ACCOUNTING INFORMATION SYSTEMS AND FIRM PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES IN NAKAWA DIVISION

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DECLARATION

I, **Maureen Acen**, hereby declare that this research dissertation titled "*Accounting Information Systems and Firm Performance of Small and Medium Enterprises in Nakawa Division*" is my original work and has not been submitted to any other, institution of higher learning for any academic award.

Signature…… Date……

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APPROVAL

This work has been under our supervision and has met the research dissertation requirements of Kyambogo University and is now ready for submission.

Dr Ayebale Dan

Signature……

Date…….

Dr Ssendagire Dorothy

Signature……

Date…….

DEDICATION

I dedicate this work to God the Almighty, to my father Mr. Oyang Augustine Atubo, and my son Alexander Munroe Vilmaro.

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Firstly, I would like to thank God for the strength and energy through this whole Master's course. His mercy knows no bounds and I give glory on His name.

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AIS…… Accounting information Systems

MIS……. Management Information Systems

SMEs…….. Small and Medium Enterprises

ABSTRACT

This study was set to investigate the relationship between accounting information systems and firm performance of SMEs in Nakawa division of Uganda. Specifically, the study examined the relationship between system quality and firm performance, assessed the relationship between information quality and firm performance, and analyzed the relationship between system threats and firm performance of SMEs in Uganda. A survey design was adopted and a sample of 144 SMEs was selected from all 240 SMEs that are established in Nakawa division. The findings of the study were based on correlation analysis. The findings of the study unveiled the following key insights. First, accounting information systems had a statistically significant relationship with firm performance. Further the study established that system quality had a statistically positive relationship with firm performance. The study also revealed that information quality had a statistically significant relationship with firm performance. Finally, the study revealed that system threats have a statistically negative relationship with firm performance. The study concluded that accounting information systems are critical to the production of quality accounting information on a timely basis and ensures that all levels of management get sufficient, adequate, relevant and true information for planning and increases the control and enhances the performance of a firm. The study recommends that SMEs need a well-designed and operating accounting information system to enable them manage its most valuable resource which is information. Further research should include intervening and moderating variables and study this effect, and further research may conduct longitudinal studies that may study the relationship over a long period of time.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Small Business Enterprises (SMEs) play an important role in the economic development of Uganda by providing employment and production of goods and services (Ssewagudde, 2018). However, the extent of contribution that these business entities make to towards the economic growth and development of Uganda is dependent on the level of success attained through their operations (Ojiambo, 2016). The fact is that, the major factors that influence the success of a business enterprise is the establishment and application of controls by the owners and management in addition to an organized way record keeping of business transactions, which informs the owner about the performance and growth of the business (Mbroh, 2011). An organization needs a well-designed and operating accounting information system to enable them manages its most valuable resource which is information (Muhindo, Mzuza, & Zhou, 2014).

This chapter presents the background of the study, statement of the problem, purpose, objectives, and research questions, scope of the study, significance and definition of key terms.

1.1 Background to the study

1.1.1 Historical Background

In the 1970s, early accounting information systems were designed for personnel and payroll functions. Originally, accounting information systems were developed "in-house" as no packaged solutions were available. (Hurt, 2015) Such solutions were expensive to develop and difficult to maintain. Therefore, many accounting practitioners preferred the manual approach rather than computer-based (Fontinelle, 2019).

In the early days, small businesses view on record keeping was normally paper based records maintained and then handed over to the accounting firm to prepare the annual tax return (Hall, 2008). According to Porter and Miller (1985), over the years, information technology has played a major role in changing the nature of business and this appears to reduce the difficulties with record keeping practice with the introduction of new technologies like the computerized accounting system (CAS) which is a more user-friendly software.

Traditional legacy Accounting Information Systems that were used before the new current systems were mainly paper-based systems and seem inappropriate for today's ever-changing business environment. Information technology (IT) revolution has transformed the nature of business operation, including accounting, to be led by IT and information systems (IS) applications (Trabulsi, 2018). The diffusion of such applications enhances the financial performance and maintains transparency within the business organizations while providing continuous access to the financial reports throughout the financial year (Melitski and Manoharan, 2014).

In more recent times, accounting information systems are configured and customized to match the organization's business processes. Larger organizations use software's such as Microsoft, Sage Group, SAP AG|SAP and Oracle Corporation|Oracle which are normally prebuilt software packages. Small businesses often use accounting lower costs software packages such as Tally, MYOB and Quickbooks.

1.1.2 Theoretical Background

The study is guided by the Contingency Theory

The Contingency Theory brought forward by Gordon and Miller (1970) states that an accounting information system should be designed in a flexible manner so as to consider the situation and firm structure with in an organization. Accounting information systems also need to be familiarized to the specific decisions being considered. In other words, accounting information systems need to be designed with the company mission, vision and objectives in mind. These need to be aligned with the accounting information systems so as to improve firm performance.

1.1.3 Conceptual Background

The guiding concepts in this study are accounting information systems as an independent variable and firm performance of SMES as a dependent variable. These concepts have been applied and conceptualized to different studies by previous scholars.

Accounting information system is considered as a subsystem of Management Information System (MIS). AIS can be defined as the integration of accounting with technology, information and managerial approach (Gökdeniz, 2005). Accounting information systems play a key role in managing an organization and implementing an internal control system. Usually, the accounting information system will process the data and convert them into accounting information during input, processing and output stages that can be used by a variety of users like the internal and external users.

Elvisa and Erkan (2015) noted that role of AIS is crucial in managing an organization in order to implement an effective and efficient internal control system within the organization to achieve firm goal. An accounting information system (AIS) is a “structure that a business uses to collect, store, manage, process, retrieve and report its financial data so it can be used by accountants,

consultants, business analysts, managers, chief financial officers (CFOs), auditors, regulators and tax agencies" (Fontinelle, 2019, p.7).

The idea of firm performance or efficiency holds a central location the running of private and public organizations as well as in the field of firm research. "Firm performance comprises of the actual output or results of an organization as measured against its intended outputs (or goals and objectives)" (Baum 2002, p.46). It is a comprehensive concept which captures what organizations do, produce, and accomplish for the various constituencies with which they interact.

According to Arredondo, Realyvásquez, & Escobedo (2019), firm performance measures the efficiency and effectiveness, with which administrators take advantage of resources to satisfy customers and achieve the goals of the organization. Conceptually, accounting information systems is significantly related to firm performance. Since accounting information systems whose dimensions are quality system, information quality and system threats lead to quality information that lead to good decision making, efficiency, and cost reduction and overall firm performance.

In this study therefore accounting information systems can be conceptualized as "systems that operate functions of data gathering, processing, categorizing and reporting financial events with the objective of providing relevant information for the purpose of score keeping, attention directing and decision-making" (Boocholdt, 1999, p.23).

1.1.4 Contextual Background

SMEs continue to dominate Uganda's Economy; these enterprises contribute over 90% of Uganda's private sector and their contribution per sector stands at 49% in service sector, 33% in

commerce and trade, 10% in manufacturing and a small portion of these enterprises at 8% in other. These SMES are a key driver in strengthening and fostering wealth creation, innovation as well as job creation for the increasing young population. However, majority of these enterprises in Uganda fail to persist for more than two years in operation (Kyatusiimire, 2018) .

Evidence from a number of studies reveals that SMEs financial accounting has remained the principle source of information for their managers (Adenike, (2017); Baum, (2002); Ojiambo, (2016). Despite having fully adopted accounting information systems studies have found that most SMEs have ineffective information management, poor system control and therefore most decision making is ad hoc (Homes & Nicholas, 1988).

Therefore, the study will have focus on Small and Medium Sized enterprises in Nakawa Division because Kampala district is highlighted among the districts with the greatest number of SME startups that fail to reach their second birthday in Uganda (PSFU Report, 2018). According to this report, Kampala is named among the central Ugandan districts which are populated with Small and Medium sized enterprises. Majority of these enterprises are engaged in manufacturing, general product and service based. Considering the substantial support from both government and other developments partners these enterprises have lived a stunted growth and others gone out of the business.

1.2 Statement of the Problem

Uganda is renowned internationally for its entrepreneurial flair and is ranked as one of the more entrepreneurial nations not only in Africa, but the world (Kurose, 2017) and based on SMEs important role in Uganda they create employment opportunities and supporting economic growth

(Kyatusiimire, 2018; Lutwama, 2015; Ojiambo, 2016). It is however puzzling to know that there is a remarkably high business failure rate of 30% in the nation implying SMEs rarely grow to their full potential and rarely live to celebrate their third birthday (Afunadula, 2018) . Although various interventions have been undertaken by BOU, government programs such the Youth Initiatives and the African Development Bank to buck the trend; however the performance of SMEs remains slow and does not meet the expected targets of the country (Ssewagudde, 2018).

Amidst these performance challenges among these enterprises, there is limited understanding on how these SMEs can enhance their performance especially by taking advantage of technology like accounting information systems to generate better reports for enhanced decision making and yet from the previous studies by (Caldeira and Ward, 2003; Adenike, 2017; Xu, 2003; Trabulsi, 2018) this has been considered as an important strategic area in terms of enhancing performance of firms. This study therefore sought to understand how accounting information systems is associated with the financial performance of Small and medium Enterprises in Uganda drawing on the empirical study of SMEs in Nakawa Division.

1.3 Purpose of the Study

The purpose of this study was to determine the relationship between accounting information systems and firm performance of SMEs in Nakawa Division.

