of technology will be influential or beneficial to business success

### 6.2.3 What are the factors that constrain or hinder the implementation of SISP in a small and medium scale business? (Research question 3)

This section discusses various challenges faced by SMEs in the implementation of SISP.

**Table 6.2 Factors That Constrain or Hinder the Implementation of SISP**

| Constrain | SME 1 | SME 2 | SME 3 |
|---|---|---|---|
| **Knowledge deficiency** | Limited number of employees having the technical know how | Lack of the necessary personnel | Lack of the expertise skills |
| **Cost involve** | Limited resources | High cost involves in training. | Low profit level |

**Source:** Authors construct based on findings

Findings from the analyses indicates that despite the fact SISP provides several benefits to SMEs, they face a number of obstacles that prevent them from effectively utilising the services.

They required understanding of how and when to utilize it, as well as a restricted number of personnel, limited knowledge, SISP skill deficiency, lack of expertise skills, and so on, are examples of such impediments. The above constrain elements in table 6.3 can attest to the facts that limited knowledge and the cost involves hinders the deployment of the technology.

These factors dampen enthusiasm for SISP, as there is no use in owning it if it cannot be used properly. SISP enables SME operators to make sound business and IT decisions, however some of the above constraints limit its use. This confirms to the findings that facilitating condition will be very influential during the adoption and use of SISP.

### 6.3 Knowledge of SISP

Participant's knowledge of SISP and its implantation is discussed below.

**Table 6.3.1 Participant Knowledge about SISP factor item**

| Factor item | SME 1 | SME 2 | SME 3 | Reference to support |
|---|---|---|---|---|
| Knowledge about SISP process | Decisions were made with our IT support and the manager of the business before implementation starts although they have limited knowledge about SISP. | Although with little knowledge in SISP, at times too we consider our budget for the year before such decision of acquiring the services of an IT service or product. If the cost and expenditure fall within our budget, we make a positive | With the kind of expertise and quality staff, we have at our disposal, in every decision they make they will have to do Various consultations Among themselves to know as to whether it is in line with our business model or objectives before they implemented. | Hoque, Hossin, and Khan (2016) |

| | | | | |
|---|---|---|---|---|
| | | decision but if it exceeds our budget, then we decide otherwise | | |

**Source:** Authors construct based on findings

In order to ascertain the nature and understanding of SISP by SMEs in the Northern part of Ghana, respondents were asked questions that help understand the nature and position of SISP by SMEs operated in the Metropolis. However, responses gathered from the survey revealed that the application and implementation of SISP are less explored and under-utilised due to knowledge and skills gaps as it can be seen from table 6.3.1. Perceived challenges and complexities associated with its implementation and usage in managerial and operational activities where identified. According to the findings, participants apply the Earl approach. While it is unknown to them, the components of the approach such as business led, method driven, technology driven, administrative, and organisational are evident from the information they provided.

These responses were recorded from all the remaining SMEs as they all agreed to the fact that this is their first time of hearing or learning about it. The findings support the suggestion that user's knowledge of SISP will have an influence on their decision.

This consistency is also found in Levy et al. (1999) and Issa-Salwe and Aloufi (2011) where they found that the Earl approach is the most dominant one employed by the most businesses as it is seen to be simple and not complex.

### 6.4 Performance Expectancy

Respondent level of expectancy in terms of performance is discussed below.

**Table 6.4.1 Performance expectancy factor item**

| Factor items | SME 1 | SME 2 | SME 3 | Reference to support |
|---|---|---|---|---|
| Increase productivity | Because we make consultations and get advice from the IT personnel, we also get our target customers | Customers have started patronising more of our material recently | There has been massive revenue improvement | Owusu and Broni Jr (2020) |
| Enable smooth working condition | Fairness and transparency within staff have increased. | When we use this technological investment well, we were told to a positive | increases business fortunes and make the workflow of the business very smooth and efficient | Ofosu, Owusu, and Boateng (2021) |

| | | | | |
|---|---|---|---|---|
| | | impact on our business | | |

Source: Authors construct based on findings

The performance expectancy construct, once again, refers to the extent to which employing technology will assist customers when doing specific tasks. From the above table 6.4.1, it was discovered that most business owners believe they need to develop an IT/IS implementation plan in order to add value to their businesses because of the unpredictable opportunities it can provide. The performance expectancy construct contributes positively to explaining the variance in behavioral intention in this investigation. With regards to the responses of the SMEs, it agrees to the findings that performance expectance will be influential in the use of SISP.

This means that organisations with high performance expectation are more likely to utilise the SISP technique. As a result, the findings of this study corroborate those of other investigations such as Chao (2019), Attuquayefio and Addo (2014), and Lawson-Body, Willoughby, and Tamandja (2018).

### 6.5 Effort Expectancy

The kind of effort which will be required before the system implantation is shown below.

