FACTORS AFFECTING ADOPTION OF COMPUTERIZED ACCOUNTING SYSTEMS BY SMALL AND MEDIUM SIZED MANUFACTURING FIRMS IN NAIROBI COUNTY

BY

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DECLARATION

I declare that the work in this dissertation has not been previously published or submitted elsewhere for award of a degree. I also declare that this my own original work and contains no material written of published by other people except where due reference is made and author duly acknowledged.

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Signed: _____ **Date: _____**

I do hereby confirm that I have examined the master's dissertation of

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ABSTRACT

The use of computerized accounting systems (CAS) helps ensure that any firm produces reliable financial reports that simplify and improve the effectiveness of aggregate accounting processes and procedures. Manufacturing companies face barriers to the implementation of accounting systems due to internal and external factors. Some of the failures of industrial companies is due to the inability of businesses to obtain accounting reporting structures. The implementation of a computerized accounting system plays a very important role in enabling consumers of financial information to achieve their financial objectives. The study aimed at evaluating the factors that affected adoption computerized accounting system by medium and small sized manufacturing firms in Nairobi County. The study was guided specifically by the following objectives; To determine extent to which accounting expertise affected adoption of computerized accounting system in by medium and small sized manufacturing firms in Nairobi County, To examine extent to which technological change affected adoption of computerized accounting system by medium and small sized manufacturing firms in Nairobi County and To establish the extent to which cost affected adoption of computerized accounting system adoption by medium and small sized manufacturing firms in Nairobi County. A descriptive research design was adopted in the study. Data collection was carried out using the primary approach and the standardized questionnaire was administered personally. The data collected was analyzed using Stata. The population for this study was small and medium sized manufacturing companies in the county of Nairobi. The study used a survey of 181 manufacturing firms. Robust regression analysis was used as a statistical method to estimate the relationship that occurred. The results indicated that accounting expertise, cost and technological change affected the adoption of computerized accounting systems by medium and small sized manufacturing firms in Nairobi County. The study recommended that owners and managers of small and medium sized manufacturing firms should consider accounting expertise, cost and technological change in order to bring efficiency and effectiveness in their firms through providing accurate and reliable reports to users of financial information.

Keywords: Computerized accounting systems, manufacturing firms, medium sized firms and small sized firms

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DEDICATION

I dedicate this work to my family and friends who gave me invaluable moral support throughout the period.

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LIST OF ABBREVIATIONS

CAS	Computerized Accounting Systems
MAS	Manual Accounting Systems
ICT	Information Communication Technology
SMEs	Small and Medium Enterprises
NGOS	Non – Governmental organizations
RBA	Risk Based Audit
TAM	Technology Acceptance Model
EOU	Ease of Use
AIS	Accounting Information Systems

OPERATIONAL DEFINITION OF TERMS

Accounting expertise – It is the ability and competence in developing and maintaining reliable financial records for a person or an entity (Krishnan. & Visvanathan, 2007)

Computerized accounting systems – This is a technology that allows businesses handle all financial transactions including data and reports which are reliable with precision and accuracy (Gaffney, 2018)

Cost - The price paid for the acquisition development, output or maintenance of something (Olajide *et al*., Sep. 2016)

Manufacturing firms– These are production units of enterprises, which engage production factors for the production of goods and services under that technological advances. (Levinson, 2018).

Small sized firms – These are firms that have a turnover between Ksh.500,000 and Ksh. 5 million and number of workers ranging from 10-49 workers (Ministry of Industry, Trade and Cooperative in Kenya, 2019)

Medium sized firms – These are firms that have a turnover between Ksh. 5 million to Ksh. 800 million and 50-99 workers (Ministry of Industry, Trade and Cooperative in Kenya, 2019).

Technological change– An increase in the performance of a device or system that contributes in an increase in efficiency without the need for an increase in input. In other words, someone invents or develops a product or procedure that can then be used to get a higher yield for same volume of work. (National Commission on Technology, Automation and Economic Progress, 1966)

CHAPTER ONE

INTRODUCTION

This chapter covered background of study, statement of problem, research objectives, research questions, significance of study and scope of study.