1.4 Objectives of the Study

1. To examine the relationship between system quality and firm performance of SMEs in Nakawa Division.
2. To establish the relationship between information quality and firm performance of SMEs in Nakawa Division.

3. To establish the relationship between system threats and firm performance of SMEs in Nakawa Division.

1.5 Research Hypotheses

The study was be guided by the following null hypotheses;

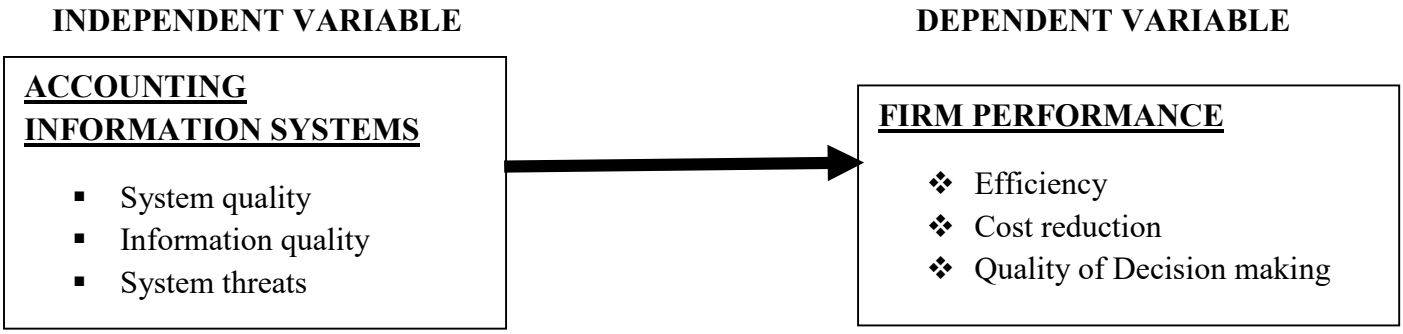
H_1 - The relationship between system quality and firm performance is not significant.

H_2 – the relationship between information quality and firm performance is not significant.

H_3 – The relationship between system threats and firm performance is not significant.

1.6 The Conceptual Framework

The conceptual framework draws relationship between the variables; it clearly indicates how the dependent and independent variable relate. This conceptual framework was guided by theoretical perspective of Contingency theory.



The framework is based on existing scholarly works including but not limited to DeLone & McLean (2003); Shagari, Abdullah, and Saat, (2015); and Trabulsi (2018).

Figure 1: Conceptual framework showing link between accounting information systems and firm performance of SMEs

From the above model, accounting information systems is a multi-dimension construct that predicts firm performance. Accounting information systems is conceptualized to include three

dimensions namely System quality, information quality and System threats. Firm performance is conceptualized by profitability, cost reduction and decision making of SMEs in Nakawa division.

1.7 Significance of the Study

SME owners. It is taken that the findings will enable these owners appreciate the role of accounting information systems in influencing their firm performance. The outcome will demonstrate the impact accounting information system have on overall firm performance as opposed to ordinary booking used long time ago as well as to find out the ways on how to improve organizational productivity by adjusting or adopting accounting information systems.

Academicians, Scholars and Researchers. The results will also add to existing body of knowledge by reviewing literature and further reference as a starting point to carry out similar research on the topic. They can also extend their efforts in the areas which have not been covered by the study.

1.8 Scope of the study

1.8.1 Content scope

The study is aimed at establishing a relationship between accounting information systems and firm performance of SMEs in Uganda specifically looking at Kampala, Nakawa Division. The independent variable is accounting information systems with sub variables being; System quality, information quality and System threats, while the dependent variable being firm performance measured by profitability, cost reduction and decision making.

1.8.2 Geographical scope

The study was be carried out in Kampala, Nakawa Division. It lies in the eastern part of the city bordering Kira Town to the east, Wakiso District to the north, Kawempe Division to the north-east, Kampala Central Division to the west, Makindye Division across Murchison Bay to the south-west and Lake Victoria to the south.

1.8.3 Time Scope

The study gathered the relevant information with a period of ten (10) years; 2009 - 2019. Additionally, the study used data ranging from 2013 -2018. This time is long enough for getting the required information for the study.

1.9 Definition of Key Term

SMEs – Small Enterprises are those businesses that employ between 5 and 49 people and have total assets between UGX 10 million but not exceeding UGX 100 million. The Medium Enterprises are businesses that employ between 50 and 100 people with total assets more than UGX 100 million but not exceeding UGX 360 million. (Uganda Investment Authority)

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents theoretical review, literature review an empirical review. The theoretical review explains the theory used by different scholars on the study variables and how it underpins the study. It also contains definitions and discussions on key terms that are covered, on the other hand empirical review attempts to explain the gaps identified from different studies done on similar subject and hence trying to bridge those gaps.

2.1 Theoretical review

2.1.1 The Contingency Theory

The Contingency theory brought forward by Lawrence & Danny 1976, postulates that an accounting information system should be designed in a flexible manner so as to consider the situation and firm structure with in an organization. Accounting information systems also need to be adapting to the specific decisions being considered. In other words, accounting information systems need to be designed within an adaptive framework. Other early contingency research summarized by (Otley, 1980) found no universally appropriate management accounting system applicable to all organizations in all circumstances. The techniques or system is inherently dependent on specific circumstances of each firm

Empirical studies have examined growth of SMEs using the contingency theory. (Harash, Suhail, & Ahmed, 2014; (Fagbemi & Olaoye, 2016; Emad, 2017), They used the contingency theory and studied accouning information systems and firm performnce and established that accounting information systems improves firm performnce and particularly so when the system is designed in a manner that suits the firm and its users.

Fagbemi & Olaoye (2016) used the contingency theory to evaluate accounting information systems and performance of Small scale enterpries in Nigeria. The findings of this study found that accounting information systems hold prospects of enhancing the performance of Small and Medium Scale Enterprises with additional frontiers for such businesses to expand their operation. The study also proves that though contingency factors; computerized accounting information systems and effective inventory control systems; the performance of small business entities are improved upon thereby overcoming the odds associated with obtaining funds needed.

Emad (2017) used the contingency theory to describe the effects of accounting information systems on accounting perfromance of SMEs in Iraq and concluded that in order to improve performance, mamager should devote particular attention to their use of accounting information systems, taking care to adopt systems best tairlored to suit their special circumstances. Therefore accounting information systems is viewed as a competence that a business owner may need to make appropriate financial and business decesions in order to achive competitive advantage and growth in a competitive environment (Harash, Suhail, & Ahmed, 2014).

2.2 Empirical Review

This shows the relationship between accounting information systems and organizational performance. Firm performance is the dependent variable and using the contingency theory it is conceptualized to be predicted by accounting information systems. From the proceeding sections, the key aspects derived from empirical investigation are system quality, information quality, system threats and firm performance. In this section, these concepts are explained and their link highlighted.

2.2.1 Accounting Information Systems

Management Information System (MIS) has a number of subsystems that integrate every department of a firm; an accounting information system is among those systems that connects the accounting department to the rest of the firm. The integration of accounting with technology, information and managerial approach is how AIS can be defined (Emad, 2017). Therefore, "accounting information system is a system of collecting, storing processing and analyzing financial and accounting information that are used by decision makers internally or externally" (Harash, Suhail, & Ahmed, 2014, p.50).

While most of the researcher's stress on the information technology-performance ratio in large-sized firms, investigations on the impact on smaller-sized ones becomes predominantly important. Due to the fact that they have a better response capability and are more flexible, investment in these technologies may give them a competitive advantage and the chance to position themselves to achieve better results (Emad, 2017; Fagbemi & Olaoye, 2016; Grande, Estébanez, & Colomina, 2011*)*.

Analysis and monitoring the financial condition of companies, preparation of necessary documents for tax purposes, providing information to support the many other firm functions such as production, marketing, human resource management, and strategic planning is the responsibility of accounting systems. Determination of performance, identification of customer and supplier account balances and forecast future performance of the organization would be very difficult for SMEs without accounting systems (Harash, Suhail, & Ahmed, 2014).

This is consistent with a study carried out in Turkey on the impact of accounting information systems on firm performance (Esmeray, 2016) and in order to have a different approach he investigated education status of managers and number of employee risings in relation to use of accounting information systems. He concluded that the use of information systems becomes more common when advanced level of education is increasing. Moreover, a positive relation between the number of company employees and the use of AIS has been found.

In the case of Uganda, a study was carried out find out the impact of accounting information systems on profitability of Small-Scale Businesses (Muhindo, Mzuza, & Zhou, 2014). They concluded that accounting information system is of great importance in business especially in its management. Accounting information systems should be accredited for the countless values it adds to businesses; this is due to the fact that it helps in enabling management decision making process with the documents that it produces. They also recommended that in order to progress successfully, small businesses should adopt accounting information systems in their business management.

Another study done by Emad (2017), he carried out a study to investigate the accounting performance of SMEs and effect of accounting information system in Iraq. He resolved that efficient accounting information systems ensures that all levels of management get satisfactory, adequate, all the necessary and true information for planning and increases the control and enhances the accounting performance in SMEs. They also provide an opportunity to update procedures and align them with perceived examples of best accounting performance and improve strategic effort of SMEs and improve data sharing and integrity.

In the Middle East, a study was done on the impact of accounting information systems on organizational performance of Saudi SMEs (Trabulsi, 2018). It was found that more concern should be directed towards AIS as an enhancement tool for better organizational performance. In a highly competitive and attractive organizational setting like SMEs, this seems critical to achieve a competitive advantage.