**Table 6.5.1 Effort expectancy factor item**

| **Factor items** | **SME 1** | **SME 2** | **SME 3** | **Reference to support** |
|---|---|---|---|---|
| Ease to learn how to use | Learning how to use devicessuch as phone, | Some of the technologies are just a matter of | Because of the simple nature of | Rahi, Mansour, Alghizzawi, and Alnaser (2019) |

| | | | | |
|---|---|---|---|---|
| | social media, scanner, and printer is not all that difficult | reading the instruction guideline | how these tools are made. | |
| Ease of use | Using the technologies has not been a problem because we are familiar with majority of the tools | Due to the little knowledge about IT, usage has been smooth | through training, we got used to it. | Rahi et al. (2019) |

Source: Authors construct based on findings

The researcher sought to ascertain how useful respondents find SISP in value creation in SMEs in the Tamale Metropolis. Data gathered and analysed further revealed that the majority of owners and employees of SME's finds strategic information system planning very useful as it helps them in ensuring and promoting cost-effectiveness, efficiency, quality, and consistency as well as security and timeliness in service delivery, which ultimately helps in achieving good customer experience and satisfaction. Simpler technologies are easier to use and learn, and they are adopted faster than ones that require the adopter to acquire new skills and knowledge. In this study, effort expectancy refers to the degree to which technology users believe it is simple

to use after learning and understanding it. According to the case findings, users had a good comprehension of the system, which made it simple for them to utilise.

From the table 6.5.1, it clearly shows that participant will find it very learn or use it. This concept is linked to the ease with which customers use technology (Broni et al., 2020). Its hypothesis about the relationship between effort expectancy and the behavioral intention was likewise confirmed. This suggests that consumers' willingness to utilise SISP is contingent on a higher level of effort. The above discussion testifies to the fact that using the technology will not be a challenge as supported by findings.

Despite the fact that the majority of participants were unfamiliar with it, the lack of education and availability of IT personnel made the learning process go smoothly. This clearly confirms the study done by Venkatesh et al. (2003).

### 6.6 Social Influence

This section of the analysis sought to ascertain whether the application and usage of SISP is a societal motive or otherwise.

**Table 6.6.1 Social Influence Factors item**

| **Factors items** | **SME 1** | **SME 2** | **SME 3** | **Reference to support** |
|---|---|---|---|---|
| Peer or societal influence | When the society get much into a particular technology, we at times | A friend who is into the sale of provisions lures me to the adoption | Online platforms such as social media and others. | Bozan, Parker, and Davey (2016) |

| | | | | |
|---|---|---|---|---|
| | then deem it a responsibility to implement it. | of the point-of-sale application | My friends and colleagues in the IT fraternity encouraged me to adopt them. | |

Source: Authors construct based on findings

In this aspect, the researcher sought to ascertain whether respondents' work environments encourage the use of strategic information system planning or otherwise. From the survey, it was found that, out of the three SMEs who participated in the survey, the majority affirmed the fact that influences from society have contributed to their business adopting the SISP method in their operations. According to the case findings in table 6.6.1, respondents were influenced by three types of people: their peers, their immediate society, and their competitors. In terms of peer influence, respondents' friends, and family members who they leave with can have an impact on their decisions. In terms of societal influence, respondents said that it comes from both the immediate society in which they find themselves and external environmental changes. And finally, respondent also indicted that the activities of their competitors in same business have a significant influence in their choice of the technology.

Social influence was likewise found to play a role in their decision to adopt the technology (Broni et al., 2020). The opinions of family and friends influenced business managers' usage of technology. This is confirmed by existing studies (Venkatesh et al., 2016). Also, from the table, it indicate that all the SMEs were under the influence form peers or friends. But with

social influence, which can be describe as an influenced from the society or environment you find yourself, SME 1 and SME 3 were seen to be influenced by it. From findings again, influence from competitors also affected all the three (3) SMEs.

Drawing from the perspective of the above findings, it is obvious that SMEs operating in the Tamale Metropolis are highly socially influenced relative to their familiarity with the kind of technology as well as where and when they incorporate them.

### 6.7 Facilitating Condition

The facilitating condition regarding the implementation of SISP is shown in the table below.

**Table 6.7.1 Facilitating condition factors item**

| **Factors items** | **SME 1** | **SME 2** | **SME 3** | **Reference to support** |
|---|---|---|---|---|
| Availability of resources | We have the able finances in order to provide for our services. | Both human and capital resource is not a problem to us. | Financially we have to be prepared as well. | Chen, Tao, and Zhou (2019) |
| Availability of expertise | With the requisite knowledge to operate, | We have the human resource to monitor our systems. | We have knowledge and the requisite skills needed to | Chao (2019) |

| | | | | |
|---|---|---|---|---|
| | is never a problem. | | operate some of these technologies | |

Source: Authors construct based on findings

Consumer views of the resources and support available to conduct an activity, as well as the degree to which an individual believes an organisational and technological infrastructure exists to support the usage of a system, are referred to as facilitating conditions (Venkatesh et al., 2016). Economic, societal, policy, and access are examples of external indicators of facilitating conditions. From table 6.7.1, factors such as availability of resources and expertise were identified as a factor by all the participating SMEs. SME 1 responses indicated that the availability of resources and expertise to train them would have an influence in their decision-making.