1.1 Background of the study

Accounting systems innovation have fundamentally revolutioned manner in which entities run and have provided a strategic edge to all who understand importance of innovations. Automated accounting software should also be able to produce accurate, reliable or correct fiscal records (Noor *et al*., 2003). Computerized accounting systems (CAS) are the standard in later centuries. An excellently invented computerized accounting system makes it easier for management to make excellently informed decisions about an enterprise (Day, 2000). The much more robust the accounting system, the much more informed choices will be rendered. Failure to develop and incorporate effective accounting systems contributes to effect on a firm's efficiency (Lukacs, 2005).

In manufacturing companies, accounting systems are relevant as they help to streamline accurate financial information and make the overall accounting process more efficient, allowing policy-makers to make decisions in key areas of spending, inflow and pricing (Johnson & Soenen, 2003). Computerized accounting programs are made to monitor firm's financial operations with a view of providing annual, quarterly or monthly financial reports as per company's preference, tax returns and other reporting configurations used to assess, examine and assess the performance and profitability of the company's operations (Gaffney, 2018).

It is clearly apparent through practice of CAS the efficiency and effectiveness can only improve through establishing financial planning frameworks (Bhargava, 2004). In addition to providing accounting reports, systems also enable financial information users to determine consistency of system and of its results (Ilias, 2013). CAS have become an important device for increasing operational performance by promoting the complexities of the enterprise and delivering financial and accounting information to management. Report gathered makes important judgments that are important for preparing, monitoring or assessing the performance of the company (Haleem, 2016). CAS implementation in this developing world is very critical in carrying out tasks in a timely, accurate and productive manner. Thus, in order to allow full CAS use, implementation of the system is necessary for both the consumer aspect and the organizational framework (Deakins et al., 2001).

As reported by Akanbi & Aruwaji (2016), Manufacturing companies have encountered difficulties in implementing an effective computerized accounting system that is tailored to their industry due to internal and external influences (Collis & Jarvis, 2002). Systems are essential for gathering, evaluating, documenting and publicizing company financial data. Throughout the lifetime and as country progresses in innovation, systems of accounting are now cornerstone, which any organization will adopt, because they have more advantages than manual system. Recently, goals of advanced entities have shifted towards sustainability, a sustainable climate, customer loyalty and successful making of decisions (Abor & Adjasi, 2007).

Systems and structures for offices, units and sections are developed. In each of these, an approach employed is distinct in order to obtain the optimum results and thus are generally integrated (Agbozo & Yeboah, 2012). Management of the company depends on corporate decision taking processes. The Board of Directors frequently uses such frameworks in the

planning of optimal, operational decisions and policies for the achievement of long-term goals and priorities (Naranjo-Gil, 2004). Approaches offer good essential foundation at such a stage besides other kinds of opinion support structures. Transaction management systems collect the functional details related to the organizational decision-making process taken by line staff (Mohammed *et al*., 2016)

The accounting method enables businesses control possible benefits of reducing the loss inherent in production, increasing profitability and optimizing process efficiency (Southern & Tilley, 2000). Accounting software which processes accounting information are designed in generating financial statements and has contributed in reduction of inaccuracies made by managers or users of the program that occurs if performed manually (Awosejo *et al*, 2014). The development of accounting systems has strengthened position of accounting firms and has contributed to a range of changes that have contributed a great deal to the quality of accounting professionals. Computerized accounting system offers information of forecasts as well as preparation of finances of company which assist in preparation and management of company (Watanbe & Tanabe , 2005).

According to Weber (2011), "Computerized accounting system involves the use of computers in processing accounting data into information to facilitate quick decision making through timely preparation of financial reports and financial reporting in this case refers to the way in which financial information is recorded, processed and conveyed to the end users of this information in particular". Innovations in information communication technology (ICT) together with technology in accounting have generated tremendous changes in the field of business processes. Osmond (2011) stated that there are several advantages of a computerized accounting system such as speed, accuracy and reliability of financial information compared to a manual accounting system. These bookkeeping practices had been performed manually

prior to the advent of ICT in accounting practice. Nonetheless, several certified public accountant and data capturing clerks nowadays choose to use accounting software to record, report and analyze financial information of their entity.