2.2.2 Firm Performance

Over the years, firm performance has received considerable attention as a substantial academic subject for investigating SMEs in the financial and management literature. Researchers and academicians have chosen a number of methods for the investigation of this subject. In the previous studies, the effects of using AIS have analyzed on SMEs performance by financially and non-financially.

The concept of firm performance or effectiveness holds a central position in the administration of private and public organizations as well as in the field of firm research. Firm performance comprises of the real output or results of a firm as measured against its intended outputs and set goals and objectives. “It is a broad concept which captures what organizations do, produce, and achieve for the various constituencies with which they interact” (Baum, 2002).

SMEs outnumber bigger companies by a wider margin and also employ a numerous amount of people. For example, In Tunisia, firms with fewer than 100 employees account for about 62% of total employment. Australian SMEs make up 97% of all Australian businesses, produce one third of total GDP, and employ 4.7 million people. In Chile, in the commercial year 2014, 98.5% of the firms were classified as SMEs. In developing countries, smaller (micro) and informal firms, have

a larger share than in developed countries. SMEs are also said to be responsible for pushing innovation and competition in many economic sectors. Although they create more jobs, there is also a majority of job destruction/contraction.

Accounting information systems have become an important component for SMEs in all sectors to cope with increasing competition and meet customers' needs (Baum, 2002; Emad, 2017; Fagbemi & Olaoye, 2016; Harash, Suhail, & Ahmed, 2014).

A study done on the impact of accounting information systems on decision making in Bosnia Bulijubasic & Ilgun (2015), it concluded that accounting information systems plays a very substantial role in the course of decision making therefore improving firm performance. Especially today's world when technology is constantly developing and offering new solutions with the purpose to ease and improve people's lives.

In another study done by Patel (2015), on the effects of accounting information systems on organizational profitability, he concluded that the effectiveness of accounting information systems in decision making from various aspect such as better decision-making by managers, more effective internal control systems, improvement of the quality of financial reports, enhancement of performance measures, facilitating financial transaction processes and helps in expansion of profitability of the organization.

2.3 System Quality and Firm Performance

System quality is concerned with the technical aspect of the system in term of meeting the user requirements. It has some commonly used measures such as reliability, flexibility, response time, maintainability (DeLone & McLean, 2003). This study defines system quality as degree of technical efficiency of the system, in terms of user interface consistency, ease of use, documentation quality, programming error and sustainability of the system.

Accounting information systems play a vital and key role, providing information that could help the firm's management perform its responsibilities and obligations to the fullest. Many researchers have pointed out that the success or failure of a firm in achieving its objectives depends on the system quality of the accounting information systems (Ali & Younes, 2013; Shagari, Abdullah, & Saat, 2015; Algrari & Ahamed, 2017).

Ali and Younes (2013), examined the impact of information systems on user performance by integrating Task Technology Fit (TTF) model, Technology Acceptance Model (TAM) and the Delone and Mclean model. They concluded that organizational performance directly and indirectly is significantly influenced by system quality. Moreover, of all the measures of system quality integration and reliability are found to be the most important factors that contribute to user performance significantly within an organization.

Shagari, Abdullah, & Saat (2015), studied the influence of system quality and information quality on accounting information system effectiveness in Nigerian banks. The results found that system quality is positively related to AIS effectiveness. The study determined that the results would

enhance their operational activities and decision making and assist banks management in understanding the determinants of AIS effectiveness.

Algrari & Ahamed (2017), examined the impact of Accounting Information System Quality on Accounting Information Quality of Asia Cell Telecommunication Company in Iraqi Stock market. According to results, there is a significant relationship between accounting information systems quality and accounting information on Asia Cell Telecommunication Company. They believed that accounting information systems contribute completely to Asia Cell Telecommunication Company work.

The system reliability as quality of accounting information system which always assures that information is reasonably free from error and bias, is verifiable and faithfully represents what it purports to represent (Xu, 2009). Information system should maintain an agreement between the measure and description and the actual phenomenon which it purports to represent in order to have a faithful representation. In order to be verifiable, it should be possible to authenticate and confirm the information self-sufficiently.

Neutrality suggests on the one hand that the preparer of information is not biased towards a programmed result and on the other that the information is not reported in such manner that it may unduly influence the decisions of users in a particular direction (DeLone & McLean, 2003). Both the primary qualities of relevance and reliability are associated with the secondary quality of comparability. This quality of information requires that transactions and events be measured and reported in a consistent manner to enable users to compare the results of a company year in and year out or with the results of different companies.

2.4 Information Quality and Firm Performance

Accounting information systems are key and important to the formation of quality accounting information to provide precise and timely reports and the communication of that information to decision makers (Emad, 2017; Harash, Suhail, & Ahmed, 2014). “Information quality refers to the quality of the output produced by the accounting information system and is commonly measured using completeness, timeliness, accuracy, and relevancy” (Delone & Mclean, 2003, p 67). Therefore, this study defines information quality as the ability of the system to provide timely, accurate, relevant, and complete information to user for effective decision making.

A number of scholars have studied the relationship between information quality and firm financial performance and various conclusions have been made; (Ali & Younes, 2013; Mouzhi & Helfert, 2013; Romney & Steinbart, 2017; Harash, Suhail, & Ahmed, 2014).

Ali and Younes (2013), study integrated three theoretical model of information system. The result of the study indicated that information quality has positive correlation with organizational performance. The study additional revealed completeness and timeliness as the most important characteristics of information quality. The authors concluded that organizations must treat information as strategic assets and most implement strategies that would improve information quality.

A study done by Mouzhi and Helfert (2013), focused on the effects of information qualities on the decision making of a firm. The results revealed that information accuracy and completeness

significantly affect the decision quality. They further stated that high quality information increases productivity and enhanced decision making in organizations.

Harash, Suhail, & Ahmed (2014), studied the influence of accounting information systems on performance of SMEs in Iraq and found out that many SMEs use accounting information systems to collect more information to assist decision making performance which leads to improved efficiency and SMEs' profitability and performance there.

2.5 System Threats and Firm Performance

System threat simply refers to the barrier affecting information system operation of system to produce desired results**.** There are a number of studies who have studied the relationship between system threats and firm performance (Loch et al. 2012; Davis, 2008; Siponen, 2000; Wright & Wright, 2002; Hunton, Wright, & Wright, 2005)

One of the most important studies in this area was carried out by Loch et al. (2012). The researchers conducted a survey to investigate the perception of management information systems executives regarding the security threats in their computer systems. They came up with a summary and list of twelve security threats and empirically examined. The findings indicated that; employee unintentional actions (entry of bad data and destruction of data); unsanctioned access to computer accounting information system by hackers; inadequate control over media; and natural disasters were among the highest security threats. The greatest threats for management information systems come from inside organizations which confirmed the experts' claims from previous research.

The results of Davis' (2008), study also reported that employees' accidental entry of "bad" data and the accidental destruction of data, as well as the introduction of computer viruses, were among the top threats in a computer environment. However, unauthorized access to data and/or system by employees, and poor segregation of information system duties were rated as the major threats to the minicomputer environment. Concerning the mainframe computer environment, accidental entry of "bad" data by employees, natural disaster, and unauthorized access to data and/or system by employees were perceived as the main threats, while unauthorized access to data and/or system by both outsider (hackers) and insiders (employees), and technology advances faster than control practice were said to be the most important threats in network computer environment.

Siponen (2000), researched on organizational information security awareness program to minimize the end-user errors and to enhance the usefulness of applied security controls. He concluded that information security techniques or procedures would lose their real effectiveness and thus leading to a decline in firm performance if they were misused; misinterpreted; not used or not properly implemented by end-users.

Wright & Wright (2002), conducted an exploratory study to obtain an understanding of unique risks and threats associated with the implementation and operation of accounting information system. The study concluded that the information system initially lacked adequate controls and that data conversion was also poorly executed. The possibility for financial statement errors and business risks is further increased as a result of the lack of proper user training. They also concluded that the accounting information system was not running at its full potential and with

errors in the financial statements decision making was difficult leading to reduced firm performance.

Hunton, Wright, & Wright (2005), carried out an experiment study to understand, assess and examine the extent to which financial auditors and information systems (IS) audit specialists recognize differences in the nature and unique business and audit risks associated with accounting information systems, as compared to traditional manual accounting systems. The research findings found that financial auditors were meaningfully less troubled than information system audit specialists with the following heightened risks of the accounting information system environment in the experimental case: business interruption, network security, database security, application security, process interdependency, and overall control risk.

2.6 Summary of Literature Review and Literature Gap

From the literature review above, accounting information systems is of paramount importance in all organizations regardless of their industry, size or level of growth. Good accounting information systems will have a positive economic impact on the SMES in question as it can save them from various losses occasioned by frauds, corruption and similar irregularities. The literature establishes that good accounting information systems output and information results in better decision making and control over budgetary issues which in turn lead to improved firm performance. The studies cited in the literature above mostly concentrate on accounting information systems and firm performance of organizations of developed countries whose strategic approaches and accounting information systems are not similar to those of Uganda.

Nonetheless, in Uganda, some scholars have conducted a number research on accounting information systems and firm performance in the contexts of SACCOS, manufacturing firms, and service sector firms, but no comprehensive studies have been carried out on accounting information systems and firm performance in the context of SMEs. Therefore, the study intended to fill this gap by investigating the relationship between accounting information systems and firm performance of SMEs.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This section presents scientific and systematic steps that were taken in designing the study, execution and analysis of the study findings. This includes the research design, study population, sample size and selection, sampling techniques, data collection methods, data collection instruments, procedure of data collection, reliability and validity of instruments, data analysis, measurement of variables, data presentation and analysis and the limitations to the study.

