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USER COMPETENCY OF ACCOUNTING INFORMATION SYSTEM, SUSTAINABLE INNOVATION AND VALUE CREATION AMONG FAMILY BUSINESSES

JUSTICE PHINEHAS GYESI

MASTER OF BUSINESS ADMINISTRATION

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220024250

A Dissertation in the Department of Accounting, School of Business, submitted to the School of Graduate Studies, in partial fulfillment of the requirements for the award of the degree of Master of Business Administration (Accounting) in the University of Education, Winneba

DECEMBER, 2023

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DECLARATION

Student's Declaration

I, JUSTICE PHINEHAS GYESI, hereby declare that this dissertation, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own work, and that it has not been submitted for another degree elsewhere.

Signature: ……..……...…….

Date: ……..……

Supervisor's Declaration

I hereby declare that the preparation and presentation of this dissertation were done in accordance with the guidelines for supervision of dissertation laid down by the University of Education, Winneba.

Supervisor's Name: Mr. Sulemana Iddrisu

Signature: ……..……...…….

Date: ……..……

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DEDICATION

This work is dedicated to my Mom Mary Egyir and my whole family and friends for all the massive sacrifices, and pain you had to endure just to enable me achieve this feat.

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ACKNOWLEDGEMENTS

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ABSTRACT

The study examined the extent to which the user competencies such as accounting knowledge, educational level, experience, motivation and training impact accounting information system and value creation among family businesses. The study further examined the interaction effect of sustainable innovation in the relationship between user competency of accounting Information system and value creation. The target population consisted of all accounting staff working in various family businesses in the Central Region of Ghana with a sample size of eighty-six (86). The researcher used questionnaires to gather data from the respondents. The data was analyzed using descriptive and inferential statistics with the aid of Statistical Package for the Social Sciences (SPSS). The study found that training, experience, educational level, and motivation had a significantly positive impact on value creation whiles accounting knowledge had an insignificant and negative effect on value creation. The finding also showed that sustainable innovation does not strengthen the association between user competency of accounting information system and value creation. Overall, the results contribute to an emerging area within accounting function effectiveness that highlights the significance of understanding the implementation process in adopting and in implementing proactive accounting information system within all institution in Ghana.

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CHAPTER ONE

INTRODUCTION

1.0 Overview

With the advancement of Information Technology (IT), manual accounting systems are no longer adequate for meeting the information needs of decision-making processes (Al-Hattami et al., 2021; Al-Okaily, 2021). Organizations worldwide now acknowledge the importance of implementing effective Accounting Information Systems (AIS) to fulfill their business and strategic objectives (Al-Okaily, 2021). An AIS, traditionally a computerized system, collects, inputs, processes, stores, manages, controls, and reports accounting data. It supports various tasks such as planning and decision-making (Dagiliene and Šutiene, 2019). For this Accounting information system to be a success, there should be competent users with knowledge, skills, behaviour and attitudes to interact with the Accounting information systems (Tims and Akkermans, 2020). This current study intends to fill the gap in one of the under-researched areas, to be specific, the extent to which user competency of accounting information systems impact value creation, and the interaction effect of sustainable innovation in the relationship between user competency of accounting information system and value creation among family businesses in the Central Region of Ghana.

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1.1 Background to the Study

Due to the current demands and requirements of our time, the world is rapidly moving towards progress, innovation, and extensive utilization of modern systems (Witkowski, 2017). Globalization and the continuous advancement of technology have created a need for economic growth in order to achieve efficiency and advancement (Umar *et al*., 2020). In 2012, a study conducted by the Institute of Management Accountants and the Association of Chartered Certified Accountants identified numerous drivers of change

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that would reshape the business landscape and consequently impact the field of accounting in the future (Dimitriu *et al*., 2014; Yoon 2020). The ever-changing business environment necessitates organizational adjustments to align with global technological, business, and scientific changes, which have had a significant impact on business performance (Christauskas and Miseviciene, 2012; Bustiza *et al*., 2019). The increasing complexity of the business environment, coupled with heightened global competition and shorter business cycles, presents challenges for the accounting profession (ACCA, 2012). The AIS plays a vital role in processing both financial and non-financial transactions, providing high-quality information for managing business activities, planning, controlling, monitoring, coordinating, and evaluating performance (Kwarteng and Aveh, 2018). Moreover, the system reduces organizational costs, improves business process efficiency, offers reliable real-time data on demand, facilitates global knowledge and new reporting tools, and promotes integration and collaboration between risk areas and business operations (Shagari *et al*., 2017; Huy and Phuc, 2020). The ability to utilize information systems (IS) in an effective manner that capitalizes on the opportunities that IS can provide is becoming increasingly important for business professionals (Rainer and Prince, 2022). However, some users are less likely than others to experience such benefits from using IS (Koivisto and Hamari, 2019). Although these individuals may be able to utilize information System for routine tasks or apply Information System in manners previously demonstrated to them, they are not able to effectively use Information System such that they can get the maximum benefits from Information System use (Eschenbrenner, 2010; Berdik *et al*., 2021). The advent of digital technologies has had a profound impact on the innovation practices of enterprises (Nambisan *et al*., 2019; Teece, 2020). In particular, the increasing permeation of digital technologies has recently revolutionized how organizations have

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conducted business, formed connections with customers and other stakeholders (Scuotto *et al*., 2020; Bresciani *et al*., 2021) and boosted customers' value creation (Matarazzo *et al*., 2021). Most of this information are gathered by the accounting or finance department and constitute what is termed an Accounting information (Núñez-Cacho *et al*., 2022). Accounting information therefore are to a simple term any financial or material information gathered and prepared by the Financial manager or the accountant so as to present a report to the various stakeholders in need of it at an appropriate period (Islam *et al*., 2017). In order to reduce paper work, and ease referencing, some enterprises (especially large enterprises) makes use of a system (Yip and Bocken, 2018). This system differs from enterprises as well as jobs but most at times they are out to produce almost the same outcome based on its design (Yip and Bocken, 2018). For our case we shall be talking of an Accounting Information System which is to a simple language is the various processes undertaken to collect, analyze and present the output to various users (Gelinas *et al*., 2017).

Competency is associated with skills, knowledge, abilities and personal characteristics which enable employee to work successfully (Akkermans and Tims, 2017; Tims and Akkermans, 2020). The competency is a worker characteristic which underlying successful performance or behavior at the workplace (Fahmi and Ali, 2022). Every information system requires competence person who uses the system, or called user (Hadiana and Unpas, 2015; Dessler, 2015). The most important factor to successful information system is the availability of resource, including human resource and the knowledge of the system (Rainer and Prince, 2022). Accounting knowledge of manager and system owner influence greatly to the success of available accounting information system implementation (Binh 2020; Hutahayan, 2020). The introduction of information technologies has necessitated the redefinition of such information systems (Wessel,

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2021). For years, financial accounting has been considered a formal and a widespread source of information within organizations (Schroeder *et al*, 2022). In fact, Odoyo and Ojera (as cited in H. Daoud and M. Triki, 2013) argued that the mission of the AIS has risen from the simple provision of formal and financial information to encompass a broader range of information. An undeniable factor in accounting, both in practice and in research, is the impact of digitalization on accounting (Jans *et al*, 2022).

In this regard, a sustainable innovation ecosystem (SIE) has been deliberated as an ecosystem in which the collaborations between the internal departments of organizations and external organizations have been assumed to play a strategic role (Pham and Vu, 2022). In the framework of an SIE, these actors commonly target tackling social and environmental sustainability matters through their innovative operations (Mazzù *et al*, 2023). This rests upon sustainable development comprising ethical, social, economic and environmental rules to support endurance, locality, locality, property and dynamic effectiveness and environmental hardships decline (Pham and Vu, 2022). SIEs have thus promoted productivity, as well as organizational efficiency and effectiveness.

There is still a huge debate regarding value creation by family-managed businesses and professionally-managed businesses (Ray and Bhadra, 2021). In the Indian context where most firms are family owned or family-managed, the idea of shareholder value creation by these firms becomes even vaguer (Graafland, 2020). There are striking variances in the way family-owned businesses handle the management of business, beginning from management, control, succession planning, goals, risk taking and even the way they treat their employees (De Massis *et al*, 2018). These factors affect the profitability and value creation by family-owned businesses (Daspit *et al*., 2017; Harris and Ozdemir, 2020, Daspit *et al*., 2021).

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Therefore, because of technological change is typically frequent and rapid in speed, firms are increasingly complementing their internal research and development efforts with an open innovation approach to access knowledge sources that exist beyond their firm boundaries (Costa and Matias, 2020; Chesbrough and Mei, 2021). In order for acquiring firms to create more value through technological acquisitions, they should be able to successfully integrate the AIS into their organization and effectively realize technological synergy. In other words, without the realization of technological synergies, technological acquisitions do not necessarily create more value than their non-technological counterparts (Wu and Hu, 2020).

1.2 Statement of the Problem

Growth in the digital economy is disrupting all sorts of businesses, and for them to stay relevant in the market, they need to be more perceptive and agile (Sturgeon, 2021). In the digital economy, all kinds of businesses are witnessing several strategic, financial and operational implications due to technological innovations and digital transformations (Kraus *et al*., 2019; Kraus *et al*., 2021; Kitsios and Kamariotou, 2022; Kamariotou and Kitsios, 2023). Even the most significant global businesses have now entered the digital economy space, leaving aside the functioning of the core industrial sector (Li *et al*. 2020). Businesses are finding ways to innovate the products or services continuously (Sjödin *et al*., 2020). Wang *et al*. (2023) tasked future researchers to use their proposed IS user competency framework that identifies IS factors associated with IS user competency as a foundation to explore these categories of factors and the impact they have on IS user competency; hence this gap needs to be addressed using AIS adoption among family businesses in the Ghanaian context.

Accounting information systems (AIS) are important for the financial management and reporting of businesses. However, Hakeem and Kevin (2018), indicated that the

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competency of users in utilizing AIS can vary, which may impact the quality of financial information and decision making in organizations. Accounting information systems (AIS) have become increasingly complex and sophisticated tools for recording, analyzing, and communicating financial data in organizations. They further assert that, full benefits of these systems can only be realized if the users have the necessary knowledge, skills, and abilities to leverage the range of capabilities. However, many organizations find that AIS users struggle to utilize the systems to their full potential due to competency gaps. Furthermore, they also indicated, the problem is that many AIS users lack the required competencies to optimally use accounting systems. This leads to inefficiencies, reduced productivity, failure to derive insights from financial data, and increased risk of errors. The underlying reasons may include insufficient training, complexity of systems, lack of experience, or inadequate ongoing support. There is a need to comprehensively assess the current competencies of AIS users across roles, understand specific gaps, and identify means to enhance their skills and proficiency.

Family businesses are contemplating adopting and exploiting new sources of competitive advantage by embracing emerging technological innovations (PwC, 2019). Family businesses must embrace systems that enable it to improve efficiency, create value and sustainable innovation in the information era (Ardito *et al*., 2019). Parida *et al* (2019) also found that in today's competitive and dynamic business environment, companies need to constantly innovate and adapt their products, services, and business models to create value and maintain long-term success. However, many innovations fail to deliver lasting value and quickly become obsolete. The problem is that firms often pursue innovation without adequately considering sustainability - the ability to continuously renew value and relevance for customers over time.

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Further, turning to the method protocol used by prior studies, the extant literature indicates that undue emphasis has been given to the qualitative and mixed paradigm giving preference to relatively unstructured and traditional research methodology. This however tends to be skewed and one-sided in approach, biased, narrative and descriptive which lacks critical assessment, hence, yielding different outcomes that are indefensible. Hakeem and Teng (2018), and Wisna *et al* (2020) had indicated that there is a scanty research on User competency of Accounting Information system despite the emergence of information systems. Lahti *et al* (2018) also indicated that previous research has pointed to the influence of society and regulatory policy on companies' ability to address larger sustainability concerns and to change their ways of working, value creation has not been an ultimate priority. Finally, the findings from prior studies are mixed, fragmented and inconclusive (Haleem 2018; Wisna *et al.*, 2020). Limited research has examined the relationships between user competency of AIS, innovation outcomes, and value creation specifically in the context of family businesses. The problem is that there is lack of understanding of how the competency of accounting staff in family business in using AIS impacts their ability to leverage financial information for sustainable innovation and value creation. Addressing this knowledge gap would provide useful insights for family businesses on enhancing their financial management practices to support long-term viability. Therefore, this study is to assess the User Competency of Accounting Information System, Sustainable Innovation and Value Creation among Family Businesses in the Central Region of Ghana as the research setting.

1.3 Purpose of the study

Generally, the study examines the extent to which user competency of Accounting information system is influenced by the Experience, Educational level, knowledge,

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training and motivation, and how the AIS impact value creation. And, to further examine the interaction effect of sustainable innovation in the relationship between user competency of accounting information system and value creation.

1.4 Objectives of the study

The specific objectives of the study are to:

i. investigate the effect of the dimensions of user competency of accounting information system on value creation among family businesses.
ii. assess the interaction effect of sustainable innovation in the relationship between user competency of accounting information system and value creation.