So therefore, from the above, it requires that all SMEs have to obtain both the resource and expertise skills before adopting the technology. From the findings, respondents indicated that the availability of physical and expertise resources will influence their adoption of the SISP technology.

As a result, our respondents' use of SISP may be influenced by their immediate environment. Findings also show how the availability of IT specialist and consultant has helped them in that regard, and as confirmed in some existing studies (Moghavvemi, Salleh, & Abessi, 2013; Puspitasari, Firdaus, Haris, & Setyadi, 2019).

### 6.8 Technology Available/Used

The technologies used by the SMEs is shown in the table below.

**Table 6.8.1 Technology available factor item**

| Factor item | SME 1 | SME 2 | SME 3 | Reference to support |
|---|---|---|---|---|
| Technology deployed in operations | Desktops, mobile phones, CCTV cameras etc. | we had a desktop computer which allows us to use the point of sales application and other tools | Laptop, printer, scanner, etc. were all employed. | Tusyanah, Sakitri, Rahmawati, Dewi, and Indira (2021) |

Source: Authors construct based on findings

Efforts to identify the technologies employed by respondents for value creation in their businesses revealed that respondents employ different technological devices that are appropriate and user-friendly and can be aligned suitably to the needs and objectives of their businesses. From findings, some of the technologies identified included computer devices, photocopier machines, QR, POS, scanners, mobile phones, and the internet. Moreover, it was identified that the availability of these devices can influence their adoption of SISP as it can be seen in table 6.8.1.

These devices employed are very beneficial and more impactful because they help promote the operational efficiency, effectiveness, and service delivery and as well helps in the publicity and

promotion of our business through social media, data storage and information sharing with customers, reliability, and consistency of service delivery; and, ultimately, enhances good customer experience and satisfaction that reciprocates with repeat purchases and customer loyalty (Baden-Fuller & Haefliger, 2013).

### 6.9 Behavioural Influence

Behavioural influences regarding the implementation and usage are shown in the table below.

**Table 6.9.1 Behavioural influence factor item**

| **Factor item** | **SME 1** | **SME 2** | **SME 3** | **Reference to support** |
|---|---|---|---|---|
| Strength of the technology | Our customers within the working class especially those with formal education tries to always query us why we | The environment we found ourselves in really has influences on us as a business. At times competitors push as to implement some of these tools | Certain behavior in the society really has an influence our choice of the technologies | Samarasinghe and Silva (2019) |

| | | | | |
|---|---|---|---|---|
| | don’t have any IT tools | | | |

Source: Authors construct based on findings

The behavioural influence perspective holds the belief or school of thought environmental forces can compel a consumer to utilise a product or service without having any established sentiment or effect about the product or service patronised. The SMEs' behavioural intention to utilise the technology was found to be matched with the utility or strength with which they found it. The majority of SMEs had no prospective knowledge of the technology they saw themselves employing, but they will continue to use it as long as it is valuable to them and provides them with an additional form of income. Furthermore, respondents stated that they will continue to use the platform as long as it is beneficial.

From the above table 6.9.1, factors such as the strength or opportunity factor and the continually factor are seen to influence the behavioural intentions of users.

The researcher sought to ascertain how long respondents have been using SISP and if they intend to use it longer. Based on the research findings, some of the technological devices employed by respondents were based on self-initiation to incorporate those devices and applications to promote business activities without any previous skills or knowledge while others are based on the influence of stakeholders including customers and competitors in the market, which has been very impactful in terms of competitiveness and market share (Enslin, 2019). An individual's intention denotes how eager he or she is to work and how much effort he or she would put forth in order to carry out a behaviour; as a result, it is natural for intentions to include persuasive aspects that impact behavior (Owusu et al., 2021).

Moreover, due to the impactful nature of SISP, in promoting operational and managerial effectiveness and efficiency, respondents (notably SME operators in Tamale Metropolis) intend to use SISP up to the foreseeable future without cessation. Drawing from the above perspectives, it is imperative to state that implementation of SISP is driven by the behavioural influence that is more impactful relative to the increase in competitiveness and market share.

### 6.10 Use Behaviour

The use behaviour of SISP as reported by respondent is discuss in the table below.