3.1 Research design

A survey design was adopted in this study where data on all the variables under the study was be collected at a point in time. This design has been widely accepted and applied by many scholars (Xu, 2009; Fagbemi and Olaoye, 2016) and found it appropriate as it is effective to describe and explain a phenomenon and allows collection of a large amount of data from selected SMEs in Nakawa division. Furthermore, the study also deployed quantitative method that was explanatory in nature was used in generating numerical data through descriptive statistics that was statistically manipulated to explain the relationship between accounting information systems and firm performance of SMEs (Amin, 2005).

3.2 Study Population

The population for this study comprised Small and Medium Sized Enterprises which are registered under KCCA in Nakawa division only focusing on those operating from Nakawa division. This area of research is selected because Nakawa division was named among the divisions in Kampala that have struggling enterprises (NSBU, 2017). These SMES are engaging majorly in activities of

commerce, manufacturing and services. Basing on the information provided by KCCA Nakawa Municipal headquarters, there are 240 registered small and medium sized enterprises that are operating in sectors of service, trade and commerce and manufacturing which are widely spread and operate within the division. Therefore, the target population was constituted of 144 enterprises which operate from the division.

3.3 Sampling Size and Design

A sample size of 144 SMEs was selected from a population of 240 firms in Nakawa Division, basing on Krejcie and Morgan (1970) sample size determination model.

Table 1: Population and sample size

Industrial Area	**Population**	**Sample size**
Bugolobi	80	50
Ntinda	75	42
Nakawa	85	52
Total	**240**	**144 firms**

Source: Krejcie and Morgan (1970)

3.4 Sampling Technique Procedure

The SMEs were sampled using stratified sampling technique, where Nakawa Division was sub-grouped into industrial parks and samples will be selected from each sub-group as a unit of analysis. Purposive sampling was used to select the accountants and business owners as a unit of inquiry because they were believed to be more knowledgeable about the topic under investigation by virtue of the positions they held in the organization.

3.5 Data collection and source of Data

For primary data, survey data collection method was used in the study to collect quantitative data. Specifically, a structured self-administered questionnaire method was utilized to carry out a survey instrument. This method has also been used by other scholars to study and collect data on similar studies (Adenike, 2017, Xu, 2009, Trabulsi, 2018). The questions are mainly closed ended so as to increase quality responses and limit unnecessary and unsolicited responses from the participants.

For the qualitative data, a structured interview guide was used in order to collect more in-depth information underlying the issues under the study. The interview guide has open ended questions in order to enable the researcher explore more of the phenomenon.

3.6 Data Collection Instruments

Research instruments are simply mean devices for measuring variables of interest (Cooper & Schindler, 2014). The main research instrument was a structured questionnaire using nominal scale and a structured interview

3.6.1 Self-Administered Questionnaire

A structured questionnaire was used to collect the primary data about quality of accounting information and its relationship with firm performance. The questionnaire comprised closed ended questions based on existing theory in the literature. The questionnaire was divided into major sections namely; system quality, information quality, system threats and firm performance adopted from past studies and were adjusted to suit the objective of the study.

The responses were arranged on five-point Likert scale where ‘SA’ means ‘strongly agree’, ‘A’ means ‘agree’, ‘N’ means Neutral, ‘D’ means disagree, ‘SD’ means ‘strongly disagree’. This

enhanced simplicity where straight forward answers were required. Although questionnaires were self-administered and were distributed to the various managers, accountants and CEOs of SMEs who operate in Nakawa Division.

3.6.2 Interview Guide

Interviews are considered primary dat since they allow researchers collect qualitative information for a specific study (Cooper & Schindler, 2014). An interview guide was administered to collect qualitative data from the managers, accountants and business owners to provide in-depth information through probing during the face-to-face interview

3.7 Validity and Reliability of the instruments

3.7.1 Validity

Validity refers to the extent to which research results can be accurately interpreted and generated (Cooper & Schindler, 2014). Volgt (2007:117) explains it as "the truth or accuracy of the study". Content validity was determined by first discussing the items in the instrument with the supervisors and research experts. Thereafter the content validity index of 0.762 was computed using the methodology proposed by Croker et al (1986). The researcher ensured that questions were relevant in order to have meaningful and reliable results represented by the variables in the study.

$$\textbf{Content Validity Index (CVI)} = \frac{\textbf{Total Number of items rated by all respondents}}{\textbf{Total Number of items in the Instrument}}$$

3.7.2 Reliability of the Instrument

According to Hoffschwelle (2011), reliability results from a process that produces consistent, dependable, replicable findings and confirmed by previous studies. Vogt (2007) defines reliability as the consistency of a design or a measurement to give same conclusion if used by different

scholars or used to different times. The researcher ensured that clear operational definitions of the variables under the study are provided so that the internal consistency

Qualitative research bases on trustworthiness to ensure credibility of the study findings (Roxan et al, 2017). Rigor of qualitative research has been argued to equate to reliability and validity and all the necessary components of quality.

A research tool was subjected to a reliability test and according to Amin (2005) an alpha of 0.7 or higher is significant enough to show reliability of the instrument. The closer it is to 1 the higher the reliability.

Table 2: Summary of Cronbach's alphas test results

Variable	Cronbach's alpha	Cronbach's alpha standardized	No. of items
System quality	.705	.705	8
Information quality	.788	.788	6
System threats	.757	.757	8
Firm performance	.770	.770	8

The results in Table 2 show that Cronbach's alpha coefficient ranged between .788 (information quality) to .705 (system quality) as an indication that measurement scale used in the study were sufficiently reliable and adequately measured the variables for the study. System threats had .757 and firm performance had .770.

3.8 Data Collection Procedure

Before administration of questionnaires, an introduction letter was obtained from Kyambogo University after the validity of the research instruments. During the administration of questionnaires, the researcher briefed the respondents about the intentions to carry out a study on their businesses. The questionnaires were distributed to the respondents and asked them to answer the questions. After administration of questionnaires the researcher retrieved the questionnaires after 2 days and check for completeness of all answers. The questionnaires were then be arranged for data analysis

3.9 Measurement of Variables

The variables were measured using items adapted from existing empirical studies on dimensions of accounting information systems specifically; system quality, information quality and system threats and firm performance. Data on the respondent's views and opinions about accounting information system and organization performance were obtained using scaled variables from a self-developed questionnaire developed after review of related literature on the topic under investigation. A five point - Likert scale of 5 = strongly agree, 4 = agree, 3 = not sure, 2 = disagree and 1 = strongly disagree was used to tap respondents' attitudinal disposition on the study variables as suggested by Mugenda and Mugenda (2003). According to Mugenda and Mugenda (2003), the Likert type scale is the most commonly used rating scale in questionnaires.

3.10 Data Analysis

The data obtained from the field was in raw form and was cleaned, coded, and key-punched into a computer and analyzed.

3.10.1 Analysis of Quantitative Data

The statistical package which was used for analysis of data in this study was SPSS version 23.0. Different statistical techniques were used namely: descriptive and correlation analyses. The upper level of statistical significance for research question testing was at the 0.05 level of significance.

For Section A of the research study which contains demographic questionnaires, descriptive statistics like frequency counts and percentages was computed to document the demographic information of the respondents.

For Research objective one, system quality assessment and firm performance, object two, information quality assessment and firm performance and objective three, system threat and firm performance of SMEs in Nakawa division was analyzed first by finding the preliminary results

where descriptive statistic of mean and standard deviation tested to know the degree of relationship of the variables.

And finally, relationship test was done using Pearson Product Moment correlation. Pearson Product Moment correlation analysis technique was used to determine the relationship of each objective one, system quality assessment on firm performance, object two, information quality assessment on firm performance and three, the system threats assessment on firm performance of SMEs in Nakawa division. The upper level of statistical significance for hypothesis testing was at 0.05 level of significance. For examining the relationship of accounting information system on firm performance of SMEs in Nakawa division, Pearson Product Moment correlation analysis technique was used. The upper level of statistical significance for hypothesis testing was at 0.05 level of significance.

3.10. 2 Analysis of Qualitative Data

Qualitative data was analyzed using content analysis. Responses from key informants were grouped into recurrent issues. The recurrent issues which emerged in relation to each guiding question were to be presented in the results, with selected direct quotations from participants offered as illustrations as suggested by Mugenda and Mugenda (2003).

3.11 Ethical Considerations

The research process was guided by sound ethical principles which include the following: -

1. Voluntarism; the research team ensured that respondents are not coerced or manipulated into participating in the study. Respondents were told the purpose of the study and their consent to participate in the study was sought.
2. Objectivity; the research team ensured objectivity when carrying out the research any attempt to bias results is considered unethical and should therefore be avoided.
3. Confidentiality; the respondents were also be assured of confidentiality and anonymity. Their names were not written anywhere in the report and the information given was only used for academic purposes.
4. Respect; the research team ensured respect for the respondents. Respect was encompassed respecting the opinion of the respondents including the opinion to terminate the interview whenever they felt uncomfortable to continue, questioning style especially for very personal and sensitive questions.