1.5 Research hypotheses

The following research hypotheses underpinned this research:

H1o: there is ~~no statistically~~no statistically significant positive effect of the dimensions of user competency of accounting information system on value creation among family businesses

H1i: there is a statistically significant positive effect of the dimensions of user competency of accounting information system on value creation among family businesses

H2o: There is no statistically significant positive interaction effect of Sustainable Innovation in the relationship between User Competency of Accounting Information System and value creation.

H2i: There is a statistically significant positive interaction effect of Sustainable Innovation in the relationship between User Competency of Accounting Information System and value creation.

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1.6 Significance of the Study

This study generates a myriad of salient contributions in academia, practical aspects and policy implications. The significance of this research rests on the impact that the results may make in appreciating better the position of this sustainable Innovation, and value creation among family businesses. This study will contribute to improving the adoption of AIS by different sector of the economy specifically family businesses.

This study of this nature will contribute to knowledge by filling the knowledge gap identified by prior studies (Haleem 2018; Wisna *et al.,* 2020) that calls for user competency of AIS and how it impacts on value creation and sustainable innovation among family businesses. Policy-and decision-makers, as well as governmental influencers are encouraged to take particular actions to ameliorate and enhance the effectiveness of digitalization implementation among all businesses by allocating resources into the area of digitalization and information systems. Successful AIS depends on better resource allocation and support of central–local integration, thus raising a need for a commitment from policymakers to set up a more effective institutional infrastructure for digitalization. As such, the outcomes of the present work also encourage policymakers to invest in suggesting and supporting family businesses to gain competencies for digital transformation.

The study would also help provide stakeholders with information on how user competency has a significant positive influence on the adoption of AIS in family businesses. Findings from this study would uncover the extent to which network members are related to one another, improves the level of trust between family members and nonfamily counterparts (Coleman, 1988). Managers and Users of IAS in family businesses should take precautions in undertaking technological acquisitions as the strategic decision does not necessarily create shareholder value at the time of

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announcement. Managers may find it worthwhile to undertake technological acquisitions when they are confident that firm-specific conditions facilitate the effective realization of technological synergies. When undertaking technological acquisitions, managers of family businesses should pay special attention to allocating resources effectively in the post-acquisition stage to successfully realize technological synergies. In turn, reputation and trust tend to facilitate the family Business in efficiently accessing resources (exploitation) that are essential in carrying out novel strategic initiatives (exploration).

1.7 Delimitations

The study was delimited to user competencies of AIS, sustainable innovation and value creation among family businesses. This study focuses on only Central Region of Ghana, because the researcher believes he can get access to key information needed from the respondents in the family businesses. This study focused on the perception of key stakeholders such as the Financial officers, Accountants, Managers, and users of accounting information systems in the family owned businesses. The reason for this population was their connection or significance to the problem recognised.

1.8 Limitation of the study

Diversity of family businesses restricts the extent to which the results can be generalized (Arregle *et al*, 2017). The findings may have limited generalisation value as the results have been generated with data covering family businesses that has adopted Accounting Information systems. The sample size was limited to respondents of family businesses that has adopted Accounting Information systems and therefore may not be representative of the overall population of family businesses. Again, results from the research were limited to questionnaires. Since stakeholders were informed ahead of time before the observation was carried out, it may have influenced how they taught

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and could influence the results of the study. A further limitation is that participants in the questionnaire/survey may have had different views, perceptions and understandings about the Likert scales. It was not possible to ascertain the base level for each participant. This could, therefore, influence the responses, analysis and evaluation, which in turn, can make fuzzy generalisations (Bassey, 2001). However, the findings and the conclusions reached in this study have relevant value for other related studies.

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1.9 Organisation of the Study

The study was made up of five chapters. Chapter One provides the introduction of the study that focused on the background of the study, statement of the problem, the significance of the study, the purpose of the study, research questions, delimitations, limitations and definition of terms. Chapter Two presented a review of related literature on the concept of Accounting Information System, Sustainable Innovation, and value Creation among family businesses. The conceptual review and related empirical studies on the research questions posed were highlighted. Details of the research methods used in the investigation are described in Chapter Three. This included the research paradigm, research design, population, sample and sampling procedure, data collection instrument, data collection procedures, and data processing and analysis. The results of the data analysis were presented in the fourth chapter. It discussed the findings to answer the questions raised in Chapter One. Chapter Five, the final chapter, summarised the study and concluded. Based on the conclusions reached, recommendations were made to help resolve the problems identified.

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LITERATURE REVIEW

2.0 Introduction

Generally, this chapter reviews scholarly viewpoints on theories and related literature on issues of User competencies of Accounting Information System considered highly relevant in addressing sustainable innovation and value creation among family businesses in the domain of academic knowledge by prior studies. As an introduction to this chapter of the study, the researcher brings to bear the constituents of the main issues reviewed chronologically. The major themes of the literature review under this phase include the theoretical review, conceptual review, empirical review, summary of the literature review and finally climaxed with the conceptual framework of the study. The theoretical framework reviews theory upon which this research hinges. The conceptual review highlights the concepts relating to the key variables in the study, providing basis for the researcher to conceptualise the focus of this study. The empirical reviews also reviewed related works conducted by other scholars that relate to this study. The purpose of the empirical review is to compare the findings of this study with other related studies to either confirm or rebut conclusions drawn by early researchers.

2.1 Theoretical review

This section reviews the scholarly views on Technology Acceptance Model (TAM), and Resource-Based View (RBV) theory. Maruping, Bala, Ventakesh, and Brown (2016) maintained that to obtain a proper understanding of the factors which promote increased use of IT, it is necessary to have a comprehensive theoretical and practical knowledge of the frameworks and models by means of which the use of IT is investigated. This section also throws light on the appropriateness of the theory to this particular study of User Competency of Accounting Information System, Sustainable

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Innovation and Value Creation among Family Businesses. The subsequent section provides details of the issues under the theoretical framework.

2.1.1 Technology Acceptance Model (TAM)

This study adopts the technology adoption model (TAM) as the fundamental underpinning of delivering value and responding to how institutions adopt and accept the use of technologies in their daily lives. TAM has been used in a wide range of studies, including 3G adoption service (Chong et al., 2012; Opoku and Adu, 2016) mobile commerce (Yang, 2005; Alalwan *et al*., 2018) E-banking (Hassan *et al*., 2018) E-learning (Gamble, 2017; Tan and Hsu, 2018) cloud computing (Oliveira *et al*., 2014; Sharma *et al.*, 2016) etc. The technology adoption model (TAM) has been seen as a very powerful model that helps to understand individual technology adoption. This model has been in use to explain usage intentions in terms of social influence and cognitive instrumental processes in technology acceptance (Davis *et al*., 1989) and user intention of using information systems and subsequent usage behavior. The TAM model intends to explain users' behavioural intention to use any information technology. TAM has two main variables that are used to predict the acceptance of use is perceived usefulness and perceived ease of use that will affect the attitude towards using, behavioral intention to use and finally shows the real use of the system (actual system use) (Davis, 1989).

The TAM proposes two specific beliefs; perceived ease of use (PEOU) and perceived usefulness (PU) that determine one's behavioural intention to use a technology. Behavioural intention is a measure of the strength of one's intention to perform a specified behaviour. Below is a detailed explanation of the building blocks of the TAM;

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Figure 1 below shows the TAM.

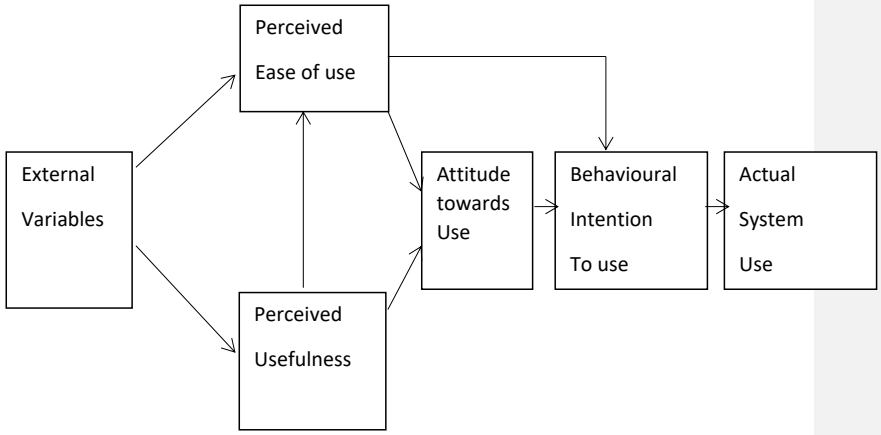

Figure 1: The Technology Acceptance Model; Source (Davis et al. 1989)

Perceived Usefulness is defined as a prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context (Davis *et al*, 1989). Further, the TAM assumes that perceived usefulness will be influenced by perceived ease of use, because other things being equal, the easier is a technology to use, the more useful it can be. Perceived ease of use refers to the degree to which the perspective user expects the target system to be free of effort (Davis *et al*, 1989). By assuming that other variables are constant, the easier is a technology to use, the higher is its possibility to be adopted by users.

A study in America conducted by Venkatesh (2022) found that in deciding to adopt a technology, women were mostly influenced by their perception of the technology's usefulness. Hofstede (1997) also found men to be more concerned with achievement than women. Minton and Schneider (1971) as cited by Venkatesh (2022), state that men may be more task-oriented than women. In this context, task-orientation may be defined as the accomplishment of a task that requires the use of technology.

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In contrast, the impact of perceived ease of use of adoption among women has been found to be stronger than men (He *et al*., 2018). Low self-efficacy among women substantiates this finding. However, it should be noted that low technology adoption among women are not only caused by the level of self-efficacy. Social and cultural factors may also factor into technology adoption (Sunny *et al*., 2019). The TAM also assumes that external variables such as characteristics of system design, training, documentation and characteristics of the decision-maker may also influence technology usage (Davis *et al*, 1989).

2.1.2 Resource-Based View (RBV) theory

Resource Based View (RBV) analyzes and interprets resources of the organizations to understand how organizations achieve sustainable competitive advantage (Madhani 2010; Lubris 2022). The RBV focuses on the concept of difficult-to-imitate attributes of the firm as sources of superior performance and competitive advantage (Barney, 1986; Hamel and Prahalad, 1996; Lubris 2022). Resources that cannot be easily transferred or purchased, that require an extended learning curve or a major change in the organization climate and culture, are more likely to be unique to the organization and, therefore, more difficult to imitate by competitors. According to Conner, performance variance between firms depends on its possession of unique inputs and capabilities (1991). According to RBV, an organization can be considered as a collection of physical resources, human resources and organizational resources (Barney, 1991; Salsabila *et al*, 2022). Resources of organizations that are valuable, rare, imperfectly imitable and imperfectly substitutable are main source of sustainable competitive advantage for sustained superior performance (Barney, 1991; Salsabila *et al*, 2022). A resource must fulfill 'VRIN' criteria in order to provide competitive advantage and sustainable performance. A 'VRIN' criterion is explained below.

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Valuable (V):

Resources are valuable if it provides strategic value to the firm. Resources provide value if it helps firms in exploiting market opportunities or helps in reducing market threats. There is no advantage of possessing a resource if it does not add or enhance value of the firm. valuable resource 'must enable a firm to do things and behave in ways that lead to high sales, low costs, high margins, or in others ways add financial value to the firm (Barney, 1986; Anning-Dorson, 2021)

Rare (R):

Resources must be difficult to find among the existing and potential competitors of the firm. Hence resources must be rare or unique to offer competitive advantages. Resources that are possessed by a several firms in the market place cannot provide competitive advantage, as they cannot design and execute a unique business strategy in comparison with other competitors.

Imperfect Imitability (I):

Imperfect imitability means making copy or imitate the resources will not be feasible. Bottlenecks for imperfect imitability can be many viz., difficulties in acquiring resource, ambiguous relationship between capability and competitive advantage or complexity of resources. Resources can be basis of sustained competitive advantage only if firms that do not hold these resources cannot acquire them.

Non-Substitutability (N):

Non-substitutability of resources implies that resources can't be substituted by another alternative resource. Here, competitor can't achieve same performance by replacing resources with other alternative resources.

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2.1.3 Application of Technology Acceptance Model (TAM) and Resource-Based View (RBV) Theory to the Study

An application of the TAM framework and the RBV will provide a solid theoretical framework for exploring the antecedents and impacts (post-adoption) of Accounting Information system among family businesses. Applying TAM to user competencies of accounting information systems can provide valuable insights for organizations to promote effective adoption and usage of technology among their accounting professionals. It helps in understanding the factors that influence technology acceptance and guides efforts to improve user competencies and system design for better outcomes. TAM suggests that providing adequate training and support can positively influence users' perceptions of usefulness and ease of use, leading to increased acceptance of the accounting information system. For users with lower competencies, comprehensive training and ongoing support are crucial to help them overcome potential barriers to adoption. When applying the Technology Acceptance Model to user competencies of an accounting information system, it is essential to consider the users' skills and expertise in both accounting and technology. By understanding their perspectives and addressing their specific needs, organizations can enhance the acceptance and successful implementation of the system. Providing appropriate training, support, and considering system compatibility can help bridge the gap between users with different competencies and promote the overall adoption of the accounting information system.