**Table 6.10.1 Use Behaviour factors item**

| **Factors** | **SME 1** | **SME 2** | **SME 3** | **Reference to support** |
|---|---|---|---|---|
| Physical and mental readiness | Our staff some had basic knowledge in IT, so with the readiness we are prepared. | With the help of our IT expert, we are ready. | The technology we are using is not all that complicated, therefore we are prepared. | Berry (2017) |
| Reliability | We believe in our system implantation | The availability of resource make us to believe in | Network connectivity has been good of late so we | Purwanto and Loisa (2020) |

| | | | | |
|---|---|---|---|---|
| | process and our network. | our systems. | believe in our systems. | |

Source: Authors construct based on findings

The researcher sought to ascertain the use behaviour of SISP by respondents either consistently or based on uncertainties. From the survey, it was found that respondents incorporate the usage of strategic information system planning as a matter of necessity much as the objectives of their businesses are concerned. The Use Behaviour was investigated by observing how people really use the technology. From table 6.10.1, the physical and mental readiness as well as the reliability of SISP is seen as a motivation factor by all the participants. This agrees to the findings that use behaviour will have an impact in SISP and the outcome of the technology.

In this case, respondents use SISP with considerable commitment and consistency, with the notably social media applications used most often to promote their businesses on social media and as well share information and receive feedback from customers and client inquiries. The computer devices are similarly used most often to keep vital records of both customers and the business, which has made user behaviour more committed and consistent than otherwise (Agudo-Peregrina, Hernández-García, & Pascual-Miguel, 2014).

### 6.11 Outcome/Results

The expected result from SISP implantation base on the interview is shown below.

**Table 6.11.1 Outcome/Results Factors item**

| **Factors** | **SME 1** | **SME 2** | **SME 3** |
|---|---|---|---|
| Ensure efficiency | Work has improved smoothly | Also, work rate of staff | Transparency and fairness has been on a rise. |

| | | | |
|---|---|---|---|
| | | has increase immensely. | |
| Increase productivity | Our returns has been much compared to previous years. | We have experienced a hike in profit since we change our strategy. | Every business is operating to make profit and we are making it now. |
| Proper allocation of resources | We now align our resource properly. | The problem we usually face as a result of misplaced priorities has become a thing of the past. | Resources are now well accounted which increase transparency. |

Source: Authors construct based on findings

In this part of the study, the researcher sought to ascertain how respondents deal with challenges relative to the implementation and usage of strategic information system planning. However, responses gathered from the survey revealed that as much as SISP is considered a great tool for promoting the effectiveness and efficiency of businesses, it also helps in increasing competitiveness for business sustainability. from findings, proper alignment with IT technology to participant business was seen to be more proactive in dealing with future

uncertainty, reducing mistakes or errors in the decision-making process, and managing customer's data or information appropriately which will then ensure efficiency, increase productivity, and also increase profit margin. Stakeholders involved in business management categorically state the importance of information technology to their business. Its deployment is supposed to improve operational productivity, effectiveness, and ability to respond quickly to client needs. Design, manufacturing, research, and development (R&D), distribution and sales, and feedback are all areas where they may help (Apulu & Latham, 2011).

Respondents, therefore, incorporate different strategies put in place in order to attain the above stated benefit. The respondents recounted the post IT strategic alignment era to the pre IT strategic alignment era, which has really made a significant achievement today (Haynes, 2010).

Therefore, from table 6.11.1, it can be observed that the findings agree that expected outcome will be influenced by the above factors.

## 6.12 Chapter Summary

The chapter presented an analysis of data collected from the survey. It contains an analysis of data with respect to knowledge of SISP, performance expectancy, effort expectancy, social influence, facilitating condition, the technology available & use, behavioural influence, use behaviour as well as outcome and results of strategic information system planning. The study employed statistical tools in presenting the data gathered from the field. The research findings, analysis, and presenting were grounded on the impact of strategic information system planning in the Tamale Metropolis in the Northern Region of Ghana.

# CHAPTER SEVEN

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 7.1 Chapter Overview

The entire research is summarised and synthesised in this chapter. It includes a summary of the research findings organised by objectives, as well as a conclusion and recommendations. The summary of the research findings was primarily embedded in the research objectives and questions to address the research problem on the impact of SISP on Small and Medium Enterprises in the Tamale Metropolis in the Northern Region of Ghana.

## 7.2 Summary of the Research Process

The goal of this study was to see how SISP would impact SMEs in Ghana. The research background, research problem, research purpose, research questions, and the relevance of this research study are covered in chapter one, which is then followed by a summary of theresearch.

Chapter two aimed to provide a comprehensive assessment of the literature on the application of strategic information system planning (SISP) to SMEs, as well as the various terminologies and techniques.

The theoretical foundation of this investigation was described in Chapter three. Examining the UTAUT model and its accompanying concepts, as well as their applicability to the research, was part of this. Rather than developing a complete theory on the impact of SISP on business, the chapter develops a model based on the UTAUT model. There were various arguments for why it was chosen.

The research methodology used in this study is discussed in Chapter four. The paper went on to explain the three main research paradigms, as well as the research design and procedure, as well as how data was gathered and examined.