By installing appropriate framework, companies demonstrate capability through maximizing benefits obtained and evaluating the incidences which can obstruct the decisions taken by the managers of the business (Jayamaha & Karunananda, 2011). Small and medium-enterprises are significant fields and therefore are a major contributor to the growth and development of countries. They lead to job growth, wealth creation and social engagements, thereby poverty reduction in a particular country (Sunder, 2000). The impact of industrial transformation and development in today's market is evolving radically and focuses mostly on development, creation of technology and the effect of development on human lives. Traditionally, many small and medium-sized businesses carried out the records manually. Being a slow, time-consuming and complicated process, it takes longer time. Inadequate record keeping and use of lower quality accounting systems leads to inaccurate reporting and information decisions is a huge challenge (Munaginghe, 2015).

1.1.1. Computerized accounting systems

As Nongo (2018) stated, accounting systems are very critical in monitoring the accounts and reports of any company. For any company, appropriate accounting and internal management systems regardless of their scope cannot be overstated because accounting systems offers option to monitor every affairs of firm (Islam, 2010). CAS include software such as Quick Books, Sage 50, Sage AccPack, Tally ERP, Pastel accounting, amongst others, that emerges with database which enable user to enter data. Accounting software is indeed a form of accounting information software, which is essential in generating transactions that occur on when, and how they occur as a prerequisite of the Generally accepted accounting Principle (GAAP) accounting principle (Seyal & Rahim, 2006). The theory requires the preparation of

financial reports from the records contained in the program. It means that the reports are produced without hesitation in due time. The results produced enables managers to monitor firm in a much economically efficient manner (Tilahun, 2019). Accounting systems produce a qualitative and quantitative report which encourages sound decision-making.

As far as accounting is concerned, CAS is an extremely basic in every company being small, medium or large (Breen & Sciulli, 2002). This serves a crucial role in assessing the financial output and productivity of the company's operations throughout the accounting process. In every firm to operate effectively, the accounting feature serves a very important role in achieving future direction (Burgess, 2002). It is also essential and also very necessary to set up a CAS in order to easily register, evaluate and explain accounting information to the management involved. That is attributable to the fact that the program has advantages that find financial details insightful relative to the manual method. The benefits that come with computerized accounting system include precision, consistency, timing, data integrity, automation, flexibility, cost-effectiveness and safety (Masanja, 2019).

When applied in the information management framework, the computerized accounting system helps track and monitor activities relevant to financial growth of the company (Cragg et al., 2002). The manner in which the processes are used by the organization is important and advantageous to the business, thereby reducing the potential for incorrect accounting. The computerized accounting system incorporates monitoring methods, processes and mechanisms which are appropriate for the production of reports (Kelley et al., 2005). The program monitored transactions include data analysis both internally and externally, the opportunity to evaluate patterns and financial statements (Shiraj, 2015)

CAS application by manufacturing firms is significant influenced by influences such as cost, technical change and accounting expertise (Hunter & Long, 2003). Each business

nowadays, an accountant is employed to manage the system. The accountant working should show familiarity with computerized accounting system since it allows users to conduct accounting tasks more competently (Ismail & King, 2005). The computerized accounting system has the grounds of accounting roles, which include input, processing and output. Many corporations struggle to meet their financial targets because little focus is placed on accounting and finance functions (Padachi, 2012). Instead of manually reviewing reports that are time-consuming, time-consuming and complicated, businesses may use the program to execute the tasks. If accountants working in that company are not familiar with the process, the software may be rejected, as they fear losing their jobs, as the management will want to introduce in accountants who can work well with system (Ismail & King, 2006).

Accountant is in charge of preparing of all financial reports either by means of manual accounting systems or computerized accounting system for the company's bookkeeping activities (Alexander *et al*, 2016). CAS are perceived to improve the precision of financial statements resulting in the transparency of the statements. Management, which has no understanding how systems operate, might not be prepared to bear additional training expenses, as a result of scarcity of knowledge and experience, leading to obstruction of the system's adoption (Ismail & King, 2007).