Resource Based View (RBV) theory emphasizes the significance of leveraging unique and valuable resources to achieve long-term success. RBV suggests that a firm's competitive advantage lies in its unique resources and capabilities. In the context of user competencies of an accounting information system, family businesses can utilize their employees' specific knowledge, skills, and expertise to gain a competitive edge.

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This means identifying and nurturing employees who possess a deep understanding of both accounting principles and technology. By investing in training and development programs, family businesses can enhance the competencies of their users to effectively leverage the accounting information system, leading to improved financial reporting, decision-making, and performance. For family businesses, sustainable innovation involves creating and maintaining a competitive advantage over time through continuous improvement and adaptation. RBV emphasizes that the innovation process should be built on the organization's existing resources and capabilities. In the context of accounting information systems, sustainable innovation can be achieved by encouraging employees to develop new skills and stay updated with emerging technologies and accounting practices. Family businesses should foster a culture of learning and experimentation, allowing users to explore new ways of utilizing the system to improve financial analysis, cost control, and strategic planning.

RBV emphasizes the importance of aligning resources and competencies with the firm's overall strategy. Family businesses should have a clear vision of how the AIS and user competencies contribute to their strategic objectives. This alignment ensures that the AIS is effectively utilized to achieve specific business goals, such as expansion, diversification, or succession planning.

2.2 Conceptual Review

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This part of the literature covers the meaning of user competency, accounting information system, sustainable innovation and value creation.

2.2.1 User Competency

Every people who interacts with the system can be stated as user (Wisna *et al*., 2020). Another view user as every people who use the system (O'Brien and Marakas., 2008;

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Wisna *et al*, 2020). These statements then confirmed by Wiegers, who define user as persons who interact and use the system (Wiegers, 2008; Gregory *et al*., 2021). Competence refers to basic characteristic which describes behavior pattern, personal characteristic which is unique, self-concept, value, knowledge or expertise which leads to superior performance at the workplace (Palan, 2003; Sesugh, 2022). Competency is a fundamental characteristic of a person or ability possessed by someone which is used to complete the task or achieve the expected performance (Dubbios and Rothwell, 2004; Ridwan *et al*., 2020). Competency is defined as a combination of knowledge, skills, behaviours and attitudes that enable a person to do a job (Beardwell and Claydon, 2007; Sedyastuti *et al*., 2020). The combination of knowledge and skills is very important because it will determine one's success in interacting with accounting information systems.

2.2.2 Accounting Information System

Concept of Information System (Idris, 2005; Alaoma *et al.,* 2020) defined the information system as a system which includes a set of elements and reactants components of the relevant reciprocity that work together to collect, operate, store, distribute necessary information for the decision- making process in the organization. Information system is a system consisting of a set of parts and procedure interacting with each other in order to collect, process, and store the appropriate data, and deliver the appropriate information in the appropriate time and place and accuracy suitable for the process of decision-making in the organization and in a form which contributes to achieve its objectives (Li *et al*., 2018; Rainer and Prince, 2022). (Miller, 2002; Heleem and Kevin 2018) acknowledged the concept of accounting information quality as a new model to achieve tremendous benefits that indicate the need of administration to communicate with shareholders to understand their needs and serve them fast and in

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the best possible way. Such characteristics aim to help administrators when developing accounting standards and assist accountants in the preparation of financial statements in assessing the accounting information that results from the application of alternative accounting methods and distinguish between what is a necessary clarification and what is not according to the users of accounting information.

Romney and steinbart (2012), Gel (2010), and Abdelraheem *et al.*, (2021) defined an accounting information system as a collection of parts and sub systems that are connected with each other and with the surrounding environment and operate as a single overlap relationship between each other and between the system that combines, where each part depends on the other in achieving the goals sought by the comprehensive system of accounting, in order to provide data and information to decision makers. It then means, accounting information systems collect, record, store and handles data to provide information to decision-makers via advanced technology or simple system or in between of the two (Abdelraheem *et al*, 2021). According to Abiahu,(2014) defined an Accounting Information System as a set of interrelated and unified subsystems that work together to collect, process, and store, transform, distribute information for planning and easily retrieval of the information for decisions making of the organisation. Also Accounting Information System (AIS) is a tool which was incorporated in the field of Information Technology Systems, which are designed to help link the management and control of the organisation and economic activities of entities. This involves the use of computers and computer capabilities in the carrying out of accounting functions in a business concern. (Abiahu, 2014). Okwudiri *et al*, (2017), throws more light on the meaning on the term accounting information system to buttress the understanding of both professionals and non-professionals in the field of accounting. In his work, the three words (accounting information system) would be

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elaborated separately in this form; accounting, information and system. These three different components together perform an onerous work as systems used in recording the firms' accounting and financial transactions. This system uses all the protocols, methodologies and capabilities in controlling accounting activities of an organisation. These techniques with the technology of the information technology industry are used to track transactions that provide internal reporting data, external reporting data, financial statements, and trend analysis of the previous years of the business activities and the performance of a firm. In order for accounting information to achieve its desired goals, it should have the following basic properties (Ahmad, 2006; Beg, 2018); it should be: Appropriate, Credible, Timely, Understandable, Important, and posses' financial data quality.

Accounting information system has two interconnected purpose, the first one is to provide meaningful information to its user and to support decision making. Other purpose is to facilitate monitoring or decision making (Boczko, 2007; Turner *et al*., 2022).

2.2.3 Quality of Accounting Information System

Grande *et al*, (2016) emphasised that quality of accounting information systems (AIS) can be categorised on three forms: information scope or forms, timeliness and aggregation scope. Information scope is classified as nonfinancial and financial information, external and internal information that is being used by the users of accounting information. Timeliness quality is related to the ability of AIS to urgently provide relay a particular information needed by providing systematic and timely reports to the users. Aggregation of information is maintained as means of gathering and classifying information within a given specific period. Nelson *et al* (2005) articulated several criteria for measuring the quality of AIS, they saw the diverse

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dimensions of flexibility, reliability, accessibility integration and timeliness of the system. Ramadhan (2018) in his work measured the quality of Accounting information system with security or protocols attached the system and ease of use and efficiency. He also measured the dimensions of the quality of management accounting information system using formalization of media richness, integration, accessibility and flexibility. Stair and Reynolds (2010) opined generally that features of the quality of AIS which are flexible, efficient, accessible and timely. Rahin and Napitupulu (2018) Specifically maintained that quality of accounting information system in the form of integration, reliability, flexible, efficient and transparent. The performance ability of effectiveness of the AIS is evaluated by its ability to provide or render essential service, such as customer and staff payrolls, billing activities and to meet up the financial or credit informational needs of its customers, staff and management of the firm. The performance of AIS from the system include some that could be regarded as discretionary and non-discretionary, when it is discretionary the AIS is manipulated by individuals but non-discretionary AIS activities are automated by the system. Activities of the firms such as sales analysis, account receivables and accounts payables and other activities like mandatory tax reports by the firm depending on the period. The effectiveness and efficiency of the AIS must be measured by the cost and contribution to the growth of the firm. (Saejdi and Prasad, 2014). The quality of AIS must be accurate, reliable in operation and information provided must trustworthy to the account's users within the time frame. The quality of accounting information ensures that the suitable internal control is installed to protect the integrity of the information and other resources installed stored in them. Also, AIS play its wonderful role in motivating the internal and external users of accounting information, the objectives of

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the management on the policies and programmes of the organization are maximized (Saejdi and Prasad, 2014).

2.2.4 Effectiveness of Accounting Information Systems

The most important factor for the effectiveness of an accounting information system is the purpose of its system (Romney and Steinbart, 2015). The purpose of accounting information systems is to facilitate data collection, data maintenance, data management, data control and information presentation procedures (Boczko, 2007; Alaoma *et al*., 2020). In other words, the effectiveness of accounting information system is measured based on integration, reliability, flexibility, and usability.

According to Leitch and Davis the success of a system is measured by the integration between sub-systems/components (Leitch and Davis, 1992; Hertati *et al*., 2020). In addition, the effectiveness of a system can be measured by its ability to meet user needs, the ability to achieve goals, the ability to meet user satisfaction, and the ability to meet quality standards (Ralph and Reynolds, 2016). This is known as the success model of information systems.

2.2.5 Effect of User Competence of Accounting Information Systems and value creation

An accounting information system can be implemented effectively if the user has the necessary and competent knowledge and skills (Hutahayan, 2020). In other words, the low competency of users in the form of knowledge and skills are the main factors that cause ineffective accounting information system which in turn give an impact on business performance (Hutahayan, 2020). Furthermore, the weakness in each area of competence related to accounting information systems will affect the ability of the accounting information system, which will give impact on business operations and ultimately affect the performance of its business (Latifah *et al*., 2021). This means that

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an accounting information system needs a competent worker with an adequate knowledge, skills and abilities in order to work properly (Latifah *et al*., 2021). According to Daoud and Triki (2013) the competency of accounting staff influences the success of accounting information system. Furthermore, Afiah and Indahwati prove that user competency influences the quality of accounting information system (Rikhardsson and Yigitbasioglu, 2018). User competency influences the successful application of accounting information system (Li *et al*., 2018)

2.2.6 Sustainable Innovation and Value Creation among Family Businesses

Sustainable innovation refers to the process of creating new products, services, technologies, or business models that not only generate economic value but also contribute positively to environmental, social, and ethical aspects of society. It involves integrating principles of sustainability into the design, development, and implementation of innovative solutions. The goal is to address pressing global challenges such as climate change, resource depletion, social inequality, and more, while fostering economic growth and long-term viability. Sustainable innovation plays a crucial role in achieving a more sustainable and equitable future, addressing pressing global challenges while driving economic growth and prosperity.

Value creation refers to the process of generating value for stakeholders through various activities, strategies, and innovations within an organization (Dembek *et al*., 2018). This value can take many forms, including financial gains, improved customer satisfaction, enhanced brand reputation, and positive impacts on society and the environment (Dembek *et al*., 2018). Effective value creation often involves aligning the interests of different stakeholders and finding innovative ways to meet their needs and expectations (Freudenreich *et al*.,2020). Ultimately, value creation is about finding innovative and sustainable ways to meet the needs and aspirations of stakeholders while

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contributing positively to the organization, society, and the environment. Mizik and Jacobson (2003) found that value creation quality, measured by customer satisfaction scores, had a significant impact on assets in a sample of public firms. Similarly, Tuli and Bharadwaj (2009) showed that superior customer satisfaction ratings, as a proxy for value creation, were positively associated with higher stock returns. Other studies reveal a link between value-creating strategies and financial performance. Value innovation- developing unprecedented products and services-enhances profitability and firm value, as demonstrated in studies by Kim and Mauborgne (2004) and Kim *et al* (2004). Some other studies demonstrate that intangible strategic resources related to value creation do contribute to competitive advantage. For instance, Teece *et al* (1997) showed that knowledge assets, dynamic capabilities, and complementary resources underpin value creation and translate into long-term competitive advantage. Priem (2007) showed that emphasis on value creation was associated with greater innovation revenue in Scandinavian firms.

2.3 Empirical Framework on User Competency of Accounting Information System on Value Creation

2.3.1 Accounting Knowledge and Value Creation

Wisna *et al*., (2020) in their study conducted to investigate the user competency and its effect of accounting information system implementation at the regional government, in the city of Banjar Patroman, West Java province, Indonesia, the results of this study indicate that apparatus competencies (skills and knowledge) influence the accounting information system.

They concluded that improving skills and knowledge will contribute positively to the quality of accounting information systems. Supporting evidence in other jurisdictions suggests that user competency significantly affects the effectiveness of Accounting Information systems (Darma 2018, Yanti and Pratiwi 2022).

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Lingga (2020) also conducted a study to analyze the importance of user competency to the effectiveness of Accounting Information system in Banking sector in Indonesia. The study used a total of 176 questionnaires collected from manager and staff related to accounting. The results showed that inadequate knowledge and skills possessed by the employees will give an impact to the effectiveness of the accounting information system. Thus, it is necessary for all banks to increase knowledge and skills of their employees as users of Accounting Information System. Studies focused on accountants find broad accounting knowledge develops capacity to leverage AIS expertise. Alnajjar (2017) also conducted a study with the purpose of investigating the impact of accounting managers' knowledge and top management support on the accounting information systems and moreover, to analyze the impact of accounting information systems on the performance management and organizational performance. This study analyses the data collected from 74 SMEs related to trading, services and manufacturing sectors. Based upon the results, this study concludes that accounting managers' knowledge and top management support significantly impact on the accounting information systems in an organization and consequently, accounting information systems also significantly impact the performance management and organizational performance of that organization. By using accounting information systems, decision makers obtain useful information, and use it in decision making and strategy building for achieving the organizational goals and objectives, which should increase the company performance.