The findings were then given in Chapter five in relation to the case descriptions of the businesses involved, namely SME 1, SME 2, and SME 3, and how they employ SISP in their daily operations and the approach they use.

The data findings from the fifth chapter were analysed in connection to the study topics in Chapter six and also with SME 1, 2 and 3 all showing that the EARL approach has been adopted. The UTAUT's technology adoption variables were used to connect ideas, and explanations were thoroughly examined. In relation to the research objectives, the findings of the literature from chapter two, as well as the empirical findings and analysis from chapter five, are discussed. The current findings from the studies of the factors that influence respondent acceptability of the technology are remodeled in the framework below in figure 7.1.

Also, the analysis of findings from the research confirms to the prepositions as can be seen in table 7.1, whiles table 7.2 outlines the summary of conclusion based on the research purpose and objective.

**Figure 7. 1 Conceptual framework remodeled based on findings from SMEs**

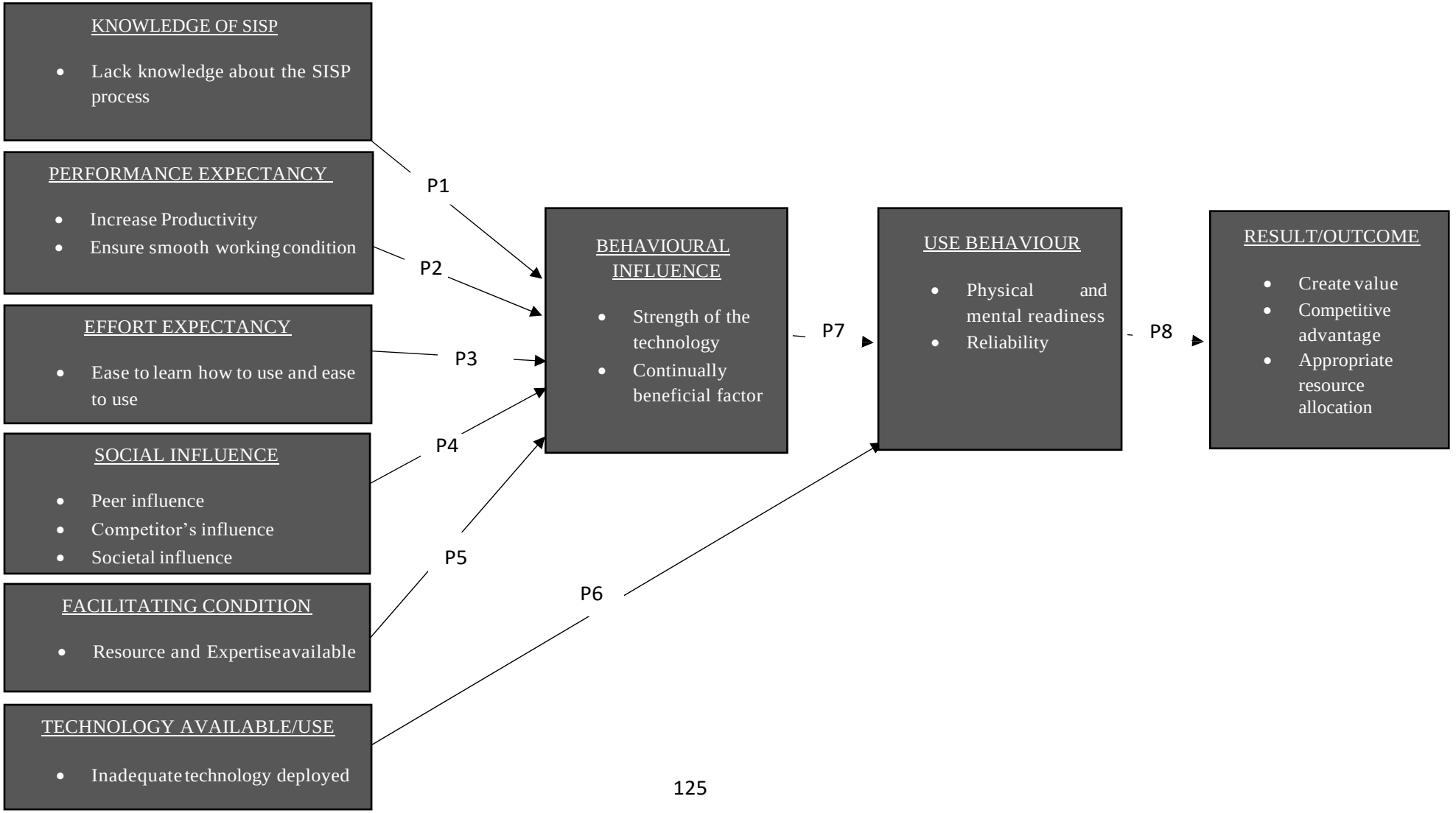


**Table 7. 1 Postulations made from findings**

| No | Postulations | SME 1 | SME 2 | SME 3 |
|---|---|---|---|---|
| 1 | Having a fair knowledge of SISP will have a significant influence on its adoption | ✓ | ✓ | ✓ |
| 2 | Performance expectancy will positively influence a user's intention to adopt SISP in their small-scale businesses | ✓ | ✓ | ✓ |
| 3 | Effort expectancy will have an impact on the user's intention to use and adopt the system | ✓ | ✓ | ✓ |
| 4 | Social influence will have an impact on the user's adoption of the technology | ✓ | ✓ | ✓ |
| 5 | Facilitating condition will have an impact on the user's adoption and use of SISP | ✓ | ✓ | ✓ |
| 6 | Technology used by the SMEs will have a significant impact as to why owners should adopt the system | ✓ | ✓ | ✓ |
| 7 | Behavioural influence will be looking at SISP goals, prediction, and anticipated benefit | ✓ | ✓ | ✓ |
| 8 | Use behaviour will have an impact on the adoption of the system | ✓ | ✓ | ✓ |
| 9 | Knowing the outcome will help determine whether users should adopt the system or not | ✓ | ✓ | ✓ |

Source: Authors construct

**Table 7. 2 Summary of Conclusion**

| **Research Purpose:** To assess the impact of strategic information systems planning on small and medium scale enterprises in Ghana. | | | |
|---|---|---|---|
| **Research objective** | **Research findings** | **Extant literature** | **Contributions, implications, and recommendation** |
| 1. To explore the nature of SISP used in the creation of value for SMEs in Ghana. | 1. The findings identified by the study reveals that the Earl approach (business led, method driven, administrative, technology driven and organisational) was the dominant approach used by the selected SMEs.<br>2. The findings reveal that social media applications such as Facebook and WhatsApp are their | Many organisations, particularly private businesses, have formed well defined Information Technology (IT) departments with numerous IT systems to assist them but little is known about their SISP deployment, use, and nature (Owusu & Broni Jr, 2020).<br><br>In a growing society, planning is the primary means through which | This research has added to the literature on strategic information systems planning and SMEs research from an inter approach, allowing for the identification of the most common SISP activities and uses.<br><br>The research has supplied important information about the SISP activities that are typically carried out. As a result of this |