3.12 Limitations of the Study

1. Instrumentation: the research instruments may not be standardized. Therefore, validity and reliability tests were done to produce a credible measurement of research variables
2. Testing: The use of research assistants can bring about inconsistency in the administration of the questionnaires in terms of administration, understanding of the items in the questionnaires and explanations given to the respondents. To minimize this limitation, the research assistants were oriented and verified on the procedure to be done in data collection

3. Attrition: Not all questionnaires maybe returned neither correctly answered nor even retrieved back due to circumstances on the respondents such as travels, sickness, hospitalization and refusal/withdrawal to participate. In anticipation of this, the researcher reserved more respondents by exceeding the minimum sample size

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.0 Introduction

This chapter deals with the presentation, analysis and interpretation of the study findings. The chapter begins with descriptive statistics of the study specifically system quality, information quality, system threats of SMEs in Nakawa division. Thereafter, the relationship between key variables of interest that is system quality, information quality, system threats and performance of SME firms. In the last section, the correlations analysis results are presented.

4.1 Response rate

Basing on stratified random sampling technique, a total of 144 respondent firms were selected and 144 questionnaires were administered to the out of which 108 were returned, giving a response rate of 75% which was a very good response rate. The high response rate was achieved mainly due to better data collection procedures, where the researcher and the assistants administered the questionnaires

4.2 Background Information

This section consists of information that describes both SME owners and accountants and SME firm characteristics.

4.2.1 Respondents characteristics

The key characteristics of the respondents in terms of gender, firm existence and the department in the firm

Table 3: Demographic features of respondents

Demographic Feature		
Gender	**Frequency**	**Percentage**
Female	52	48.1
Male	56	51.9
Total	**108**	**100.0**
Period of Existence of the Firm	**Frequency**	**Percentage**
1- 2 Years	33	30.6
3-5 Years	51	47.2
6 – 10 Years	22	20.4
11 – 15 Years	2	1.9
Total	**108**	**100.0**
Department where the respondent is working in the organization	**Frequency**	**Percentage**
Finance and Accounting Department	84	77.8
Logistic Department	3	2.8
Human Resource Department	1	.9
ICT Department	4	3.7
Program Department	2	1.9
Others	14	13.0
Total	**108**	**100.0**

Source: Primary data 2019

From Table 3, majority of the respondents in Nakawa division were male representing 51.9% as compared to the 52 males' respondents, represented by 48.1%. This implies that the study was majorly composed of male respondents.

In terms of period of existence of the firm, the majority of the respondents' firm 47.2% were within the existence of 3-5 years of existence. This means that the majority of the businesses had existed for a few years. This was followed by those in the existence bracket of 1-2 years, represented by

30.6%. There were a few more firms that existed between 6-10 years represented by 20.4%. Only 2 firms where in the bracket of 11-15 years. This implies that majority of SMES are startups.

In terms of department where respondent worked, 77.8% of the respondents work in the accounting and finance department, 13% was represented by other respondents who worked in other departments, 3.7% work in the ICT department, 2.8% work in the logistics department, 1.9% work in the program department and 0.9% work in the human resource department.

4.2.2 Firm characteristics

The key firm characteristics in terms of the industry where the firm operates in, the legal status of the business and the number of employees within the firm. The results of the analysis are presented in Table 4.

Table 4: Summary of firm characteristics

Industry where the business operates	**Frequency**	**Percentage**
Manufacturing	55	50.9
Service	37	34.3
Trade	16	14.8
Total	**108**	**100.0**
Legal status of the respondent's company	**Frequency**	**Percentage**
Private limited company	52	48.1
Public limited company	0	0.0
Sole proprietorship	39	36.1
Partnership	15	13.9
Joint venture	2	1.9
Total	**108**	**100.0**
Size of the company	**Frequency**	**Percentage**
1-20 employees	46	42.6
21-40 employees	43	39.8
41- 60 employees	8	7.4
61-80 employees	6	5.6
81-100 employees	3	2.8
Over 100 employees	2	1.9
Total	**108**	**100.0**

Source: Primary data, 2019

The results in Table 4 indicate that 55 (50.9%) of the firms in the sample operated in the manufacturing sector, 37 (34.3%) operated in the service sector and the remaining 16 (14.8%) deal in the trading sector.

As regards to the legal status of the business, the table indicates that the majority 52 (48.1%) are private limited companies, 39 (36.1%) are sole proprietorships, 15 (13.9%) are partnerships and the few 2 (1.9%) are joint ventures. This implies that SMEs are not publicly traded.

The table also shows that SMEs were based on the number of employees employed with a majority of the firms employ 1-20 employees 42.6% followed by those employing 21-40 employees 39.8%. few firms employ above 60 employees which is the remaining 11 firms accounting for 10.3%.

4.3 Descriptive statistics of study variables

4.3.1 Descriptive statistics for system quality

In the current discussion on the accounting information systems used by SMEs in Uganda, system quality has been widely featured with a lot of speculation. Table 5 below, present's evidence on how different users of AIS included in the study perceived the system quality of the AIS.

Specifically, the evidence collected focused on seven areas namely: safe data storage and retrieval, verification before accessing the system, ease of use in terms of meeting user requirements, technical efficiency which reduces programming error, interconnects the reporting activities of different functional areas, separate budget for renewals and maintenance for the AIS, AIS is reliable and AIS is response time is fast.

Table 5: System quality assessment of AIS in SMEs of Nakawa Division

Elements of system quality	*Mean*	*Std. Dev*
In our firm the AIS has safe data storage and retrieval	4.17	0.541
In our firm the AIS allows users to verify before accessing the system	4.43	0.585
In our firm the AIS is provides ease of use in terms of meeting user requirements	4.13	0.753
In our firm the AIS has technical efficiency which reduces programming error	3.96	0.8
The AIS in our firm interconnects the reporting activities of different functional areas of our business	3.51	1.144
In our firm there is a separate budget for renewals and maintenance for the AIS	3.3	1.205
In our firm the AIS is reliable	4.42	0.583
In our firm the AIS is response time is fast	4.41	0.726
Overall mean	4.04	

Note: These items were measured on a five-point Likert scale where 5=Strongly agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly disagree, indicating the degree to which individual scores by respondents are far from the mean.

As shown in Table 5, the findings reveal that generally, AIS users see that the system quality of the AIS is above average on the scale of 1 to 5. It can however be seen that there are notable variations on the various forms of system quality of AIS evaluated. For example, in terms of if a firm has a separate budget for renewals and maintenance for the AIS the score by the respondents was 3.3 with standard deviation of 1.205. In relation to all the other aspects of system quality this constituted the least score and this means that firms do not have a separate budget for renewals and maintenance for the AIS.

The second lowest aspect with the mean score of 3.51 was the extent to which AIS in the firm interconnects the reporting activities of different functional areas of the business. This means that many firms' AIS do not interconnect the reporting activities of different functional areas of the

business. Those elements of system quality on which AIS users scored moderately is, AIS has technical efficiency which reduces programming error (Mean=3.96, S. D= 0.8).

In the sample, the aspects were system quality was considered to be highest were, AIS allows users to verify before accessing the system (Mean= 4.43, S.D= 0.585) with AIS is reliable (Mean= 4.42, S.D= 0.583)coming in the second place and AIS is response time is fast (Mean= 4.41, S.D= 0.726). Generally, the standard deviation statistics are not very high indicating reasonable validity of the reported mean values. This means that the AIS system quality of different firms are very high with regard to that AIS output information is confidential and used for firm decision making.

This is consistent with interview results which revealed that *in the SMEs system quality is one of the aspects that is emphasized in the operation of the small and medium enterprise's and many SMEs stress how much a good system quality is. Another interviewee indicated that SMEs are expected to have a good system quality*. This can be seen from the quantitative analysis above in table 5 where the reported system quality is moderately high which implies that the SMEs emphasize commitment to system quality.

4.3.2 Descriptive statistics for variable information quality

Table 6: Information quality assessment of accounting information systems in SMEs of Nakawa division

Elements of Information Quality	***Mean***	***Std. Dev***
In our firm the AIS produces relevant information for decision making	4.16	0.479
In our firm the AIS is effective enough to produce accurate information	4.25	0.702
In our firm the AIS produces complete information for decision making	4.46	0.648
In our firm the AIS protects sensitive information from unauthorized disclosure	4.33	0.724
In our firm the AIS produces information that's is applied consistently from one period to another	3.9	1.081
In our firm the AIS produces timely information for effective decision making	4.38	0.76
Overall mean	4.25	

Note: These items were measured on a five-point Likert scale where 5=Strongly agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly disagree, indicating the degree to which individual scores by respondents are far from the mean

Evidence in the Table 6 above shows that the majority of AIS information output is complete for decision making with (Mean= 4.46, S. D= 0.648). Followed by the AIS protects sensitive information from unauthorized disclosure (Mean= 4.33, S. D= 0.724). The AIS produces relevant information for decision making, effective enough to produce accurate information, timely information for effective decision making all scored above average (Mean=4.16, S. D=0.479, Mean= 4.25, S. D= 0.702, Mean= 4.38, S. D= 0.76) respectively. On the other hand, AIS produces information that's is applied consistently from one period to another indicate the least occurrence when it came to information quality (Mean= 3.9, S. D= 1.081)

In summary, the standard deviation statistics are not very high indicating reasonable validity of the reported mean values based on the table above, majority of the means are above 4 meaning that the accounting information systems produce quality information.

This is consistent with interview results which revealed that *in the SMEs information quality is one of the aspects that is emphasized in the operation of the small and medium enterprise's and many SMEs stress how accurate information quality is to the business. Another interviewee indicated that SMEs are expected to have truthful information quality so as to help in decision making*. This can be seen from the quantitative analysis above in table 5 where the reported system quality is moderately high which implies that the SMEs emphasize commitment to system quality.