Focusing on Australia, Goodwin *et al.* (2021) examined how auditors' accounting information system (AIS) skills and accounting conceptual knowledge affect their performance on accounting tasks. The authors surveyed 156 experienced auditors from large accounting firms in Australia. They found that auditors performed accounting

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tasks with greater effectiveness when AIS skills were paired with accounting conceptual knowledge. Granlund and Malmi (2002) showed management accountants in Finland were better able to contribute strategic value when they combined AIS skills with foundational knowledge of cost and management accounting practices. Additionally, Li *et al*. (2018) found Chinese firms' return on assets was higher when AIS teams had broad accounting knowledge spanning reporting, budgeting, compliance, and planning processes. Aligning systems to core practices required integration of knowledge domains. Based on the above discussed empirical evidence, this study hypothesizes that:

H1a: There will be a positive and significant relationship between accounting knowledge and value creation

2.3.2 Training and Value Creation

Achieving competency in using AIS can be challenging without a proper training. Abdulsalam *et al*. (2020) found Malaysian accountants' AIS expertise only increased their adaptive performance when paired with sufficient training. This highlights the need to actively develop specialized skills beyond formal education. Focusing on US accountants, Mauldin and Ruchala (1999) showed both general IT training and accounting-specific AIS training boosted productivity gains from AIS expertise. Examining Chinese firms, Ma *et al*. (2014) found positive links between employees' AIS skills and firm productivity were stronger when firms provided on-the-job end-user training. They argue training helps employees translate AIS knowledge into business value. Adeeb *et al*. (2020) showed Malaysian firms' financial returns from AIS adoption were higher when staff training intensity was greater. Nurhayati and Ladewi (2015) also studied the impact of training on accounting information systems and value creation. They found that personal information system capabilities, top management

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support, and training and education program performance had a significant impact on the quality of accounting information. Agustin (2020) also found that education and training programs, system users' involvement, and human resources competence significantly impacted the quality of accounting information systems. Lastly, Meiryani (2020) found that accounting training had a significant influence on the application of accounting information in small and medium micro enterprises. Based on the above evidence, it is hypothesized that:

H1b: Training will positively and significantly impact value creation

2.3.3 Educational level and Value Creation

Several studies reveal positive links between AIS skills, user education, and value creation. Karim *et al*. (2009) found a significant interaction between Chinese bank employees' education level and AIS expertise on their competitive advantage and work effectiveness. The combination of higher education and AIS skills predicted superior individual performance. Focusing on accountants, Rahman (2018) showed Indonesian professionals' education level strengthened the relationship between AIS competence and career advancement. Ratnawati (2023) also carried a study to examine the implementation of the use of accounting information systems through education levels, length of business and accounting training. Unit of analysis of SME owners of rattan industrial centers in Malang City. Data analysis was performed with multiple linear regression. The results of this study indicate that partially educational level has a positive and significant effect on the use of accounting information systems, the higher the level of education attained, the greater the use of accounting information systems. Accounting training has a positive and significant effect on the use of accounting information systems, the more often SME owners attend accounting training while practicing it, the ability of business owners will be honed. However, effects depended

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on field of study; accounting-specific degrees amplified impacts more than general education. Examining Chinese firms, Ma *et al*. (2014) found employees' IT skills had a stronger positive association with organizational productivity and profitability when coupled with higher education levels. They argue cognitive abilities developed through schooling help users translate AIS capabilities into business value. Existing research affirms user education complements AIS competency in enhancing individual and firm performance. Al-Eqab (2020) showed positive links between AIS quality and Jordanian firm performance were stronger when managers had higher education. Critical thinking and analytical development from advanced schooling helps managers leverage data from AIS. Boosting education levels may thus optimize technology returns and impact value creation. Based on the above evidence, it is hypothesized that:

H1c: Educational level will positively and significantly impact value creation

2.3.4 Experience and Value Creation

Prior Studies focused on accountants find experience strengthens the benefits of AIS competency. Abdulsalam *et al*. (2020) showed experience complemented technical AIS skills to increase adaptive performance for Malaysian auditors, enabling them to better handle complex tasks. Focusing on Australia, Goodwin *et al*. (2021) found long-tenured accountants had greater capacity to leverage AIS expertise for decision making compared to novices. Examining Chinese firms, Ma *et al*. (2014) found employees' AIS skills had a stronger positive association with productivity and profitability when employees had relevant industry experience. They argue experience helps contextualize AIS technical knowledge. For Taiwanese firms, Hung *et al*. (2012) showed firms realize greater financial benefit from AIS when users had experience in analysis and information utilization roles. Haleem and Kevin (2018) also conducted a study to assess the Impact of User Competency on Accounting Information System Success: Banking

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Sectors in Sri Lanka. This study used survey data from 318 respondents from eighty-two banks through a structured questionnaire. Through structured equation modelling this research assessed the relationship between user competency and AIS success. Three factors from user skills named Technical, Human, and Conceptual skills and two factors from user knowledge: User knowledge and experience have contributed to AIS success. In addition, the results suggested that both user Experience and technical skills contribute more to AIS success rather than absolute values of user skills such as human skills and conceptual skills, and user knowledge. Murphy *et al*. (2015) also did a study on Value Creation in Cross-Sector Collaborations: The Roles of Experience and Alignment. This study uses a survey (N = 362) to analyze types of benefits sought by partners in cross-sector collaborations (between businesses and NPOs) in Spain and to test and build upon theories that indicate prior collaboration experience and partner alignment will positively affect value creation through the collaboration. Using exploratory factor analysis to operationalize a broad range of potential benefits into more specific concepts, the results of this study identify distinct factors that characterize the types of benefits sought by non-profit organizations and businesses engaged in cross-sector collaborations. Findings show that prior experience and alignment positively affect each factor for value creation. Prior experience is also found to influence the type of benefits sought from cross-sector collaborations and to positively affect alignment in terms of mission and strategy. Unexpectedly, the study also finds that prior experience moderates the effect of alignment on value creation. Based on the above evidence, it is hypothesized that:

H1d: Experience will positively and significantly impact value creation

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2.3.5 Motivation and Value Creation

Research focused on accountants confirms motivation's complementary effect. Abdolmohammadi *et al*. (2006) found a significant interaction between Iranian auditors' intrinsic motivation and AIS expertise on performance. Auditors highest on both dimensions achieved greatest task efficiency and productivity. Focusing on Malaysia, Kamil *et al*. (2010) showed accountants' learning goal orientation strengthened positive links between AIS skills and adaptive performance as it encouraged skill application. Examining Chinese firms, Ma *et al*. (2014) showed positive effects of employees' AIS skills on firm productivity and profitability were stronger when paired with performance-based incentives. Incentives motivated skill application. For Malaysian firms, Adeeb *et al.* (2020) found high-performing firms coupled AIS adoption with motivational practices to realize benefits. Palma 2018 focuses on customer participation in value co-creation and identifies six primary triggers of customer motivation, including affiliation, expertise, and recognition. Waseem (2020) explores the drivers of employee motivation for value co-creation and identifies factors such as rewards and recognition, interpersonal engagement, and organisational vision. Quyen (2020) examines the effects of customer values on intrinsic motivation for co-creation and finds that personal values, particularly self-direction, have a positive impact on customer motivation. Osterloh (2002) discusses the dynamics of motivation in new organizational forms and highlights the importance of balancing intrinsic and extrinsic motivation for value creation. Overall, these papers emphasize the role of motivation in facilitating value co-creation by both customers and employees. Based on the above evidence, it is hypothesized that:

H1e: Motivation will positively and significantly impact value creation

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2.3.6 The interaction effect of Sustainable Innovation in the relationship between User Competency of Accounting Information System and value creation

AIS user competency reflects employees' ability to operate AIS technologies proficiently and exploit AIS capabilities for decision making and organizational effectiveness (Romney & Steinbart, 2018). By interacting with sustainable innovation initiatives, AIS competency can strengthen value creation. A prior study demonstrates a direct link between AIS competency and value creation outcomes. For instance, Kieran (2018) surveyed accountants and found that AIS expertise positively correlated with financial performance, measured by return on assets. Likewise, Basoglu *et al*. (2007) showed that ERP competency enhanced operational efficiency and flexibility, which translated into greater value. Wu *et al*. (2007) found that AIS capability was associated with higher supply chain integration and performance among Taiwanese manufacturers.

Using interviews and observation, Barlon and Koh (2021) found that cross-functional ERP teams better understood sustainability-related information requirements. Quantitatively, Longoni and Cagliano (2018) showed that Green IT capability improved environmental performance by facilitating transparency and collective sensemaking. Analyzing manufacturing firms, Gaiardelli *et al.* (2018) demonstrated that greater IoT integration and analytics competency enabled smart, connected production systems that optimized energy and resource effieciency. Similarly, competence with management control systems enhanced the use of sustainability (Feenstra *et al*., 2017). AIS modifications are necessitated by sustainable innovations. Bhattacharya (2016) showed that new sustainability accounting standards required software and capability upgrades. Moreover, competence adaptation enabled integration of sustainability metrics into reporting and performance management

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routines (Gond *et al*., 2012). Yousaf *et al*. (2022) examined the direct effect of innovation capability on value creation. The mediating role of frugal innovation and the moderating role of knowledge sharing are also explored between innovation capability and value creation link. The exploratory study used quantitative and cross-sectional data collected through questionnaires. Structural equation modelling (SEM) was used to examine the hypothesis. Findings showed a significant positive impact of innovation capability on value creation. Results proved that frugal innovation mediates the relations between innovation capability and value creation. Esawe *et al*., (2023) investigate the impact of environmentally sustainable innovation practices on consumer resistance to innovation in eco-hotel enterprises and the moderating influence of value co-creation. Partial least squares structural equation modelling was used to test the study's hypotheses on a sample of 382 eco-hotel enterprise consumers surveyed online. Results reveal that adopting environmentally sustainable innovation practices and consumers' participation in value co-creation can negatively influence consumer resistance to innovation. In addition, value co-creation partially moderates the influence of environmentally sustainable innovation practices on consumer resistance to innovation, implying that other variables can influence this relationship. Moreover, Hermundsdottir and Aspelund (2021) examined the relationship between sustainability innovations and competitiveness and to identify the contextual factors that mediate and moderate this relationship. The study concludes that a vast majority of studies found positive relationships. Hence, the findings support the view that sustainability innovations can create win-win situations for a firm. However, the relationship is complex, and this study contributes with an overview of national-, market-, industry-, and firm-level factors that have a moderating or mediating effect on the relationship. Therefore, this study hypothesizes that:

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H2: There is an interaction effect of sustainable innovation in the relationship between user competency of accounting information system and value creation.

2.4 Conceptual Framework

Consistent with the theory, concepts and empirical reviews above, the figure below is developed as the conceptual framework of this particular study.

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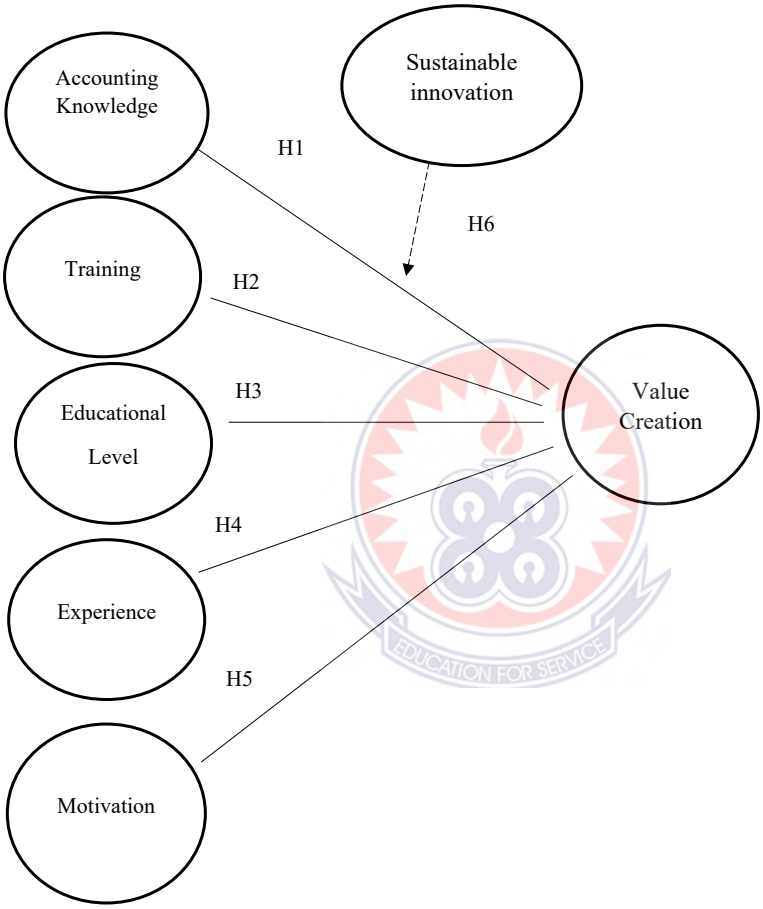
Figure 2: Conceptual Model on User Competency of Accounting Information System, Sustainable Innovation and Value Creation among Family Businesses

User competency of AIS



Source: Author's Construct (2023)

This conceptual model elucidates potential relationships between AIS competency, sustainable innovation and value creation drawing on the Resource Based Theory and Technology Acceptance Model and relevant literature such as Darma (2018), and Yanti and Pratiwi (2022). The proposed linkages provide insights on how family businesses

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can effectively leverage AIS to support continuity and innovation leading to lasting success across generations.