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| | top social applications for customer interactions.<br>3. The findings reveal that the small business does not engage in the use of larger information systems such as decision support systems, enterprise resource planning (ERP), intelligent systems, etc.<br>4. Findings also reveal that a lot of business owners have no or little knowledge relating to SISP although they apply some of its basics. | businesses adjust to changing requirements (Marcial, 2013).<br>The advancement of information technology is an important task for present society because it allows for the presentation of new strategies and ideas by providing corporate learning procedures in constant communication with new information complicated frameworks (Ghareb, Ahmed, & Ameen, 2019). | research, small firms will be able to understand the preparation, synchronisation, and guidance policies that they will need to adopt as they implement SISP in their operations.<br>It also addresses gaps in research, given that very few scholarly or philosophical investigations have been conducted from the perspective of underdeveloped countries. |
| 2. To explore the potential value outcomes | 1. Small scale business owners generally, use basic technological tools such as desktop computers, | Delivering items or services to clients at reduced rates while also separating the products or services from | The research adds to the body of knowledge about the result or benefits derived by adopting SISP among |

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| of SISP implementation on SMEs in Ghana | laptops, printers, recorders, etc. to improve upon their sales.<br>2. They find it very easy to use those technologies and properly align it with their business objective.<br>3. The adoption of digital payment mood has also reduced the burden and threat of physical cash possess.<br>4. Findings revealed that the IT explosion driven by globalisation and socio-economic integration has created more opportunities for business growth and sustainability in the competitive landscape of management | competitors in terms of greater quality, more functionalities, and improved customer service that are clearly distinguishable from competitors is what value creation is all about. Entities can no longer design a business plan without considering IT strategy, and vice versa, in order to create effective value (Anomah & Agyabeng, 2013).<br><br>The convergence of business and IT strategy is becoming one of the most significant trends affecting businesses today (Teubner & Mocker, 2014). | businesses in Ghana, specifically in the north, and the value that is created.<br><br>The study provides information to operators about SISP and its varied techniques, as well as how such a strategy can give value to businesses that implement it for long-term prospective benefits.<br><br>This research lays the groundwork for qualitative research about the use of the UTAUT model. |

| | | | |
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| | | Managers must use performance measures that are well-suited to capturing the economic implications of the application they are reviewing when determining the 'business value' of information technology (IT) (Mithas, Ramasubbu, & Sambamurthy, 2011). | |
| 3. To highlight the challenges and issues hindering the implementation of SISP in SMEs. | 1. it was found that despite the significant and pivotal role played by SISP in value creation, the research findings revealed that the implementation and usage of SISP are under explored due to | Because of the increase in human complexity at work, business management has become a highly difficult endeavor. The devices used by management have a significant impact on the efficiency of business | The findings of the study reveal the need for business owners to be financially sound in order to engage in IT related issues. |