4.3.3 Descriptive statistics for variable system threats

Table 7: System threats assessment of AIS in SMEs of Nakawa division

Elements of System Threats	***Mean***	***Std. Dev***
In our firm the AIS often experience system failure	2.95	1.111
In our firm the AIS requires 24/7 internet	2.44	1.109
In our firm the AIS experience unauthorized access into the system by employees of the organization	1.86	0.946
In our firm the AIS experience unauthorized access into the system by outsiders (hackers)	2.07	0.85
In our firm the AIS users in the Organization uses the same passwords	1.65	0.704
In our firm the AIS experiences intentional destruction of data by employees of organization	1.81	0.754
In our firm the AIS experience interception of data transmission from remote location	2.25	0.837
In our firm the AIS always creates fictitious reports	1.51	0.65
Overall Mean	2.02	

Note: These items were measured on a five-point Likert scale where 5=Strongly agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly disagree, indicating the degree to which individual scores by respondents are far from the mean

As indicated in table 7 above, most respondents found that the accounting information system should not produce fictitious reports with a very low mean= 1.15 and S. D= 0.65, meaning that the processing of data should be adequate enough to produce accurate reports. Intentional destruction of data by employees of organization comes in second with a mean= 1.81 and S. D= 0.754 meaning that the data from the accounting information system should not be intentionally destroyed by employees of organization.

In summary, the standard deviation statistics are not very high indicating reasonable validity of the reported mean values based on the table above, majority of the means are below 3 meaning that the accounting information systems need to prevent these system threats in order to perform accurately.

4.3.4 Descriptive statistics for variable firm performance

Table 8: Firm performance assessment of SMEs in Nakawa division

Statement	Mean	Std. Deviation
Our firm has realized cost saving since it started using an AIS	3.99	0.72
Our firm is able to generate automated reports since it started using AIS	4.44	0.647
Our firm realizes employee's knowledge and learning experts' skills since it started using an AIS	3.95	0.77
Our firm achieves enhanced efficiency and capability in its operations since it started using an AIS	4.07	0.663
The AIS helps our firm to improve firm effectiveness and competitiveness increase	4.21	0.697
Our firm achieves internal budgetary control since it started using an AIS	3.92	0.802
Our firm has realized effective inventory management which improves customer service since it started using an AIS	4.36	0.706
Our firm achieves improvement in decision making since it started using an AIS	4.44	0.755

Note: These items were measured on a five-point Likert scale where 5=Strongly agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly disagree, indicating the degree to which individual scores by respondents are far from the mean

The results in Table 8 are mean responses of items regarding firm performance (OP). The results reveal that concerning whether the SMEs achieves improvement in decision making and is able to generate automated reports since it started using AIS, this were both ranked the highest with (mean = 4.444, std. dev. = 0.755,0.647). This means that AIS information improves decision making with little time wasted.

When it came to whether the SMEs have realized effective inventory management which improves customer service since it started using an AIS, most of the respondents were in that agreement. (Mean= 4.39, S. D=0.706)

In summary, the standard deviation statistics are not very high indicating reasonable validity of the reported mean values based on the table above, majority of the means are above 4 meaning that the performance of SMEs in Nakawa division has improved since it started using accounting information systems.

4.4 The relationship between system quality, information quality, system threats and firm performance

A correlation analysis was carried out in order to investigate the relationship between the construct of AIS that is system quality, information quality and system threats and firm performance. These investigations were carried out to also achieve the objectives of the study. Table 9 shows the study shows the relationships between the variables based on Pearson coefficient statistic.

Table 9: Pearson's Product Moment correlation analysis relationship between study variables

Variables	**1**	**2**	**3**	**4**
System Quality (1)	1			
Information quality (2)	.400**	1		
System Threats (3)	-.157	-.357	1	
Firm performance (4)	.264**	.384**	-.218*	1

N=107, *P<0.05, **P<0.01

4.4.1 Relationship between System quality and firm performance of SMEs in Nakawa division

The first objective of the study was to examine whether there is a relationship between system quality and firm performance of SMEs in Nakawa division. To achieve this objective, the researcher applied Pearson's Product Moment Correlation, and used the results to test the null hypothesis that there is no significant relationship between system quality assessment and firm performance of SMEs. The hypothesis was tested at 0.01 level of significance and rejected when sig. value is greater than 0.01.

Table 9 above presents the findings on the relationship between System quality and firm performance of SMEs in Nakawa Division using Pearson Product Moment Correlation. The findings revealed that there is a positive relationship (26.4%) between system quality and firm performance of SMEs in Nakawa Division. The positive association between system quality and firm performance is significant at 1% level of significance ($p<0.006$). The findings imply that an

improvement in the quality of the accounting system results into a significant improvement in the firm performance of SMEs in Nakawa Division.

4.4.2 Relationship between information quality assessment and firm performance of SMEs in Nakawa division.

The second objective of the study was to establish whether a relationship exists between information quality and firm performance SMEs in Nakawa division. To achieve this objective, the researcher applied Pearson Product Moment Correlation, and used the results to test the null hypothesis that there is no significant relationship between information quality assessment and firm performance of SMEs in Nakawa division. The hypothesis was tested at 0.001 level of significance and rejected when sig. value is greater than 0.01.

The study outcomes in Table 9 on the relationship between information quality and firm performance revealed that there is a positive relationship (38.4%) between information quality of the accounting system and firm performance of SMEs in Nakawa Division. It is also evident from the above table that the relationship between information quality of the accounting system and firm performance is significant since the p-value (0.000) is less than the 1% level of significance. The results imply that an increase in the quality of information produced by an accounting system results into a significant increase in the performance of SMEs in Nakawa Division.

4.4.3 Relationship between system threats assessment and firm performance of SMEs in Nakawa division.

The third objective of the study was to find out if there is a relationship between system threats and firm performance of SMEs in Nakawa division. To achieve this objective, the researcher applied Pearson's Product Moment Correlation, and used the results to test the null hypothesis that

there is no significant relationship between system threats and firm performance of SMEs in Nakawa division. The hypothesis was tested at 0.05 level of significance and rejected when sig. value is greater than 0.005.

The results in table 9 above show that there exists a negative relationship (-21.8%) between System threats and firm performance of SMEs in Nakawa Division. The negative association is significant since it is evident that the p-value (0.024) is less than the 0.05 level of significance. The results imply that when there is reduction in threats on the accounting system will lead to a significant improvement in the performance of SMEs in Nakawa Division. The findings also mean that an increase in threats on the accounting system will result into a significant fall in the performance of SMEs in Nakawa Division.

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSION AND RECOMMENDATIONS OF THE STUDY

5.0 Introduction

This chapter presents the discussion of findings, summary, conclusion and recommendations of the study that examined the relationship between accounting information systems and firm performance of SMEs in Nakawa division. It also explains the relationship between system quality and firm performance, the relationship between information quality and firm performance and the relationship between system threats and firm performance. Finally, the chapter presents discussions on how the study findings relate to existing theory and findings from the empirical studies.

5.1 Summary of Findings

The aim of the study was to find out the relationship between accounting information systems and firm performance. The study measured the accounting information systems based on the various dimensions, including, system quality, information quality, and system threats.

The findings of the study indicated that the AIS used by SMEs in Nakawa division in Uganda are quality systems. The researcher evaluated various characteristics of an information system. These characteristics included ease of use, system flexibility, system reliability, ease of learning, as well as system features of completeness, accuracy, flexibility, and response times. The findings further indicated that the quality of information was guaranteed. The results indicated that the outputs from AIS were clear, accurate, and timely.

The results of the study indicated that staff utilizes the capabilities of AIS. The results show that the accounting information systems of the SMEs are updated regularly and contain accurate information. The findings further indicated that AIS contribute to the success of the small and medium enterprises. Some of the benefits included improved decision-making, improved effectiveness, improved efficiency, cost reductions, improved inventory management, automated reports, and internal budgetary controls.

The study sought the system threats faced when by the AIS. The findings indicated that the major threats were the AIS often experiences system failure, the AIS experiences unauthorized access into the system by outsiders(hackers), and the AIS requiring 24/7 internet as some of the threats they face. Further, the results indicated that the AIS often experiences system is a major threat of using the AIS. The results indicated that when the respondents were using the AIS, its experienced system failure and lost some work in the process and a number of transactions are cut short. This causes a delay in decision making and also money must be put aside for the repair and experts of the AIS.

The findings of this study indicate that AIS is an important mechanism of a firm that is vital for effective management decision-making and controlling a firm. The results are consistent with empirical reviews which indicated that there exists a relationship between AIS and firm performance. AIS are an effective decision-making tool for controlling and coordinating the activities of an organization. The findings also indicate that an effective AIS effectiveness and efficiency throughout the firm. The top management team with various planning and management information system influences on strategic performance of the organization

5.2 Discussion of findings

5.2.1 The relationship between system quality and firm performance

Objective one of this study sought to examine the relationship between system quality and firm performance of SMEs, a correlation analysis was carried to to determine the relationship between system quality and firm performance. The study established that there was a positive and significant relationship between system quality and firm performance of SMEs in Nakawa division. The findings revealed that system quality is related to firm performance by 26.4% at 1% level of significance ($p<0.006$). A high level of system quality was revealed with an average mean of 4.04. The findings imply that an improvement in the quality of the accounting system results into a significant improvement in the firm performance of SMEs in Nakawa Division. System quality included accounting information system has safe data storage and retrieval, allows users to verify before accessing the system, provides ease of use in terms of meeting user requirements, has technical efficiency which reduces programming error, interconnects the reporting activities of different functional areas of our business, there is a separate budget for renewals and maintenance for the accounting information system, is reliable and response time is fast.