2.5 Summary of the Chapter

In summary, this chapter reviewed scholarly viewpoints and prior literature on the study variables and the relationships among them. Specifically, an in-depth discussion was done as to why Resource Based Theory and Technology Acceptance Model was pivotal in establishing the relationships between the study constructs. Also, prior studies on user competency of AIS, sustainable innovation and value creation as advanced in the domain of academic knowledge were presented. The major themes under this chapter focused on presenting theoretical review, conceptual review, empirical review, and finally, a conceptual framework provided based on the proposed hypotheses.

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CHAPTER THREE

RESEARCH METHODOLOGY

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3.0 Introduction

The purpose of this study is to examine the User Competency of Accounting Information System, Sustainable Innovation and Value Creation among Family Businesses. Therefore, this chapter discusses how the study was conducted. It defines the choice of the study approach and the design that was used in undertaking the study. It covers issues such as research approach, research design, population, sample and sampling procedure, data collection procedure, instrumentation and data analysis. Finally, the chapter describes the ethical consideration issues of the study for addressing anonymity, confidentiality and other ethical issues in any systematic research inquiry.

3.1 Research Approach

This study adopted a quantitative research approach. This approach was employed because it is the most logical method to use when examining interrelationships among variables, where objective theories are tested (Quick and Hall, 2015). These variables can be measured typically by using instruments of predetermined, close-ended questions so that numbered data can be analyzed using statistical procedures (Creswell and Zhang, 2009). Since this study is about the relationship between variables, it is therefore important to adopt this approach. This approach will further help to code the data from participants for analysis.

3.2 Research Design

Research design is the specification of the procedure to be developed in other to guide the researcher in the collection, analysis and interpretation of data. Also, it is a logical model of proof employed to facilitate the drawing of inference with regards to a causal relationship between variables under study by the researcher. Rahi (2017), defines a

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research design as the blueprint or detailed plan of how a research study is to be conducted, it guides the logical arrangements for the collection and analysis of data so that conclusions may be drawn. According to Miller and Brewer (2003), and Guenther and Falk (2019), the design of a research is employed to structure the study and to indicate how all of the major parts of the research corroborate to address the research questions.

There are numerous categories of research design that can be adopted depending on the nature of the research. For this research, a correlational research design was adopted. This is a study that examined the relationship and the extent to which user competency of AIS interact with Sustainable Innovation to create value among Family Businesses in the Central region of Ghana. The correlational design was employed for the study because it is concerned with establishing relationships between two or more variables in the same population or between the same variables in two populations (Leedy & Ormrod 2010). In the field of Accounting and, indeed, in other disciplines (Fitzgerald *et al*., 2004), the study of the relationships between various variables is an important part of good research. Understanding the relationships that exist between human phenomena is a constant incentive for scientific research in all disciplines of the social sciences, and this impulse surpasses even the most polarized paradigmatic differences between different research methods (Fitzgerald *et al*., 2004). Also, a correlational design measures two or more characteristics of the same person and then calculates the correlation between the characteristics.

Additionally, the focus of the design is not to look out for cause-and-effect relationships only, but also to describe the existing variables in a given situation and, sometimes, the relationship that exists among those variables (Lebow *et al*., 2012). Furthermore, this design was employed to address the research problem as it focused on finding facts to

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describe the social phenomenon and also assess the cause-effect relationship of the research variables (Kerlinger & Pedhazur, 1973; Saunders *et al*., 2019). Finally, the design was adopted because it is cost-effective, easy and quick, and time and money-saving (Kusi-Mensah & Opoku, 2007). Thus, a comprehensive questionnaire was designed to collect data from respondents.

3.3 Population

According to Kobina-Enos *et al*., (2020), a population is a group of elements or cases, whether individuals, objects or events, that conforms to specific criteria and to which we intend to generalize the result of research. The population of a research is said to be all the members who meet the particular criteria specified for a research. By these definitions, it can be said that a population is the set of people or objects a researcher would want to generalize his or her findings to. For this study, the population consists of Accounting staff working in family businesses in the Central Region of Ghana. The selection of these staff was based on the fact that they are directly involved in all the accounting activities the institution embarks on and hence their experience level can be said to be high when it comes to Accounting information systems.

To ensure inclusivity and diversity, both male and female workers in the various family businesses in the region were targeted. This is to ensure a homogeneous representation of respondents. As per the Integrated Business Establishment Survey, 2018, it was found that the Ghana Statistical Service has not done enough to collate the number of employees in the family businesses of Ghana. Moreover, the Ghana Statistical Service has no available data showing the number of accounting staff in the family businesses in the Central Region and hence the population for this study was arrived at according to the information received from various respondents in the accounting department of family businesses.

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3.4 Sampling Procedures and Sample

Sampling is the process of choosing from the total universe a sizeable unit out of the lot that bears the same number of traits as the rest chosen (Saunders *et al*., 2019). It is believed that the units have the same unit trait as such, the outcome of the entire population. This study adopted a stratified random sampling technique. Stratified random sampling is a type of probability sampling that allows researchers to improve precision (reduce error) relative to simple random sampling (Sharma, 2017). With this technique, the population is divided into non-overlapping groups, or strata, along a relevant dimension, depending on the target population of the researcher. The researcher then collects a random sample of population members from within each stratum. This technique was selected because it gives individuals within the population an equal chance of being selected (Saunders *et al.,* 2019) and also aids in accurate results and valid analysis.

The total sample size required for the study was determined following the Krejcie and Morgan (1970) formula to determine the sample size for this particular study. This formula is represented as: $s = X^2 NP (1-P)/d^2 (N-1) + X^2P (1-P)$. Where: s= required sample size; X^2 = the table value or chi-square for 1 degree of freedom at the desired confidence level (3.841= 1.96*1.96); N = the population size; P = the population proportion (assumed to be 0.50since this would provide the maximum sample size); d^2= the degree of accuracy expressed as a proportion (0.50). Therefore, basing on the accounting staff population of 110; the sample size of the study was determined as; $86 = 3.841^2 *110 *0.50 (1-0.50)/ 0.50^2 (110-1) + 3.841^2 *0.50 (1-0.50)$. Adopting Krejcie and Morgan's (1970) formula, a sample size of Eighty-six (86) Accounting staff were chosen from the population of 110 for this study. The sample size (86) determined

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above was allocated to only small, medium and large Family businesses (strata). The table below contains the target population as well as the sample size that was chosen.

Table 1: Target Population and Sample Size

Family Businesses	Population	Sample Size
Small	10	8
Medium	35	24
Large	65	54
Total	**110**	**86**

Source: Field Data (2023)

In all, a total number of Eighty-six (86) respondents were chosen for this study. The justification for this sample size is for the researcher to be able to get more reliable and accurate data to achieve the purpose of the study (Krejcie & Morgan, 1970).

3.5 Questionnaire Instrument

One method of data collection is the use of a questionnaire. This is to ask individuals a series of questions to obtain statistically useful information about a particular topic at a given time. The questionnaire data collection method is the most commonly adopted. It is mostly observed as an effective tool for data collection, especially when studying the perception and opinion of individuals in the field of study. The questionnaire that is designed effectively is indispensable to getting a good and reliable result in every social research. Depending on the research objective and the research problem, a questionnaire refers to the support that includes communication between the person collecting the information known as a researcher and the person answering the known question of the respondent (Saunders *et al*., 2019).

The questionnaire for this study was administered by the researcher to respondents who have knowledge of the subject area within the targeted population. A sixty-one (61)

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item questionnaire was designed and administered to the respondents to solicit data from the respondents. The questionnaire was structured into four (4) sections; Section A examined the respondents' personal background information concerning age, gender, marital status, academic qualification and working experience of Accounting staff of a family businesses (consist of five items), Section B focused on forty-eight (48) items that look at specifically eleven (11) items for accounting knowledge as a user competency, eight (8) items for training as a user competency, nine (9) items for experience as a user competency, ten (10) items for education as a user competency and seven (7) items for organizational culture. Subsequently, section C looked at ten (10) items for value creation and finally, Section D was on the items for sustainable innovation (consisting of eight items).

3.6 Measurement Instrument

3.6.1 Accounting Knowledge

The Accounting Knowledge as a variable of user competency of Accounting Information on value creation was assessed with a eleven-item scale developed by Knoll *et al* (2012). The scale measures three dimensions of the accounting knowledge, namely; basic accounting knowledge (five items), intermediate accounting knowledge (three items), and advance accounting knowledge (three items). Sample items include "I have a strong understanding of basic accounting principles and concepts" (basic accounting knowledge), "I am able to interpret and analyze key accounting reports like balance sheets, income statements etc." (intermediate accounting knowledge), "I am able to ensure accounting transactions comply with internal control policies." (advance accounting knowledge).

This scale has been widely used in some prominent research studies due to its reliability and internal accuracy (Alnajjar 2017; Darma 2018; Lingga 2020; Yanti and Pratiwi

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2022). The scale was deemed relevant for the research hypotheses and hence, the researcher adapted and modified it to meet the specific context of this research study. A 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree was used to obtain responses. The Likert-scale method was used because of its accuracy and reliability (Ling *et al.,* 2010).

3.6.2 Training

The Training as a variable of user competency of Accounting Information on value creation was assessed with an eight-item scale developed by Tello *et al* (2006). Sample items include "The initial training provided me the skills needed to use the key functions of the system, "Ongoing refresher training is available when major updates are made to the system", "I have access to training resources or manuals when I need to troubleshoot issues", "Hands-on training is provided to learn new reports, transactions, or processes", and "The training teaches me accounting concepts in addition to system skills".

This scale has been widely used in some prominent research studies due to its reliability and internal accuracy (Meiryani 2020; Abdulsalam *et al*. 2020; Yanti and Pratiwi 2022). The scale was deemed relevant for the research hypotheses and hence, the researcher adapted and modified it to meet the specific context of this research study. A 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree was used to obtain responses. The Likert-scale method was used because of its accuracy and reliability (Ling *et al.,* 2010).

3.6.3 Experience

The Experience as a variable of user competency of Accounting Information on value creation was assessed with an eleven-item scale developed by Laugwitz (2008). Sample items include "My accounting experience enables me to effectively use the system's

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reports and data", "My experience enables me to recognize irregular or inaccurate transactions", "I draw upon previous accounting experience when questions/issues arise", "My experience allows me to understand accounting data and transactions in the system" and "I have experience with similar accounting systems and can adapt quickly".

This scale has been widely used in some prominent research studies due to its reliability and internal accuracy (Hung *et al*., 2012; Ma *et al*., 2014; Abdulsalam *et al*., 2020; Yanti and Pratiwi 2022). The scale was deemed relevant for the research hypotheses and hence, the researcher adapted and modified it to meet the specific context of this research study. A 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree was used to obtain responses. The Likert-scale method was used because of its accuracy and reliability (Ling *et al.,* 2010).

3.6.4 Educational level

The Educational level as a variable of user competency of Accounting Information on value creation was assessed with a ten-item scale developed by Knoll *et al* (2012). Sample items include "I have a relevant educational background for my accounting system role", "I have a degree in accounting, finance, or a related field", "My education provided a solid foundation in accounting concepts and standards", "My education enables me to effectively analyze and interpret accounting data", and "I have received specific education on using accounting software/systems".

This scale has been widely used in some prominent research studies due to its reliability and internal accuracy (Karim *et al*., 2009; Rahman 2018; Al-Eqab 2020). The scale was deemed relevant for the research hypotheses and hence, the researcher adapted and modified it to meet the specific context of this research study. A 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly

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Agree was used to obtain responses. The Likert-scale method was used because of its accuracy and reliability (Ling *et al.,* 2010).

3.6.5 Motivation

The motivation as a variable of user competency of Accounting Information on value creation was assessed with a ten-item scale developed by Lynn (1969). Sample items include "I am motivated to become highly skilled at using the accounting system", "I take initiative to improve my skills and learn new capabilities of the system", "I see mastery of this system as important for my career advancement", "I am committed to keeping my accounting system skills sharp" and "I am motivated to stay up-to-date on enhancements made to the accounting system".

This scale has been widely used in some prominent research studies due to its reliability and internal accuracy (Abdolmohammadi *et al*., 2006; Shropshire *et al*., 2015; Darma 2018). The scale was deemed relevant for the research hypotheses and hence, the researcher adapted and modified it to meet the specific context of this research study. A 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree was used to obtain responses. The Likert-scale method was used because of its accuracy and reliability (Ling *et al.,* 2010).

3.6.6 Value Creation

Value creation as a dependent variable was assessed with a ten-item scale developed by Price (1997). Sample items include "My company design products for long lifespans and durability", "My company place on enabling repair, reuse, refurbishment, and remanufacturing of products after initial sale", "My company attempt to maximize utilization of products by multiple users (e.g. sharing platforms, product-as-a-service)", 'My company focus on using fewer raw materials and resources per product produced

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than industry averages" and "My company calculate and minimize environmental impacts across the full product lifecycle"

This scale has been widely used in some prominent research studies due to its reliability and internal accuracy (Mizik and Jacobson 2003; Kim *et al.,* 2004; Tuli and Bharadwaj 2009). The scale was deemed relevant for the research hypotheses and hence, the researcher adapted and modified it to meet the specific context of this research study. A 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree was used to obtain responses. The Likert-scale method was used because of its accuracy and reliability (Ling *et al.,* 2010).