| | | | |
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| | knowledge and skills gaps as well as perceived challenges and complexities associated with its implementation and usage.<br>2. The findings revealed some of the challenges to include: cyber security threats, technical challenges include network and systems breakdown, identity theft that disrupts the continuity and smooth operations of the business.<br>3. Financial instability and inadequate starting capital were also seen as a big challenge. | management. The boss will be unable to use communication technology if the job project is labour-intensive. However, if it is capital-intensive, the management is in a position to use information technology (IT) and strategy to manage its activities more efficiently (Islam, 2016).<br>The insufficiency of monetary resources, the cost of IT hardware, the salary of IT professionals, software related costs, cost of internet access, poor substructure in developing countries such as erratic electricity supply compounded this problem, | In addition, since SISP is still seen as an emerging tool, it should be properly publicised, and more education should be done on its usage and implementation. |

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| | | maintenance costs, burglary, and so on are some of the challenges faced in the use of IT (Odesola & Akinola, 2018). | |

**Source**: Author's construct

## 7.3 Implications of the Study

As it is stated earlier in chapter one, the study has implications for research, policy, and practice.

### 7.3.1 Implication to Research

From a multi-stakeholder approach, this work has added to the literature of strategic information systems planning and SMEs research. The research adds to the growing body of learning and studies on the SISP, and the various approaches involved, particularly in the setting of developing economies, specifically in the northern part of Ghana. It also addresses areas for further research, given that few academic or intellectual studies from a Ghanaian perspective have been conducted.

In developing countries like Ghana, the literature on the use of SISP in SME activities, particularly among actors along with the business society, is arguably limited. This study has shown that the UTAUT model, particularly when discussing technology, may be accepted by the general public. As a result, there appears to be some relevance in using the UTAUT model to investigate the impact of SISP on SMEs. However, while the UTAUT model has been shown to be more effective than rival models such as TAM and TPB, it is crucial to note that, in comparison to IS-based research, there are very few UTAUT-based studies. As a result of employing the UTAUT model, this research has provided a new perspective on the pattern of SISP and SMEs in Ghana, a developing country. In Ghana, there is arguably little literature on SISP's use, implementation, and impact.

### 7.3.2 Implication to Practice

In terms of practice, this research gives a clear direction for businesses or even entrepreneurs who would like to implement SISP in any aspect of their operation to boost their value. As a result, the

findings of this study will be valuable in determining how impactful or useful the deployment of SISP will be for businesses.

In addition, small businesses can use SISP technology to aid in the operations and management of their operations, as competition in the business world is growing increasingly fierce. As a result, IT adoption and implementation practices must be reconsidered and modified in order to be appropriately linked with business goals. In addition, the report recommends that small businesses successfully integrate and use information technology tools into their operations in order to reap the most value. The study also points out that while some small firms hire experts for assistance and direction, they need to undertake more education and research on their own to find more profitable avenues for investment.

### 7.3.3 Implication to Policy

This study has proved the importance of SISP to businesses in terms of value generation in policy terms. This has provided important insights into small businesses and the adoption of information strategies. As a result, this research can assist small business owners in determining the strategy, training, teamwork, and policy enforcement that they will need to adopt as they implement SISP**.** Hence, this research can provide business operators and managers with good knowledge of how SISP works, particularly in terms of information technology adoption, so that better measures and regulations can be put in place to aid their operations, adoption, and implementation.

The National Board for Small Scale Industries (NBSSI) as part of its policy developmental plan can inculcate the success story chocked by SISP and the impact it has on SMEs operations in their books. In addition, this study can help the National Board for Small Scale Industries (NBSSI)

figure out what kind of planning, education, coordination, and policies they'll need to build as they roll out SISP to businesses.

Furthermore, in terms of the research's policy implications, this study presents agencies responsible for the development and creation of small businesses, such as the NBSSI, GRATIS Foundation, Ghana Enterprises Agency, and others, to gain a practical understanding of how impactful SISP has can be in relation to SMEs, its approach, and nature.

### 7.4 Limitations and Future Directions

This research, like many others, has limitations. To begin, this research only looked at three SMEs, their staff, and their consumers. Future research can also increase the sample size for the study.

SISP is under-explored by SMEs in the Northern Region and Ghana at large. Therefore, it requires extensive education by an expert to operators of SMEs so that they will learn or develop an interest in it.

Finally, to assess improvement, this study relied solely on qualitative methods. This method limited the number of respondents available to the researcher. As a result, future research could consider conducting this study in a quantitative framework to get results that are more detailed.