The results are consistent with extant literature and previous studies that suggested system quality is associated to firm performance. Extant literature concludes that system quality is positively related to firm performance. Actually, system quality is seen as a degree of technical efficiency of the system, in terms of user interface consistency, ease of use, documentation quality, programming error and maintainability of the system (DeLone & McLean, 2003).

This is consistent with Shagari, Abdullah, & Saat (2015), whose results found that system quality and is positively related to AIS effectiveness. They opined that the findings of their study would

assist banks management in understanding the determinants of AIS effectiveness, thereby enhancing their operational activities and decision making.

The findings where also in agreement with Algrari & Ahamed (2017), who found that there is a significant relationship between accounting information systems quality and accounting information on Asia Cell Telecommunication Company. They believed that accounting information systems contribute completely to Asia Cell Telecommunication Company work. Conclusively, the system reliability as quality of accounting information system which always assures that information is reasonably free from error and bias, is verifiable and faithfully represents what it purports to represent (Xu, 2009).

In confirming that system quality enhances firm performance of SMEs in Nakawa division, the study achieved the objective one of establishing that system quality significantly and positively in firm performance.

5.2.2 The relationship between information quality and firm performance

Objective two of this study sought to establish the relationship of information quality and firm performance. A correlation study was out to determine the degree of relationship between information quality and firm performance. Information quality was measured on aspects such as accounting information system produces relevant information for decision making, effective enough to produce accurate information, produces complete information for decision making, protects sensitive information from unauthorized disclosure, produces information that's is applied consistently from one period to another and produces timely information for effective decision making.

The study established that there was a positive and significant relationship between information quality and firm performance of SMEs in Nakawa division. The findings revealed that information quality related to firm performance by 38.4% at 1% level of significance ($p<0.000$). A high level of information quality was revealed with an average mean of 4.25. This implies that an increase in the quality of information produced by an accounting system results into a significant increase in the performance of SMEs in Nakawa Division.

The results of the study are consistent with extant literature and previous studies that suggested that information quality is associated with firm performance. Extant literature concludes that information quality is positively related to firm performance. Such as Ali and Younes (2013), concluded that information quality has positive correlation with organizational performance. The study further revealed completeness and timeliness as the most important characteristics of information quality. The authors concluded that organizations must treat information as strategic assets and most implement strategies that would improve information quality.

The findings were also supported by Mouzhi and Helfert (2013), who studied the effects of information qualities on the decision making of a firm. A conclusion was reached that information accuracy and completeness significantly affect the decision quality. They further stated that high quality information increases productivity and enhanced decision making in organizations.

Conclusively, accounting information system information (output) depends on the quality of data, garbage in garbage out is the result of poor data quality, and therefore data quality is important to AIS. Maintenance of sound accounting records is a major factor that contributes proper decision-

making process since it's the root through which relevant informational requirements is derived (Romney & Steinbart, 2017).

In confirming that information quality improves firm performance, the study achieved the objective two of establishing that information quality significantly and positively predicts firm performance

5.2.3 Relationship between system threats and firm performance

Objective three of this study sought to examine the relationship between system threats and firm performance. To achieve this, a correlation analysis was carried to determine the degree of relationship between system threats and firm performance. System threats was measured on aspects such as the accounting information system often experience system failure, requires 24/7 internet, experiences unauthorized access into the system by employees of the organizations, experiences unauthorized access into the system by outsiders (hackers), users in the Organization uses the same passwords, experiences intentional destruction of data by employees of organization, experiences interception of data transmission from remote location and always creates fictitious reports.

The findings revealed that system threats is negatively related to firm performance by -21.8% at p-value (0.024) is less than the 0.05 level of significance. From the study a low level of system threats was revealed with an average mean of 2.02. This implies mean that an increase in threats on the accounting system will result into a significant fall in the performance of SMEs in Nakawa Division.

The results are consistent with the extant literature and previous studies that suggest that system threats are negatively associated with firm performance. Extant literature concludes that a system threat is negatively related to firm performance. System threats simply refer to the barrier affecting information system operation of system to produce desired results **(**Loch et al. 2012).

The results of Davis' (2008), study also reported that employees' accidental entry of "bad" data and the accidental destruction of data, as well as the introduction of computer viruses, were considered to be the three top threats in a microcomputer environment when using accounting information systems. They came to the conclusion that system threats are negatively associated with firm performance.

This is consistent with Siponen (2000), who introduced an organizational information security awareness program to minimize the end-user errors and to enhance the usefulness of applied security controls. He concluded that information security techniques or procedures would lose their real effectiveness and thus leading to a decline in firm performance if they were misused; misinterpreted; not used or not properly implemented by end-users.

Wright & Wright (2002), conducted an exploratory study to obtain an understanding of unique risks and threats associated with the implementation and operation of accounting information system. The study concluded that the information system initially lacked adequate controls and that data conversion was also poorly executed. The potential for financial statement errors and business risks is further intensified as a result of the lack of proper user training. They also concluded that the accounting information system was not running at its full potential and with

errors in the financial statements decision making was difficult leading to reduced firm performance.

In confirming that system threats influence the level of firm performance, the study achieved the objective three of establishing that system threats significantly and is negatively associated to firm performance.

5.3 Conclusion

The purpose of the study was to determine the relationship between accounting information systems and firm performance of SMEs Nakawa division and this was achieved when findings demonstrated a positive significant relationship of accounting information systems and firm performance, therefore accounting information systems when used properly, there is enough evidence basing on this study that performance of SMEs will significantly improve. Precisely, three specific objectives were derived from the main objectives. A correlation analysis was done and various conclusions were drawn.

Based on the evidence from the study, it can be concluded that accounting information systems are critical to the production of quality accounting information on a timely basis and ensures that all levels of management get sufficient, adequate, relevant and true information for planning and increases the control and enhances the performance of a firm. Financial managers need the financial and accounting data provided by AIS to evaluate the firm's past performance and to map out future plans.

This study showed that there is strong relationship between accounting information system and firm performance, which means access to accounting information, will lead to better firm

performance. Therefore, it can be concluded that accounting information systems has relationship with the performance of SMEs.

5.4 Recommendations

Small Business Enterprises (SMEs) play an important role in the economic development of Uganda by providing employment and production of goods and services. However, the extent of contribution that these business entities make to towards the economic growth and development of Uganda is dependent on the level of success attained through their operations.

SMEs need a well-designed and operating accounting information system to enable them manage its most valuable resource which is information. This can be a manual or an automated system such as Tally, MYOB and Quickbooks among others. The system will manage the day to day transactions of the firm so as to inform the owner about the performance and growth of the business.

Moving forward, based on the AIS chosen emphasis should be put on system threats in a firm. Where accountants and business owners must put in place security measures like anti viruses, training and creating a culture of security so as to avoid attacks on the AIS which leads to loss of data and valuable accounting information.

To conclude it, SMEs are currently facing a major issue that is not only hindering their success rate, but in a slow manner, breeds low economic development, which is not, by any means a positive outcome. As soon as SMEs implement the above-mentioned recommendations, the result will guide the firms towards sustainability, and growth, which is essentially the core idea behind this recommendation.

5.5 Suggestions for further research

While the study has made a number of suggestions and made an attempt to generate reliable evidence, the findings of the study should be interpreted in light of the following limitations. First the sample size was small. This is because of the small budget and unwillingness to some SME owners and accountants to participate in the study. therefore, further research needs to increase the sample size.

The study on focused on SMEs in Nakawa division and left out the rest of Ugandan SMEs. Therefore, further research may look at other SMEs from all over Uganda.

The study was not based on any moderating or intervening variables. Further research should include more moderating and intervening variables to test whether accounting information systems still strongly predicts firm performance. Testing of additional variables would enhance the robustness of the study models as well as the generalizability and validity of results.

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APPENDICES

APPENDIX 1: SURVEY QUESTIONNAIRE

Dear respondent,

This is an academic study investigating accounting information systems and firm performance in Uganda. This study is carried out under supervision of Department of Management Science, School of Management and Entrepreneurship, Kyambogo University.

The researcher kindly requests you to share your experience and knowledge in this study. The information you share will be treated with utmost confidentiality and only used for this study purposes. You are kindly requested to spare some time and respond to the questions below. Should you require any additional information or wish to receive the findings for the study please contact the researcher on the following address or contacts

Tel +256776504081

Email: yangmaureen22@gmail.com

SECTION A

DEMOGRAPHIC FEATURES (Please tick the appropriate answer)

a) Gender

1. ( ) Female
2. ( ) Male

b) How long has this organization existed?

1. ( ) 1- 2 Years
2. ( ) 3-5 Years
3. ( ) 6 – 10 Years
4. ( ) 11 – 15 Years

c) Which department are you working in the organization?

1. ( ) Finance and Accounting Department
2. ( ) Logistic Department
3. ( ) Human Resource Department
4. ( )ICT Department
5. ( )Program Department
6. ( ) Others

d) In which industry does your business operate in?

1. ( ) Manufacturing
2. ( )Service
3. ( )Trade

e) What is the legal status of your company?