The scale of the company defines the capacity of every company to implement a technology that affects the transformation of the accounting method (Ismail et al., 2003). Depending on a scale of business or the acquisition expense, small and medium-sized companies should follow CAS (Christopher et al, 2014). Businesses whose earnings is small can prefer to retain manual because the installation of a new structure may result in a loss of reporting. The number of workers and the tasks carried out illustrate the scale of the company. Small and medium-sized businesses, whose accounting operations are not high,

may find it difficult to implement the computerized accounting method and thus lag behind the use of manual systems (Mitchell et al., 2000).

The program is also costly in terms of costs such as acquisition, deployment and maintenance expenses involved with device (Gaffney, 2018). Based on the financial reporting tasks conducted out by company, the computerized accounting system varies considerably from one company to another. The software has to be managed in such a way as to store the data correct and this cannot occur without also retaining the hardware system (Seyal et al., 2000). In organizations that may not have a large cash flow, they may be dealing with other internal costs that may be of more interest to the company, and they will not trust the computerized accounting system because they may need a lot of money to invest into. This consideration contributes to companies who are not able to acquire the program and thus maintain manual (Temtime et al., 2003).

According to Nyang'au *et al*(2015) recognizing reasons, which impede the implementation of CAS, and the reasons that cause business failure, the governance of manufacturing industries must build policies that minimize these deficiencies to achieve business performance. The planet has become quite complex with technological updates and advancements. Improvements in technology are fundamentally altering the manner in which finance operations are planned and executed (Thong, 2001). This trend has had a huge effect on accounting knowledge. When time passes, new computing methods such as online and real-time computing will be created or advanced. Reforms in technology impact when old systems are replaced with new and improved ones, and companies find it really difficult to deal with drastic changes that lag behind original or existing program (Toby, 2007).

1.1.2 Manufacturing firms in Nairobi County

Manufacturing companies are entities that perform transformation of inputs into product and then eventually supply to customers (Levinson, 2018). They produce goods for consumer use both locally and for export purposes. Matters such as technological innovation, global economies and competitive edge have become increasingly important in any sector (Kariithi, 2017). Kenya's manufacturing industry has grown overnight, leading to national development. They are mainly located in the major cities of Kenya and provide an incredible origin of jobs for people residing within these cities.

Table 1.1: Categorization of manufacturing firms in Nairobi County

	Small sized firms	**Medium sized firms**
Employees	10-49	50-99
Turnover	Ksh.500,000 to 5 million	Ksh. 5 million to 800 million

In Kenya today, the key goal is aggressive economic expansion to address the needs of customers, increase the export output of the economy, create and make available jobs for young people, extend and establish national innovation foundation. To accomplish such goals, government involvement is required through development of reforms governing the manufacturing sector in Kenya (Behun *et al*., 2018). Throughout Kenya, the manufacturing sector comprises numerous sectors, which are divided into fourteen (14) sub-sectors that produce different goods. each of these subsectors add value to country's GDP. Twelve (12) of such subsectors provide manufacturing operations, while two (2) provide services (KAM, 2019). Various sectors includes are beverage and food sector, building sector, mining and constructing sector, tobacco sector, chemical sector, energy sector, electronics sector, leather and foot wear sector, metal sector, paper sector, motor vehicles assemblies sector, pharmaceuticals equipment sector, plastics & rubber sector, textile industry, timber and wood sector, services and consultancy, agriculture and fresh produce. Groups of a specific sector

ought to have a shared agenda of persuasion and mediation that is of great importance to the appropriate government agencies (KAM, 2018).

According to Ududechinyere *et al*(2018), the rise in economic development and the living standards of people is caused by a rise in productiveness in the manufacturing sector because it is a competitive industry. This industry allows the nation's economy to expand by hiring thousands or by recruiting employees (Gelinas et al., 2005). The deterioration in manufacturing is due to numerous reasons, including heavy inflation, higher borrowing costs, high dollar depreciation, outdated machinery and equipment, and thus a heavy demand of cheap foreign goods (Enu & Havi , 2014). Manufacturers typically transform materials to final goods. The transformation of these products, that are inputs into output, may be quantifiable or measurable.