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# APPENDICES

## Appendix A - Introduction Letter for Respondents

UNIVERSITY OF GHANA
BUSINESS SCHOOL
DEPARTMENT OF OPERATIONS AND
MANAGEMENT INFORMATION SYSTEMS

UGBS
University of Ghana Business School

Ref. No.: INTRO/OMIS/0321/030

TO WHOM IT MAY CONCERN

29th March, 2021

Dear Sir/Madam,

LETTER OF INTRODUCTION: SHAUBU ALHASSAN (10803943)

I write to introduce to you Shaibu Alhassan who is a student at the University of Ghana Business School. He is pursuing MPhil in Management Information Systems.

He is collecting data on **"Impact of Strategic Information Systems planning on Small and medium scale enterprises (SMEs): Evidence from Ghana."**

Hence, I would appreciate any assistance you can give to him to collect the relevant information.

This long essay is under the supervision of Dr. Acheampong Owusu of the Department of Operations and Management Information Systems.

Thank you.

Yours faithfully,

**Dr. Anthony Afful-Dadzie**
**(Head of Department)**

COLLEGE OF HUMANITIES

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## Appendix B - Research Interview Guide

**INTERVIEW GUIDE- BUSINESS OWNERS (SOLE PROPRIATOR)**

**Introduction**

My name is Shaibu Alhassan an MPhil in Management Information Systems (MIS) student of the University of Ghana Business School. I am conducting a study on the **impact of strategic information system planning on small and medium scale enterprises in the Northern region Ghana.**

**Overview of the Research**

Strategic information system planning (SISP) is now an effective decision-making practice in businesses. It is an ongoing exercise that can propel an organization to determine its technological goals as well as helping the organizations to archive greater success.

An appropriate IT strategy involves the ability of businesses to utilize IT more seriously, distinguish new and higher compensation applications. Now that businesses are compelled to deal with the uncertainty and complexity relating to the environment, SISP will help IS managers to develop IS strategies that will support them in making rightful decisions to improve competitive advantage. Due to this, the study seeks.

- To explore the nature of SISP used in the creation of value for SMEs in Ghana.
- To explore the potential value outcomes of SISP implementation on SMEs inGhana.
- To highlight the challenges and issues hindering the implementation of SISP in SMEs.

You are not obligated to answer any questions that you are uncomfortable with. Thank you in advance for your valuable contribution. Your involvement is crucial to the study's success. The information you provide will be used solely for academic purposes.

**Contact Details of Student**

Name: Shaibu Alhassan

Telephone Number: 0542915244

Email Address: ashaibu014@st.edu.gh

**Contact Details of Supervisor**

Name: Dr. Owusu Acheampong

Email: AOwusu@ug.edu.gh

**PART (A)**

**Background of Respondent**

1. Kindly enlighten me about yourself and job details
2. How long have you been in the business?
3. Please how long have you been using IT tools or applications in your business?

**PART (B)**

**Knowledge of SISP**

4. Please kindly describe to me how you understand SISP
5. What were some of the success stories after its implementation?
6. Please did you encounter some challenges during its implementation?

**Performance Expectancy**

7. How useful do you find strategic information system planning in value creation in SMEs.
8. How does strategic information system planning help you in becoming more productive and efficient?
9. How does the use of strategic information system planning help you in quality delivery of services?

**Effort Expectancy**

10. How clear is your understanding of strategic information system planning in creation of value in SMEs?
11. How skillful are you in the implementation of strategic information system planning on SMEs?
12. How easy was it when learning how to use the strategic information system planning?

**Social Influence**

13. Does your work environment encourage the use of strategic information system planning?
14. Is your use of strategic information system planning (SISP) link to the fact that your partners in the business field also adopt it?

15. Do your mentors and people who influence your behavior think you should use it? Kindly explain.

**Facilitating Condition**

16. Do you think you have the requisite knowledge necessary to use strategic information system planning (SISP) in creation of value in SMEs?
17. Do you seek for help or assistance from colleagues when you find it difficult to use strategic information system planning (SISP) in your business?
18. Do you have the necessary skills, knowledge, or resources in place to use strategic information system planning (SISP)?

**Technology Available/Use**

19. Which technologies do you use in your business for creation of value?
20. What specifically do you use each of these technologies for? (Remind him of the various technologies used in SMEs).
21. What is the impact of these technologies in your business activities?

**Behavioral Influence**

22. How long have you been using the SISP process?
23. Do you intend to use it for a longer period?

**Use Behavior**

24. Please how you do normally used the SISP process? (Is it used in case of uncertainties)

**Outcome/Result**

25. In your view, how do you deal with some of the challenges involve in SISP usage or implementation?
26. Do you see SISP as a means to create value or improve competitive advantage in the business sector?
27. In the appropriation of IT equipment and tools, does SISP gives the necessary guidance.

**Closure**

28. I am done with the questioning; do you have any question to ask or anything you had wanted to say of which I did not ask?

29. Are they any available document that might be of interest to me?

Please accept my heartfelt gratitude for your time and consideration. Before the final write-up, your replies will be transcribed and sent to you for clarification if necessary.

Best wishes.