1. ( ) Private limited company
2. ( ) Public limited company
3. ( ) Sole proprietorship
4. ( ) Partnership
5. ( ) Joint venture

f) What is the size of your company?

1. ( ) 1-20 employees
2. ( ) 21-40 employees
3. ( ) 41- 60 employees
4. ( ) 61-80 employees
5. ( )81-100 employees
6. ( ) Over 100 employees

SECTION B: SYSTEM QUALITY ASSESSMENT

Please respond to the following statements by indicating the extent to which you agree or disagree as per the given choices

		5	4	3	2	1
	SYSTEM QUALITY ASSESSMENT	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	In our firm the accounting information system has safe data storage and retrieval					
2	In our firm the accounting information system allows users to verify before accessing the system					
3	In our firm the accounting information system is provides ease of use in terms of meeting user requirements					
4	In our firm the accounting information system has technical efficiency which reduces programming error					
5	The accounting information system in our firm interconnects the reporting activities of different functional areas of our business					
6	In our firm there is a separate budget for renewals and maintenance for the accounting information system					
7	In our firm the accounting Information system is reliable					
8	In our firm the accounting information system is response time is fast					

SECTION C: INFORMATION QUALITY ASSESSMENT

Please respond to the following statements by indicating the extent to which you agree or disagree as per the given choices

		5	4	3	2	1
	INFORMATION QUALITY ASSESSMENT	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	In our firm the Accounting Information System produces relevant information for decision making					
2	In our firm the accounting information system is effective enough to produce accurate information					
3	In our firm the accounting information system produces complete information for decision making					
4	In our firm the accounting information system protects sensitive information from unauthorized disclosure					
5	In our firm the accounting information system produces information that's is applied consistently from one period to another					
6	In our firm the accounting information system produces timely information for effective decision making					

SECTION D: SYSTEM THREAT ASSESSMENT

Please respond to the following statements by indicating the extent to which you agree or disagree as per the given choices

		5	4	3	2	1
	SYSTEM THREAT ASSESSMENT	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	In our firm the Accounting information system often experience system failure					
2	In our firm the Accounting Information system requires 24/7 internet					
3	In our firm the Accounting Information system experience unauthorized access into the system by employees of the organization					
4	In our firm the Accounting information system experience unauthorized access into the system by outsiders (hackers)					
5	In our firm the Accounting information systems users in the Organization uses the same passwords					
6	In our firm the Accounting information systems experiences intentional destruction of data by employees of organization					
7	In our firm the Accounting information system experience interception of data transmission from remote location					
8	In our firm the Accounting Information system always creates fictitious reports					

SECTION E: FIRM PERFORMANCE ASSESSMENT

Please respond to the following statements by indicating the extent to which you agree or disagree as per the given choices

		5	4	3	2	1
	FIRM PERFORMANCE ASSESSMENT	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Our firm has realized cost saving since it started using an accounting information system					
2	Our firm is able to generate automated reports since it started using an accounting information system					
3	Our firm realizes employee's knowledge and learning experts' skills since it started using an accounting information system					
5	Our firm achieves enhanced efficiency and capability in its operations since it started using an accounting information system					
6	The accounting information system helps our firm to improve firm effectiveness and competitiveness increase					
7	Our firm achieves internal budgetary control since it started using an accounting information system					
8	Our firm has realized effective inventory management which improves customer service since it started using an accounting information system					
9	Our firm achieves improvement in decision making since it started using an accounting information system					

APPENDIX II: INTERVIEW GUIDE

1. Please share with me about the small and medium enterprise that your mange.

Probe areas: The history of the firm, the activities conducted, nature of the business, past and present activities and achievements achieved.

2. Please hare with me if your firm uses an accounting information system and what makes it very effective

Probe areas: The use of AIS and how its effectiveness affects the firm

3. Please share with me the impacts of accounting information system on your firm's performance
4. In your opinion is there any relationship between accounting information system and firm performance since you have been using some system in your organization
5. Please let me know the threat's faced while using the accounting information system in your firm.

THANK YOU

APPENDIX III: LIST OF SMES SAMPLED

No.	Name of SME	Location	No.	Name of SME	Location
1	Monaco Cosmetics	Nakawa	25	Spring Pharmacy	Ntinda
2	Silverbacks Pharmacy	Nakawa	26	Kobe General Stores	Ntinda
3	Yuppy Clothing	Nakawa	27	Shop and Go Supermarket	Ntinda
4	Tasty Suggestions Bakery	Nakawa	28	Goodlife Pharmacy	Ntinda
5	Keay Home and Electronics	Nakawa	29	Norex Textiles	Ntinda
6	Clan Nas Kitchen	Nakawa	30	Safescript Pharmacy	Ntinda
7	My Home Sanitary ware	Ntinda	31	Alpha Laboratory	Ntinda
8	Fresh Basket Products	Ntinda	32	Tal Forex Bureau	Ntinda
9	Rumi's Bakery and Cakeshop	Ntinda	33	Frienship Groceries	Ntinda
10	Jojo's Royal Restaurant	Ntinda	34	Kyaligonza Garments	Ntinda
11	T Star Restaurant	Ntinda	35	Ntinda Phone Centre	Ntinda
12	Dinaz Restaurant	Ntinda	36	Suziola Pharmacy	Ntinda
13	Icon Pharmacy	Ntinda	37	Harrio House and Saloon	Ntinda
14	Eretha Pharmacy	Ntinda	38	MF Foods and Restaurant	Ntinda
15	Daren Pharmacy	Ntinda	39	Blue Mountain Club	Ntinda
16	Pioneer Electrical Fence Ltd	Ntinda	40	Ntinda Depot	Ntinda
17	KMT Furniture	Ntinda	41	Mainstop Supermarket	Ntinda
18	Abba and Co. Ltd	Ntinda	42	AM Electrical Store	Ntinda
19	Namanya Furniture	Ntinda	43	Sunny China Supermarket	Ntinda
20	Divine Furniture	Ntinda	44	Bukos Limited	Ntinda
21	Ibiza Spa and Lounge	Ntinda	45	Oskan Foods	Ntinda
22	WKK Metal Works	Ntinda	46	Smart Options Dry Cleaners	Ntinda
23	Grace Dental Care and Clinic	Ntinda	47	Del Peaceful Shopping Centre	Ntinda

24	Ntinda Engineering Works and Metal Fabricators	Ntinda	48	CVS Supermarket	Ntinda
49	Blossom Beauty Palour	Ntinda	83	Jazz Supermarket	Bugolobi
50	KY Supermarket	Ntinda	84	Paliv Spices	Bugolobi
51	Divine Healing Health club	Ntinda	85	Mandarin Spa and Food Centres	Bugolobi
52	Balamory Early Learning Centre	Ntinda	86	Family Bar and Restaurant	Bugolobi
53	Pinnacle Concepts Ltd	Nakawa	87	Athens Suites and Breakfast	Bugolobi
54	Nim Medical Centre and Pharmacy	Nakawa	88	Cosy Cottage Bugolobi	Bugolobi
56	Indulge Maternity Spa	Ntinda	89	Donatos Kitchen	Bugolobi
57	Midway Hotel	Ntinda	90	Tamu	Bugolobi
58	Le Pre-Cafe	Ntinda	91	Shaka Zulu Foods	Bugolobi
59	Tiki Cafe	Ntinda	92	Shoe Store Bugolobi	Bugolobi
60	Pick and Save Supermarket	Ntinda	93	Masaa	Bugolobi
61	Becca's Baby and Kid's Store	Ntinda	94	Reggie Vee Lingerie and Jewellery	Bugolobi
62	Infinity Café and Lounge	Ntinda	95	Terranga Restaurant and Bar	Bugolobi
63	The Food Parlor	Nakawa	96	Fideli Adevertising	Bugolobi
64	Lee Chinese Massage Centre	Bugolobi	97	Indian Tadka	Bugolobi
65	Jazz Ville	Bugolobi	98	Heritage Bar and Grill	Bugolobi
66	The Face Studio	Bugolobi	99	Heavenly Spa and Saloon	Bugolobi
67	Nimaro Restaurant and Coffee Shop	Bugolobi	100	Urban Yogi Wellness Studio	Bugolobi
68	Apple Bar	Bugolobi	101	Forks and Spoons	Bugolobi
69	The Base Bar and Restaurant	Bugolobi	102	Pizza Italia	Bugolobi
70	Café Montana	Bugolobi	103	Panama Guest House	Bugolobi
71	Victoria Supermarket	Bugolobi	104	Humidor	Bugolobi
72	Bodywise Fitness	Bugolobi	105	A and S Electronics	Bugolobi
73	Nyumvani Tena	Bugolobi	106	Birdnest	Bugolobi

74	Aisha's Boutique	Bugolobi	107	Go Fish Bugolobi	Bugolobi
75	Pacino's Restaurant Bar and Grill	Bugolobi	108	Greasy Spoon	Bugolobi
76	Canaopy Restaurant	Bugolobi			
77	Mango Grove	Bugolobi			
78	Royal Fort	Bugolobi			
79	Bellacasa Pizzeria	Bugolobi			
81	Olive Gardens	Bugolobi			
82	Pocket Friendly Supermarkets	Bugolobi			

APPENDIX IV: TABLE FOR SAMPLE SIZE DETERMINATION

Population size	Sample size	Population size	Sample size	Population size	Sample size
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Krejcie, Robert V., Morgan Daryle W., ***"Determining Sample Size for Research Activities",*** Educational and Psychological Measurement, 1970