All manufacturing companies has equipment and yards used for the manufacture of products for consumption (Otieno & Oima, 2013). Today's technical innovation makes it possible for manufacturing to achieve much in fewer duration. Problems affecting manufacturing firms involve emergence of a Chinese economy driven by export to market. Competition worldwide has therefore become intense attributable to imports, where some certain retailers favor due to cheaper costs rather than local sales, but the cost is huge (Strong et al., 2006). High taxes in Kenya prohibit investors from trading in Kenya. Strong running costs have fueled a big dilemma. The activities of these companies must offer approaches to such problems via the development of technologies and systems that are tailored to business (Rotich, 2017).

According to KAM (2019), representation of sector that contributes to the gross domestic product (GDP) in Kenya is less than 40% and includes all stages of enterprises. The bulk of these companies are located in Nairobi city of 80 per cent, while the remaining 20 per

cent are located out of the city and in the main cities of Kenya. In Kenya, manufacturing sector is the main industry servicing local and foreign markets (KAM, 2018). The sector has branches of global companies owned and franchised in East African region.

Manufacturing is main driver to country's economy and generates a great deal of country's gross domestic product (Soto-Acosta et al., 2015). The manufacturing sector varies in terms of its production goods. In most cases, refined coffee and tea, horticultural products and soda ash and fish products are used for export in this sector (Haleem, 2016). Imports include primarily petroleum products, medical and pharmaceutical goods, industrial equipment, motor vehicles, chemical fertilizers, iron and steel, primary and non-primary plastics, vegetable oils etc (KAM, 2018).

Kenya's manufacturing sector did grow 3.5 per cent in 2015 and 3.2 per cent in 2014, leading 10.3 per cent to GDP (KNBS, 2016). As such, on average, manufacturing has grown at a slow pace than the economy, which in 2015 accelerated by 5.6 per cent. This suggests over time a share of GDP manufacturing has been decreasing. As a matter of fact, it can be asserted that in a framework in which manufacturing and industry are still relatively untapped, Kenya is going through premature economic decline. Correspondingly it should be indicated that the intensity of the sector is empowered by both local and external market size. Some interviewers were of view that inadequate information was sufficient to assess the resilience of the various subsectors. However, the following were recognized by other participants as the biggest sub - sectors in formal manufacturing: agro-industry (food and beverages), textiles in export processing zones (EPZs), pharmaceuticals, construction-related sectors such as cement and metals, and high-end furniture.

pertaining to a discussion with a delegate of the Kenya Institute of Public Policy and Analysis (KIPPRA), the average real-life growth in manufacturing over the past five years has been

around 3.4%; food and beverages have grown by around 6% and non-food has grown by around 2%. Food and beverages are closely related to agribusiness. In informal manufacturing the biggest subsectors have been identified as furniture-making and metal works. Because of the raw material availability, the former was thought resilient. The effectiveness of metal works has been interconnected to the production of agricultural machinery in rural areas as well as to the growth of construction in the country. Sectors classified as the poorest and most vulnerable in formal manufacturing were interconnected to complex manufacturing, such as vehicle assembly, electronics, and other technology-related manufacturing.

Table 1.2: Membership composition

Sector	**Percentage of membership**
Building, Mining and Construction	3%
Chemical and Allied	9%
Paper and Board	8%
Pharmaceuticals & Medical equipment	3%
Plastic and Rubber	3%
Energy, Electrical and Electronics	5%
Food and Beverages	22%
Consultancy & Services	10%
Textiles	7%
Timber	2%
Agriculture	1%
Leather	1%
Metal	9%
Automotive	6%
Total	**89%**

Source: KAM

According to Manufacturing Priority Agenda(2018), the fact that manufacturing sector adds a great deal to country's economy encounters a range of barriers such as illegal trade, high cost of industrial inputs, various tax regimes, high cost of energy, high cost of financing, insufficient training and capacity building and a lack of preference for locally manufactured goods over imports (Aziz, 2003). Regardless of these obstacles, there are a number of opportunities available that can improve the sector which include eliminating value added tax on exports, resolving logistical problems, achieving complete supply chain convergence, raising energy costs which exploiting significant global customers, among many others (Alnajjar, 2016).