3.6.7 Sustainable Innovation

The Sustainable Innovation as a mediator was assessed with a ten-item scale developed by Price (1997). Sample items include "Our business actively seeks and implements sustainable innovation practices", "Sustainable innovation has played a significant role in our business operations", "We prioritize sustainability in our product/service development and delivery", "Sustainable innovation has positively impacted our business's environmental and social performance", and "Sustainable innovation positively influences the value creation in our business".

This scale has been widely used in some prominent research studies due to its reliability and internal accuracy (Gond *et al*., 2012; Bhattacharya 2016; Feenstra *et al*., 2017; Darma 2018). The scale was deemed relevant for the research hypotheses and hence, the researcher adapted and modified it to meet the specific context of this research study. A 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree was used to obtain responses. The Likert-scale method was used because of its accuracy and reliability (Ling *et al.,* 2010).

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3.7 Data Collection Procedure

The researcher prepared and personally circulated a total of eighty-six (86) questionnaires to the small, medium and large family businesses due to financial and time constraints. The eighty-six (86) questionnaires were distributed to the selected family businesses to make room for missing and incomplete questionnaires submitted by the respondents. Permission was taken from the institution specifically from the Accounting department of the various family businesses and respondents were met by the researcher personally to administer the questionnaires to get first-hand (primary) data. Respondents were given a period of one week to complete the questionnaires due to time constraints.

3.8 Method of Data Analysis and Presentation

The data obtained from the respondents were analyzed using statistical software program; Statistical Package for the Social Sciences (SPSS). Descriptive statistics (frequency count, percentages, mean and standard deviation) were used to evaluate the respondents' background information. Subsequently, the data was further analysed using the SPSS to test the relationships between the constructs under study. Thus, The Pearson Product-moment was employed to assess the relationship that exist between the constructs understudy the relationship between the variables under study has been established and there is the need to know the impact of the dimension of user competence in accounting (training in accounting, experience in accounting, education in accounting, and motivation) on value creation. The study used the coefficient of determination to evaluate the model fit. Similarly, this study resorted to the mediation analysis as prescribed by Baron and Kenny (1986). According to them, in conducting mediation analysis by adopting the cause and effect method, numerous conditions must be met. These conditions are dependent on three main necessary tests that researchers

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need to carry out. The first test is to regress the independent variable on the moderating variable (T1); and lastly regress both the independent and moderating variables on the dependent variable (T2). However, the full moderation effect isn't realised when the independent variable insignificantly predicts the dependent variable but the mediating variable significantly does in the third test (T2) Consequently, the current study employed this method of testing moderation effect to test the hypothesised mediation relationships.

Likewise, the researcher chose the regression approach in the moderation analysis because it provides a clear and structured approach to limiting measurement errors and some novel ways of exploring moderation effects (Hayes, 2009). Again, regression analysis allowed the researcher to concomitantly assess the multiple hypothesised relationships rather than individually assessing them, hence, greater accuracy in estimating the path coefficients is assured.

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3.9 Ethical Consideration

In conducting research, the research participants need to be protected and researchers have to be aware of this and how to develop trust with them whilst promoting the integrity of the research (Creswell & Zhang, 2009). In addressing the ethical concerns in this study, informed consent was elicited from the respondents prior to the administration of the instruments (Borrego *et al*., 2009). After this condition was met, the researcher obtained clearance from the human resource manager of the MMDAs and approval to conduct the survey with the approval of all participants before they completed the questionnaires. The respondents were informed of their rights to willingly accept or decline to participate and to withdraw participation at any time without penalty. Anonymity and privacy were assured and adhered to. No form of

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identification was required of the respondents and their responses were not disclosed to any third party. Generally, anonymity does not constitute a serious constraint on research, as most researchers are interested in group data rather than individual results. The thought of anonymity can be easily overcome by ignoring the names of the participants or classifying the respondents by code instead of by name (Creswell & Zhang, 2009). Finally, all other sources of relevant literature and documents used were fully acknowledged to avoid plagiarism.

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CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This section presents the results and discussions of the data gathered from the participants sampled for the study. The section also contains the descriptive (arithmetic mean and standard deviation, skewness, and kurtosis) and inferential statistics of the variables; correlation and structural equation modelling results. A total of ninety-six (96) questionnaires were administered to the employees of Family Businesses in the Central Region. Upon a critical assessment of the retrieved questionnaire, ten (10) had to be rejected due to shortfalls of information needed leaving the researcher with total questionnaires of eighty-six (86) for the study as a result of missing and incomplete questionnaires. A sample like this is good for data analysis since more than 80% of the administered questionnaires were retrieved (Opoku & Adu, 2016). The preceding sub-sections of the study concentrates on the interpretation and discussion of results based on statistical evidence and literature based on the study objectives.

4.1 Demographic Characteristics of Study Participants

This section of the study presents the preliminary analysis of the profile of the respondents sampled for the survey. The biographic data reflects the profile of the respondents in terms of their age, gender, marital status, academic qualification, and working experience.

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Table 2: Demographic Characteristics of Respondents

	Frequency	Percentage
Gender		
Male	47	54.7
Female	39	45.3
Age		
Below 30 years	36	41.9
30-39 years	22	25.6
40-49 years	14	16.3
50-59 years	8	9.3
Above 60 years	6	7.0
Marital Status		
Single	49	57.0
Married	36	41.9
Divorced	1	1.2
Academic Qualification		
Diploma	10	11.6
HND	10	11.6
Bachelor's degree	37	43.0
Master's Degree	29	33.7
Working Experience		
1-5 years	45	52.3
6-10 years	14	16.3
11-15 years	13	15.1
16-20 years	9	10.5
More than 20 years	5	5.8

Source: Field Data (2023)

From Table 2, it can be seen that out of the total valid questionnaires used for the analysis, 47 of the total respondents were males representing 54.7% whereas 39

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representing 45.3% were female, which is an indication that more males participated in the study than females. With regards to the age of the respondents, the most frequent age range was below 30 years with a frequency of 36 representing 41.9% of the total sample under study. This shows that most of the respondents who participated in this study had their age range was below 30 years old. The next highest frequent age range was 30-39 with a frequency score of 22 representing 25.6%, followed by those age range was 40-49 with a frequency of 14 representing 16.3%, followed by those age range was 50-59 with a frequency of 8 representing 9.3%, and lastly the aged above 60 years with a frequency of 6 representing 7.0% of the entire population.

Concerning marital status, the majority of the respondents indicated that they are single with a frequency of 49 representing 57.0%. Followed by the married folks with a frequency of 36 representing 41.9% and subsequently respondents who are divorced, with a frequency of 1 representing 1.2% of the population of the study respectively.

On the issue of academic qualification of the respondents, the majority of the respondents, i.e. 37 out of the total respondents' understudy representing 43.0% indicated that they are Bachelor's degree holders. However, the minority of the respondents with the frequency of 10 (for each Diploma and HND) representing 11.6% each indicated that they are HND and Diploma holders.

Finally, with the issue of employees' working experience, the majority of the respondents with the frequency of 45 representing 52.3% indicated that their work experience falls within the range of 1-5 years. Followed by respondents with experience that fall within 6-10 with a frequency of 14 each representing 16.3%. Subsequently, respondents with experience that fall within 11-15 with a frequency of 13 each representing 15.1%. Respondents with experience that fall within 16-20 with a

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frequency of 9 each representing 10.5%, and lastly, the minority of the respondents with a frequency of 5 representing 5.8% of the entire respondents under study indicated that their working experience falls below 20 years.

4.2 Summary Description of Demographic and Study Variables

Table 3: Summary Statistics of Study Variables

Variable	Mean	Std. Deviation	Skewness	Kurtosis
Knowledge in Accounting	3.9429	1.01769	-1.206	.724
Training in Accounting	3.7020	.96543	-.797	.087
Experience in Accounting	3.7855	1.00149	-.735	-.346
Education in Accounting	3.8988	.93940	-1.164	.873
Motivation	4.0023	.92774	-1.257	.892
User Accounting Competence	3.8745	.87234	-1.130	.902
Value Creation	3.6849	.97637	-.903	.336
Sustainable Innovation	3.9113	.98740	-.913	-.081

Source: Field Data (2023)

Table 3 above shows a mean mark of 3.9429, 3.7020, 3.7855, 3.8988, 4.0023, 3.8745 for knowledge in accounting, training in accounting, experience in training, education in accounting, motivation, and user accounting competence respectively. This suggests that the employees understudy agreed to the fact that user's accounting competence plays a role of value creation. Also, a mean mark of 3.6849 for sustainable innovation plays a role in value creation among family businesses.

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4.3 Reliability

This section of the chapter presents the results from the reliability test conducted by the researcher. The results are shown below.

Table 4 Reliability Statistics

Variables	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
Knowledge in Accounting	.974	.975	11
Training in Accounting	.945	.946	8
Experience in Accounting	.965	.966	9
Education in Accounting	.951	.953	10
Motivation	.967	.967	10
User Accounting Competency	.986	.987	48
Value Creation	.957	.958	10
Sustainable Innovation	.961	.962	8

Source: Field Data (2023)

The Cronbach's alpha coefficient results, as presented in Table 4 indicates that all the scales for measuring the variables in the study exceeded the conventional acceptable threshold of 0.7 (Jocom *et al.,* 2017). Hence, the Cronbach's Alpha results of .974, .945, .965, .951, .967, and .986 for the items measuring knowledge in accounting, training in accounting, experience in training, education in accounting, motivation, and user accounting competence respectively as constructs were highly reliable.

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Similarly, the Cronbach's alpha coefficients of sustainable innovation and value creation were .957 and .961 respectively which indicates that the items used in measuring the variables in question were reliable and dependable for further analysis.

4.4 Correlation Analysis among Study's Constructs

The was employed to assess the relationship that exist between the constructs understudy. The results are presented in Table 5.

Table 5: Correlation Analysis among Study's Constructs

	1	2	3	4	5	6	7	8
1 Knowledge in Accounting	1							
2 Training in Accounting	.752**	1						
3 Experience in Accounting	.014	.719**	1					
4 Education in Accounting	.029	.681**	.690**	1				
5 Motivation	.035	.645**	.780**	.792**	1			
6 User Accounting Competence	.750**	.635**	.790**	.795**	.607**	1		
7 Sustainable Innovation	.098	.011	.099	.037	.024	.069	1	
8 Value Creation	.707**	.762**	.728**	.722**	.709**	.804**	.775**	1

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Field Data (2023)

From Table 5, it can be seen that there exist a significant positive relationship between knowledge in accounting and value creation (r= .707, p< 0.01); training in accounting and value creation (r= .762, p< 0.01); experience in accounting and value creation (r= .728, p< 0.01); education in accounting and value creation (r= .722, p< 0.01); motivation and value creation (r= .709, p< 0.01); and user accounting competence and value creation (r= .804, p< 0.01). In other words, knowledge in accounting, training in accounting, experience in training, education in accounting, motivation, and user accounting competence correlates positively and significantly with value creation.

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Similarly, the results of the study reveal that sustainable innovation has a significant positive relationship with value creation (r= .775, p< 0.01). In other words, sustainable innovation correlates positively and significantly with value creation.

4.5 Regression Analysis

From previous discussions of the findings of this study, the relationship between the variables under study has been established and there is the need to know the impact of the dimension of user competence in accounting (training in accounting, experience in accounting, education in accounting, and motivation) on value creation. The study used the coefficient of determination to evaluate the model fit. The model summary is presented in Table 6.

Table 6: Regression Analysis of Dimensions of User Competence in Accounting on Value Creation

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.	VIF	R^2	F Statistics
(Constant)	.016	.285		.057	.955		.696	36.699
Accounting Knowledge in Accounting	-.201	.143	-.209	-1.399	.166	5.895		
Training in Accounting	.428	.100	.423	4.281	.000	2.576		
Experience in Accounting	.241	.114	.248	2.116	.037	3.611		
Education in Accounting	.297	.123	.286	2.412	.018	3.703		
Motivation	.201	.132	.191	1.519	.133	4.144		

Dependent Variable: Value Creation

Source: Field Data (2023)

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4.6 Moderation Analysis

The interaction effect of sustainable innovation in the relationship between user competence in accounting and value creation was tested using Hayes PROCESS macro. Sustainable innovation served as the moderator, user competence in accounting was used as the independent variable whiles value creation served as the dependent variable. The results are presented in Table 7 below.

Table 7: The interaction effect of Sustainable Innovation in the nexus between User Competency of Accounting Information System and Value Creation

	B	Boot SE	T	P	LLCI	ULCI
Constant	-.7514	.8366	-.8983	.3717	-2.4156	.9127
User Competency of Accounting Information System	.7875	.2541	3.0992	.0027	.2820	1.2930
Sustainable Innovation	.6083	.2606	2.3340	.0220	.0898	1.1268
Int_1	-.0629	.0670	-.9379	.3510	-.1963	.0705
	R^2 = .1512		F = 19.7205			

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Source: Field Data (2023)

4.7 Hypotheses Testing

4.7.1 Knowledge in Accounting and Value Creation

H1a: There is a statistically significant positive impact of accounting knowledge as a user competency of accounting information system on value creation among family businesses.