Manufacturing sector has played a significant and vital role in globe through generating openings for workers with less expertise as well as by growing demand by exporting goods to different continents (Meiryani, 2014). This has contributed to high production rates that in turn have also contributed to the growth of the manufacturing sector. The sector plays a crucial role and is a vital part of the economy (Harash et al., 2014). For sector to thrive, it needs a consistent emphasis on important topics such as networking, policy activism and coalitions either locally, regionally and internationally.

According to Kenya Association of Manufacturers (2018), manufacturing sector in 2018 has led to 10% of the GDP, which was about 8.4% in 2017, and 9.2% in 2016. Kenya, just like most states, hasn't been able to create a strong manufacturing sector, and development is driven mainly by agriculture and services sectors. Boosting production in the manufacturing sector stays a major country strategy as far as the country wants to obtain higher production and increase to the country’s GDP (Ghasemi et al., 2011).

Past figures show that three out of five companies struggle to operate during the first few quarters of operation (Kenya National Bureau of Statistics, 2007). Throughout Kenya, small and medium-sized enterprises tend to be based throughout urban and peri-urban centers and are mostly licensed. They experience a variety of restrictions, including the challenge of hiring qualified ICT technicians due to the current wages that such people would need, financial difficulties resulting from restricted access to funding, the incapability to procure technology resources from structured outlets (Capital Markets Authority , 2010).

1.2 Statement of the problem

Despite the increasing importance attached to small and medium sized economic activities across the globe there appeared to have little reported improvement in the management of financial information (Malait et al, 2017). This area had not received the same consideration as the many other areas, ranging from start-ups to schemes promoting the growth of the sector. There was a substantial amount of literature providing detailed and carefully tailored advice to small and medium business owners on management of financial information but none of them had specifically looked into the benefits that these firms can derive from if adopted computerized accounting systems(Akanbi & Aruwaji , 2016).

Although these studies provided important insight into management of financial information through use of computerized accounting systems, few research works had examined the extent of adoption of computerized accounting systems in particular, for a Kenyan economy. While there were only few studies that dealt with the adoption of computerized accounting systems, they had been exclusively undertaken in other countries across the globe. The context was obviously different and the findings would most probably not be applicable to the local context where institutional set up and economic development were different.

The computerized accounting system is a mechanism for successful decision-making and, if not implemented, actions taken by managers would not be relevant because the information produced manually is not reliable and accurate (Otoko , 2016). While a computerized accounting system is an essential tool in every accounting system, there are companies that had not adopted the system (James, 2013). The non-implementation of the computerized accounting system had contributed to the occurrence of poor accounting standards, inconsistencies in the production of financial statements and manipulation of financial information, that had contributed to manipulation of information (Malait et al., 2017).

A variety of scholars did studies on the computerized accounting system. For example, Sugut (2014) did a study on the effect of CAS on the quality of financial reporting in non-governmental organizations. The research centered on non-governmental organizations. Githinji et al., (2014) carried out a study on the adoption of CAS by coffee societies in Nyeri county Kenya. The research centered on coffee societies in Nyeri County, based in rural areas. Otieno (2015) studied on factors that influence the adoption and use of ICT systems and applications, by Small and Medium sized Companies (SMEs) in Kenya. the study focused on Information communication systems. Rotich (2017) did a study on the impact of AIS on effectiveness of manufacturing firms in Kenya. The study focused on the effectives of manufacturing firms. Mose et al. (2013) researched on the critical success factors and challenges in e-procurement among large scale manufacturing firms in Nairobi Kenya. The study focused on large manufacturing firms. Malait et al. (2017) did a study efficacy of accounting systems on the performance of Egerton university in Kenya. the study focused on public university. Simon (2015) did a study on factors affecting the adoption of computerized accounting systems by SMEs in Kiambu county.

Lack of CAS was the cause of poor-quality financial information. Operations in various units in manufacturing companies had experienced a transition from the old way of introducing modern innovations that were productive and quicker. Unreliable and inaccurate information had been of major concern to users of financial information as it turned out to be of poor quality hence misleading users of the information. This paper therefore attempted to fill the gap and contribute to the growing literature on the computerized accounting systems adoption by small and medium firms. The focus of this paper was on accounting systems adoption of the small to medium-sized manufacturing firms operating in Nairobi county.