From Table 5 it can be seen that accounting knowledge as a user competency of accounting information system has an insignificant and negative effect on value creation (β = -.201, p> 0.05), hence the hypothesis that there is a statistically significant

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positive impact of accounting knowledge as a user competency of accounting information system on value creation among family businesses (i.e. H1a) is not supported. Thus, accounting knowledge as a user competency of accounting information system proves to have an insignificant negative impact on value creation. In essence, holding all other variables constant, accounting knowledge as a user competency of accounting information system induces 20.1 % change in value creation. Thus, this result proves that when accounting knowledge as a user competency of accounting information system is improved by 1%, it will cause an insignificant negative change in value creation by 20.1%.

4.7.2 Training in Accounting and Value creation

H1b: There is a statistically significant positive impact of training as a user competency of accounting information system on value creation among family businesses.

From Table 5 it can be seen that training as a user competency of accounting information system has a significant and positive effect on value creation ($\beta = .428$, $p < 0.001$), hence the hypothesis that there is a statistically significant positive impact of training as a user competency of accounting information system on value creation among family businesses (i.e. H1b) is supported. Thus, training as a user competency of accounting information system proves to have a significant positive impact on value creation. In essence, holding all other variables constant, training as a user competency of accounting information system induces 42.8% change in value creation. Thus, this result proves that when training as a user competency of accounting information system is improved by 1%, it will cause a significant positive change in value creation by 42.8%.

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4.7.3 Education in Accounting and Value Creation

H1c: There is a statistically significant positive impact of educational level as a user competency of accounting information system on value creation among family businesses.

From Table 5 it can be seen that educational level as a user competency of accounting information system has a significant and positive effect on value creation (β = .297, p< 0.05), hence the hypothesis that there is a statistically significant positive impact of educational level as a user competency of accounting information system on value creation among family businesses (i.e. H1c) is supported. Thus, educational level as a user competency of accounting information system to have a significant positive impact on value creation. In essence, holding all other variables constant, training as a user competency of accounting information system induces 29.7% change in value creation. Thus, this result proves that when educational level as a user competency of accounting information system is improved by 1%, it will cause a significant positive change in value creation by 29.7%.

4.7.4 Experience in Accounting and Value Creation

H1d: There is a statistically significant positive impact of experience as a user competency of accounting information system on value creation among family businesses.

From Table 5 it can be seen that experience as a user competency of accounting information system has a significant and positive effect on value creation (β = .241, p< 0.05), hence the hypothesis that there is a statistically significant positive impact of experience as a user competency of accounting information system on value creation among family businesses (i.e. H1d) is supported. Thus, experience as a user

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competency of accounting information system to have a significant positive impact on value creation. In essence, holding all other variables constant, experience as a user competency of accounting information system induces 24.1% change in value creation. Thus, this result proves that when experience as a user competency of accounting information system is improved by 1%, it will cause a significant positive change in value creation by 24.1%.

4.7.5 Motivation and Value Creation

H1e: There is a statistically significant positive impact of motivation as a user competency of accounting information system on value creation among family businesses.

From Table 5 it can be seen that motivation as a user competency of accounting information system has an insignificant and positive effect on value creation ($\beta = .201$, $p < 0.05$), hence the hypothesis that there is a statistically significant positive impact of motivation as a user competency of accounting information system on value creation among family businesses (i.e. H1e) is not supported. Thus, motivation as a user competency of accounting information system have an insignificant positive impact on value creation. In essence, holding all other variables constant, motivation as a user competency of accounting information system induces 20.1% change in value creation. Thus, this result proves that when motivation as a user competency of accounting information system is improved by 1%, it will cause an insignificant positive change in value creation by 20.1%.

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4.7.6 User Competency of Accounting Information System, Sustainable Innovation, and Value Creation

H2: There is an interaction effect of sustainable innovation in the relationship between user competency of accounting information system and value creation.

The results from Table 7 indicate that sustainable innovation does not moderate the influence user competency of accounting information system on value creation (β = .0629, t=-.9379, p>.05), indicating support for H2 of this study (see Figure 3.0). This means that sustainable innovation does not strengthen the association between user competency of accounting information system and value creation.

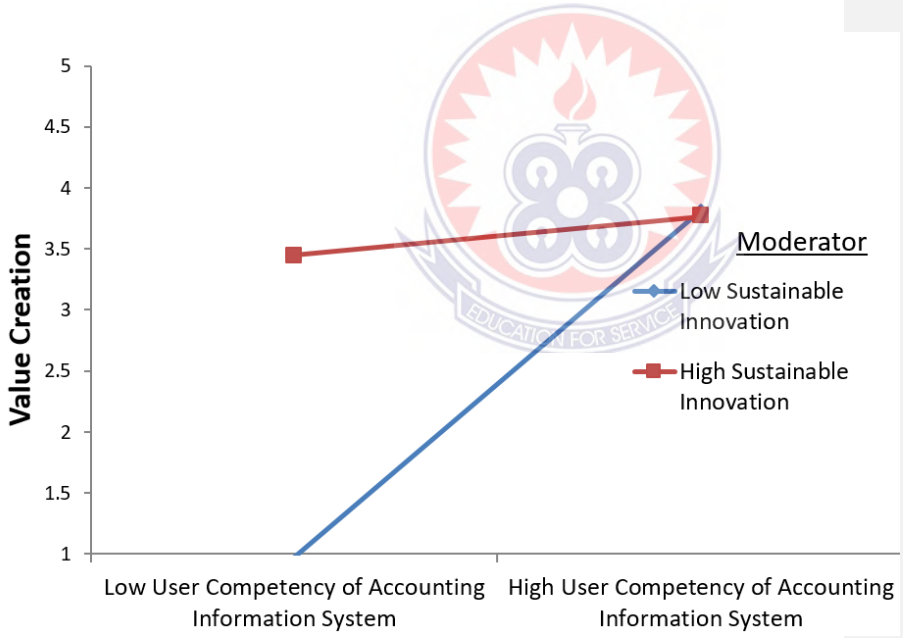

Figure 3: Interactional effect of sustainable innovation on the relationship between user competency of accounting information system and value creation.

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4.8 Discussion of Findings

As stated in chapter one, the first objective of this study was to investigate the effect of the dimension of user competency of accounting information system on value creation among family businesses. In line with this objective, the first hypothesis of this study sought to test the impact of accounting knowledge on value creation. The finding of the study showed that accounting knowledge as a user competency of accounting information system has an insignificant and negative effect on value creation, hence the hypothesis that there is a statistically significant positive impact of accounting knowledge as a user competency of accounting information system on value creation among family businesses (i.e. H1a) is not supported. Empirically, this finding is inconsistent with that of Alnajjar (2017) also conducted a study with the purpose of investigating the impact of accounting managers' knowledge and top management support on the accounting information systems and moreover, to analyze the impact of accounting information systems on the performance management and organizational performance. This is also inconsistent with the study conducted by Lingga (2020) which analyzed the importance of user competency to the effectiveness of Accounting Information system in Banking sector in Indonesia and showed that inadequate knowledge and skills possessed by the employees will give an impact to the effectiveness of the accounting information system.

In line with the first objective, the hypothesis further tested the impact of training on value creation. The finding of the study showed that training as a user competency of accounting information system has a significant and positive effect on value creation, hence the hypothesis that there is a statistically significant positive impact of training as a user competency of accounting information system on value creation among family businesses (i.e. H1b) is supported. Empirically, this finding is consistent with that of

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Nurhayati and Ladewi (2015) who studied the impact of training on accounting information systems and value creation. They found that personal information system capabilities, top management support, and training and education program performance had a significant impact on the quality of accounting information. Mauldin and Ruchala (1999) showed both general IT training and accounting-specific AIS training boosted productivity gains from AIS expertise. Ma *et al*. (2014) found positive links between employees' AIS skills and firm productivity were stronger when firms provided on-the-job end-user training. They argue training helps employees translate AIS knowledge into business value. Agustin 2020 also found that education and training programs, system users' involvement, and human resources competence significantly impacted the quality of accounting information systems. Lastly, Meiryani 2020 found that accounting training had a significant influence on the application of accounting information in small and medium micro enterprises. These prior studies confirm that training impact value creation among family businesses.

In line with the first objective, the hypothesis further tested the impact of educational level on value creation. The finding of the study showed that educational level as a user competency of accounting information system has a significant and positive effect on value creation, hence the hypothesis that there is a statistically significant positive impact of educational level as a user competency of accounting information system on value creation among family businesses (i.e. H1c) is supported. Empirically, this finding is consistent with that of the study conducted by Rahman (2018) which showed Indonesian professionals' education level strengthened the relationship between AIS competence and career advancement. Ratnawati (2023) also carried a study to examine the implementation of the use of accounting information systems through education levels, length of business and accounting training. Unit of analysis of SME owners of

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rattan industrial centers in Malang City. Data analysis was performed with multiple linear regression. The results of this study indicate that partially educational level has a positive and significant effect on the use of accounting information systems, the higher the level of education attained, the greater the use of accounting information systems. Accounting training has a positive and significant effect on the use of accounting information systems, the more often SME owners attend accounting training while practicing it, the ability of business owners will be honed. However, effects depended on field of study; accounting-specific degrees amplified impacts more than general education. Likewise, Karim *et al.*, (2009), Ma *et al*., (2014), and Al-Eqab (2020) reported that there is a significant impact of educational level on value creation.

In line with the first objective, the hypothesis also tested the impact of experience on value creation. The finding of the study showed that experience as a user competency of accounting information system has a significant and positive effect on value creation, hence the hypothesis that there is a statistically significant positive impact of experience as a user competency of accounting information system on value creation among family businesses (i.e. H1d) is supported. Empirically, this finding finds empirical support from Haleem and Kevin (2018) who conducted a study to assess the impact of user competency on accounting information system success: banking sectors in Sri Lanka. This study used survey data from 318 respondents from eighty-two banks through a structured questionnaire. Through structured equation modelling this research assessed the relationship between user competency and AIS success. Three factors from user skills named Technical, Human, and Conceptual skills and two factors from user knowledge: User knowledge and experience have contributed to AIS success. In addition, the results suggested that both user Experience and technical skills contribute

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more to AIS success rather than absolute values of user skills such as human skills and conceptual skills, and user knowledge. Murphy *et al.,* (2015) also did a study on value creation in cross-sector collaborations: the roles of experience and alignment. This study uses a survey (N = 362) to analyze types of benefits sought by partners in cross-sector collaborations (between businesses and NPOs) in Spain and to test and build upon theories that indicate prior collaboration experience and partner alignment will positively affect value creation through the collaboration. Using exploratory factor analysis to operationalize a broad range of potential benefits into more specific concepts, the results of this study identify distinct factors that characterize the types of benefits sought by non-profit organizations and businesses engaged in cross-sector collaborations. Findings show that prior experience and alignment positively affect each factor for value creation. Prior experience is also found to influence the type of benefits sought from cross-sector collaborations and to positively affect alignment in terms of mission and strategy. Unexpectedly, the finding is also consistent with these prior studies.

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In line with the first objective, the hypothesis further tested the impact of motivation on value creation. The finding of the study showed that motivation as a user competency of accounting information system has an insignificant and positive effect on value creation, hence the hypothesis that there is a statistically significant positive impact of motivation as a user competency of accounting information system on value creation among family businesses (i.e. H1e) is not supported. Empirically, this finding is inconsistent with the study conducted by Abdolmohammadi *et al*. (2006) who found a significant interaction between Iranian auditors' intrinsic motivation and AIS expertise on performance. Waseem (2020) explores the drivers of employee motivation for value co-creation and identifies factors such as rewards and recognition, interpersonal

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engagement, and organisational vision. Quyen (2020) examines the effects of customer values on intrinsic motivation for co-creation and finds that personal values, particularly self-direction, have a positive impact on customer motivation. Osterloh (2002) discusses the dynamics of motivation in new organizational forms and highlights the importance of balancing intrinsic and extrinsic motivation for value creation. All these prior studies are inconsistent with the finding.

In line with the second objective, this hypothesis tested the interaction effect of Sustainable Innovation in the relationship between User Competency of Accounting Information System and value creation. The finding of the study showed that sustainability innovation does not moderate the influence of user competency of accounting information system on value creation (β = .0629, t=-.9379, p>.05), indicating no support for H2 of this study. This means that sustainable innovation does not strengthen the association between user competency of accounting information system and value creation. Empirically, this finding is inconsistent with the study conducted by Yousaf *et al*. (2022) examined the direct effect of innovation capability on value creation. The mediating role of frugal innovation and the moderating role of knowledge sharing are also explored between innovation capability and value creation link. Results proved that frugal innovation mediates the relations between innovation capability and value creation. Also, Esawe *et al*. (2023) investigated the impact of environmentally sustainable innovation practices on consumer resistance to innovation in eco-hotel enterprises and the moderating influence of value co-creation. Partial least squares structural equation modelling was used to test the study's hypotheses on a sample of 382 eco-hotel enterprise consumers surveyed online. Results reveal that value co-creation partially moderates the influence of environmentally sustainable innovation practices on consumer resistance to innovation, implying that other variables can

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influence this relationship. Moreover, Hermundsdottir and Aspelund (2021) examined the relationship between sustainability innovations and competitiveness and to identify the contextual factors that mediate and moderate this relationship. The study concludes that a vast majority of studies found positive relationships. Hence, the findings support the view that sustainability innovations can create win-win situations for a firm. All these prior studies are inconsistent with the finding

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This is the final chapter of the study and it presents the summary of the research findings and conclusions in line with the research objectives. Also, this chapter presents some recommendations for policy and practice. Additionally, this chapter discusses the study's limitations and implications for future studies.

5.1 Summary of Findings

Based on the research gaps identified from the literature reviewed, this study's main objective was to examine the extent to which user competency of Accounting information system is influenced by the Experience, Educational level, knowledge, training and motivation, and how the AIS impact value creation among family businesses in the Central Region of Ghana. And, to further examine the interaction effect of sustainable innovation in the relationship between user competency of accounting information system and value creation.

This was assessed by specifically addressing two objectives, but the first objective was further regrouped into sub-objectives: (a) to examine the impact of accounting knowledge as a user competency of accounting information system on value creation among family businesses, (b) to examine the impact of training as a user competency of accounting information system on value creation among family businesses, (c) to examine the impact of educational level as a user competency of accounting information system on value creation among family businesses, (d) to examine the impact of experience as a user competency of accounting information system on value creation among family businesses, (e) to examine the impact of motivation as a user competency of accounting information system on value creation among family

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businesses. The results from the regression analysis showed that Training, experience, educational level, and motivation had a significantly positive impact on value creation. However, accounting knowledge had an insignificant and negative effect on value creation.

The second objective which is to assess the interaction effect of sustainable innovation in the relationship between user competency of accounting information system and value creation among family businesses in the Central region of Ghana. The finding from the interaction effects between the independent variable, moderating variable and dependent variable also showed that sustainable innovation does not strengthen the association between user competency of accounting information system and value creation. The stratified random sampling technique was used to collect data from 86 respondents of the family businesses in the Central region of Ghana.

5.2 Conclusion

The purpose of this study was to examine the extent to which user competency of Accounting information system is influenced by the Experience, Educational level, knowledge, training and motivation, and how the AIS impact value creation among family businesses in the Central Region of Ghana. And, to further examine the interaction effect of sustainable innovation in the relationship between user competency of accounting information system and value creation using the Technology Acceptance Model theory and Resource Based View Theory as the theoretical lens.

The results from the first objective showed that training, experience, educational level, and motivation had a significantly positive impact on value creation. This indicates that management of family businesses is doing well in improving training, experience, educational level, and motivational because it has yielded the needed outcome.

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However, accounting knowledge had an insignificant and negative effect on value creation. This indicates that accounting knowledge hasn't been given enough attention to create value for family businesses. This puts pressure on management and shareholders of family businesses to improve the accounting knowledge of the accounting department.

The finding that sustainable innovation does not moderate the influence of user competency of accounting information system on value creation indicate that the family businesses may struggle to differentiate itself from other competitors who effectively leverage both user competency and innovative AIS practices. It also indicates that the firm may miss opportunities to enhance its reputation for sustainability, potentially affecting stakeholder relationship.

Overall, the results contribute to an emerging area within accounting information system function effectiveness that highlights the significance of understanding the implementation process in adopting and implementing proactive accounting information system strategies to enhance user competency that will improve accounting staff in and among family businesses in Ghana. Overall, the results provide broad support for the theoretical framework and empirical review outlined in the study.

5.3 Recommendations

Based on the findings of the study, the study recommends the following for family businesses that are interested in adopting and implementing strategies in order to improve user competency of accounting information system in the bid to achieve value creation through sustainable innovation:

i. Drawing on the aforementioned implication of user competency on accounting information system and value creation, Family businesses

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should invest in ongoing training and development of employees' AIS skills to improve competency levels and ability to fully utilize these systems. Priorities and best practices should be given to all accounting staff on training programs on AIS tools tailored to business roles among the various family businesses. The training should not only focus on the top accounting staff but also the junior accounting staff. Family businesses should improve on conceptual and technical skills to employees in accounting through ongoing training regarding information technology so that employees are able to use accounting information system effectively. Moreover, since educational level has a significant positive effect on value creation, family businesses should do well to prioritize employing staff with higher educational level. Also, employees should be motivated enough in order to perform their duty diligently. People with the needed experiences should be employed to work since it is proven to have a significant effect on value creation. Also, those employed into the accounting department must have an educational background in accounting and have adequate knowledge regarding accounting information system. Family businesses must make provisions for their accounting staff to make it more flexible for them to improve themselves through other education such as enrolling in a professional development such as ICAG, ACCA, CIMA, etc. Thus, enrolling in these professional courses would help them to improve the accounting knowledge.

ii. Lack of a moderating effect from sustainable innovation on the relationship between user competency in AIS and value creation could hinder a firm's performance, competitiveness, and alignment with broader sustainability

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goals. Therefore, family businesses should foster a culture of information sharing and collaboration between departments to maximize the value derived from AIS data in driving sustainable innovation initiatives.

iii. Finally, governments, agencies, such as the Audit Service Agency, Universities, Professional Institutes, in the effort to inculcating the use of accounting information system in accounting curriculum, should not only concentrate on the write and pass outcome, but seminar series and practical sections are to be organized for the potential accountants to enthused them to willingly develop the culture of ethical relevance in their practice.

5.4 Implications for Practice and Future Studies

Overall, the results contribute to an emerging area within accounting function effectiveness that highlights the significance of understanding the implementation process in adopting and in implementing proactive accounting information system through the use of training, accounting knowledge, educational level, experience within all institution in Ghana. These findings imply that accounting information system and value creation is impacted by user competencies. The study also imply that firms could study how leaders in various industries have leveraged AIS platforms to digitally transform their organizations and business models to achieve market leading innovation and performance.

Also, this study is perhaps like any other research work; hence it is not exempted from limitations. For example, Family businesses in the twenty-first century operate in a turbulent and ever-changing business environment characterized by intense competition, unstable labour force, globalization, and quick changes in consumer demands. User competencies needs to be improved immensely to significantly impact value creation. As a result, it is therefore imperative to examine longitudinal analyses

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on how emerging AIS innovations (blockchain, big data analytics etc.) can transform existing business processes to drive sustainable value creation.

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RESEARCH QUESTIONNAIRE

UNIVERSITY OF EDUCATION, WINNEBA

SCHOOL OF BUSINESS

DEPARTMENT OF ACCOUNTING

TOPIC: USER COMPETENCY OF ACCOUNTING INFORMATION SYSTEM, SUSTAINABLE INNOVATION AND VALUE CREATION AMONG FAMILY BUSINESSES

I am/we are . . . undertaking a study leading to the award of Master of Business (MBA) in Accounting at the University of Education, Winneba Business School in the Central Region of Ghana. This research is being undertaken to assist the researcher to make an objective assessment of the aforementioned research topic. Therefore, I would appreciate any assistance that can be given to me to enable me to collect data/information by providing the necessary responses to these questions outlined below. This is purely an academic exercise and any information given would be treated as confidential. Thank you in advance for your assistance.

SECTION A: DEMOGRAPHIC INFORMATION

Please tick (√) in the appropriate box:

1. Age: a. Below 30 years [ ] b. 30-39 years [ ] c. 40-49 years [ ] d. 50-59 years [ ] e. Above 60 years [ ]
2. Gender: a. Male [ ] b. Female [ ]
3. Marital Status: a. Single [ ] b. Married [ ] c. Divorced [ ]
4. Academic Qualification: a. Diploma [ ] b. HND [ ] c. Bachelor's degree [ ] d. Master's Degree [ ]

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5. Working Experience: a. 1-5 years [ ] b. 6-10 years [ ] c. 11-15 years [ ] d. 16-20 years [ ] e. More than 20 years [ ]

SECTION B: This part assesses User Competency of Accounting Information System

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

A. ACCOUNTING KNOWLEDGE

	Statements regarding how Accounting Knowledge impact User Competency of Accounting Information System on Value Creation	1	2	3	4	5
1	I have a strong understanding of basic accounting principles and concepts					
2	I understand accounting standards like GAAP, IFRS etc. that apply to our organization.					
3	I am able to review accounting entries and financial reports to ensure accuracy					
4	I understand accounting processes like reconciliations, accruals, deferrals etc.					
5	I am knowledgeable about the features and functionalities of our AIS.					
6	I am able to interpret and analyze key accounting reports like balance sheets, income statements etc.					
7	I understand how our chart of accounts and accounting system are structured.					
8	I have knowledge of cost and managerial accounting concepts as needed in my role.					
9	I understand accounting for areas like fixed assets, payroll, taxes, inventory etc.					

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10	I am able to ensure accounting transactions comply with internal control policies.					
11	I stay up to date on changes in accounting standards and principles					

B. TRAINING

	Statements regarding how Training impact User Competency of Accounting Information System on Value Creation	**1**	**2**	**3**	**4**	**5**
1	I received adequate training on the accounting system when I started using it					
2	The initial training provided me the skills needed to use the key functions of the system.					
3	Ongoing refresher training is available when major updates are made to the system.					
4	I have access to training resources or manuals when I need to troubleshoot issues.					
5	Hands-on training is provided to learn new reports, transactions, or processes.					
6	The training teaches me accounting concepts in addition to system skills.					
7	Training prepares me to analyze and interpret accounting reports effectively.					
8	The organization provides opportunities for advanced or specialized training					

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C. EXPERIENCE

	Statements regarding how Experience impact User Competency of Accounting Information System on Value Creation	**1**	**2**	**3**	**4**	**5**
1	I have sufficient experience with accounting systems and software.					
2	I have used this accounting system long enough to be highly competent with it.					
3	My accounting experience enables me to effectively use the system's reports and data.					
4	My experience enables me to recognize irregular or inaccurate transactions.					
5	I draw upon previous accounting experience when questions/issues arise.					
6	My experience allows me to understand accounting data and transactions in the system.					
7	I have experience with similar accounting systems and can adapt quickly.					
8	I can apply my accounting knowledge to effectively use this system					
9	My experience allows me to train/support new system users if needed					

D. EDUCATIONAL LEVEL

	Statements regarding how Educational Level impact User Competency of Accounting Information System on Value Creation	**1**	**2**	**3**	**4**	**5**
1	I have a relevant educational background for my accounting system role.					
2	I have a degree in accounting, finance, or a related field.					

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3	My education provided a solid foundation in accounting concepts and standards.					
4	My education enables me to effectively analyze and interpret accounting data.					
5	I have received specific education on using accounting software/systems.					
6	I pursue continuing education or training to enhance my accounting system skills.					
7	My education level is appropriate for the complexity of my accounting system responsibilities.					
8	I leverage educational resources to stay current on accounting best practices.					
9	My education prepared me to maintain internal controls over financial data.					
10	I have professional certifications relevant to my accounting system proficiencies.					

E. MOTIVATION

	Statements regarding how Motivation impact User Competency of Accounting Information System on Value Creation	**1**	**2**	**3**	**4**	**5**
1	I am motivated to become highly skilled at using the accounting system					
2	I take initiative to improve my skills and learn new capabilities of the system					
3	I see mastery of this system as important for my career advancement.					
4	I am committed to keeping my accounting system skills sharp.					
5	My job performance goals include accounting system proficiencies.					

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6	I am motivated to stay up-to-date on enhancements made to the accounting system					
7	I am driven to produce accurate and timely financial reports from the system.					
8	I work to continuously improve the quality of data within the accounting system.					
9	My motivation enables me to troubleshoot issues and problem-solve independently.					
10	I am energized to use the accounting system to uncover financial insights					

SECTION C: This section assess Value Creation

Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	**2**	**3**	**4**	**5**

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	Statements regarding Value Creation	**1**	**2**	**3**	**4**	**5**
1	My company design products for long lifespans and durability.					
2	My company place on enabling repair, reuse, refurbishment, and remanufacturing of products after initial sale.					
3	My company attempt to maximize utilization of products by multiple users (e.g. sharing platforms, product-as-a-service).					
4	My company focus on using fewer raw materials and resources per product produced than industry averages.					

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5	My company calculate and minimize environmental impacts across the full product lifecycle.					
6	My company minimize waste and maximize material recovery in production and after product end-of-life.					
7	My company rely on recycled inputs and renewable energy in production processes.					
8	My company design products to be modular, upgradable, and adaptable to changing user needs over time.					
9	My company invest in taking back products and responsibly managing end-of-life disposal.					
10	My company places emphasis on dematerialization - delivering utility virtually rather than through physical products.					

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SECTION D: Assess the interaction effect of Sustainable Innovation in the relationship between User Competency of Accounting Information System and value creation.

Strongly Disagree 1 Disagree 2 Neutral 3 Agree 4 Strongly Agree 5

	Statements regarding the interaction effect of Sustainable Innovation in the relationship between User Competency of Accounting Information System and value creation	**1**	**2**	**3**	**4**	**5**
1	Our business actively seeks and implements sustainable innovation practices.					
2	Sustainable innovation has played a significant role in our business operations					
3	We prioritize sustainability in our product/service development and delivery					
4	Sustainable innovation has positively impacted our business's environmental and social performance					
5	Sustainable innovation positively influences the value creation in our business.					
6	The competency of AIS users is enhanced by our focus on sustainable innovation					
7	We observe a synergistic effect between sustainable innovation, user competency in AIS, and value creation					
8	Our business actively participates in industry collaborations for sustainable innovation projects					

Thank you for your contribution.