Manual accounting systems were slow and unreliable and thus delays generation of reports, encouraged fraud and other malpractices. Given potential benefits of adopting CAS and the evidence of low adoption of CAS, this research study therefore, aimed at reducing this knowledge gap by attempting to establish factors that affected computerized accounting system adoption by focusing on three factors: accounting expertise, technological change and cost.

1.3 Research objectives

1.3.1 General objective

The main objective of the research was to study factors affecting computerized accounting systems adoption by small and medium sized manufacturing firms in Nairobi County

1.3.2 Specific objectives

i. To determine the extent to which accounting expertise affect computerized accounting system adoption by small and medium sized manufacturing firms in Nairobi County
ii. To examine the extent to which technological change affect computerized accounting system adoption by small and medium sized manufacturing firms in Nairobi County

iii. To establish the extent to which cost affect computerized accounting system adoption by small and medium sized manufacturing firms in Nairobi County.

1.4 Hypotheses

H1: Accounting expertise has positive effect on adoption of computerized accounting systems

H2: Technological change has positive effect on adoption of computerized accounting systems

H3: Cost has positive effect on adoption on computerized accounting systems

1.5 Significance of the study

1.5.1 Government

The government of Kenya through the ministry of industrialization may benefit through developing policies that aimed at regulating firms and which would enable the firms grow. The vision 2030 secretariat would use the study findings as valuable input for a policy paper for SMEs.

1.5.2 Management of firms

Through gaining awareness on the adoption of CAS, the management would define strategies for the effective adoption and use of CAS. The research would offer them useful ideas into variables which affect the acquisition of CAS, and it would encourage them to make better decisions about how to maximize the acceptance and usage of CAS in the firm.

1.5.3 Researchers and scholars

The research promoted an improvement in the general awareness of the subject and served as a guide source for prospective researchers. The study made recommendations of the areas in which researchers may consider for future studies. It also addressed unresolved need for scholarly studies.

1.6 Scope of the study

The study was restricted to manufacturing firms in Nairobi County focusing only on medium- and small-scale enterprises due to researcher's convenient. Research surveyed owners and finance managers and accountants. A lack of cooperation from the respondents were a challenge that were faced in the course of the research. The challenges were reduced by gaining advance approval from the appropriate management personnel in the participating companies to ensure the effectiveness of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter discussed work carried out by other scholars on a similar ground connected to the study subject. It also discussed the theories connected to the research. The results, conclusions and suggestions of the work carried out by other researchers are stated. It contains theoretical review, empirical review, conceptual framework, research gap and operationalization of variables.

2.2Theoretical review

This section discussed various theories linked to the study. The theories include diffusion of innovation theory, reasoned action theory, and technology acceptance model.

2.2.1 Diffusion of innovation theory

The theory of Innovation diffusion was developed by Rogers (1962). The theory talks about the process through which consumers are influenced to get to knowing new products and services. Diffusion is the activity of disseminating information about a new technology through a given communication channel in order to inform a population about the new technology (Rogers, 1962). Therefore, the innovation diffusion theory argues that a user

makes the decision to adopt a technology as a result of the information they have received about the technology. The rate and a multiple source through which a product or a service can be known by an intending consumer (Bagh et al., 2016). In any process of product/service diffusion, advancement in innovation is spread through channels of communication in a population (Rogers, 2016). Individuals do form an opinion after obtaining knowledge about the product/service and then they decide whether to adopt the product/service. In an entire lifecycle of an innovation, the individuals do monitor whether the product is adding value to them. For a product or service to pick up over time and spreads through a population, there is a diffusion and it is the only way a product/service can get to the large population (Rogers, 2003; Bracheau &Wetherbe, 1990; Dearing & Cox, 2018).

In the process of advancing an innovation, it is significant that the target users of the innovation be understood and identified. Different types of population who adopt a system involves innovators, early adopters, early majority, late majority and laggards. The stages for adopting an innovation includes awareness, persuasion, decision to adopt, implementation and confirmation stage (Lee *et al*, 2011; Wani & Ali, 2015; Lehmann, 2005). Knowing the percentage of the population that have already acquired the product in designing a change is a very important thing for it makes one aware of next level to be addressed and this gives much insight in starting to develop a product (Robinson, 2009; Ollila & Lyytinen, 2003).

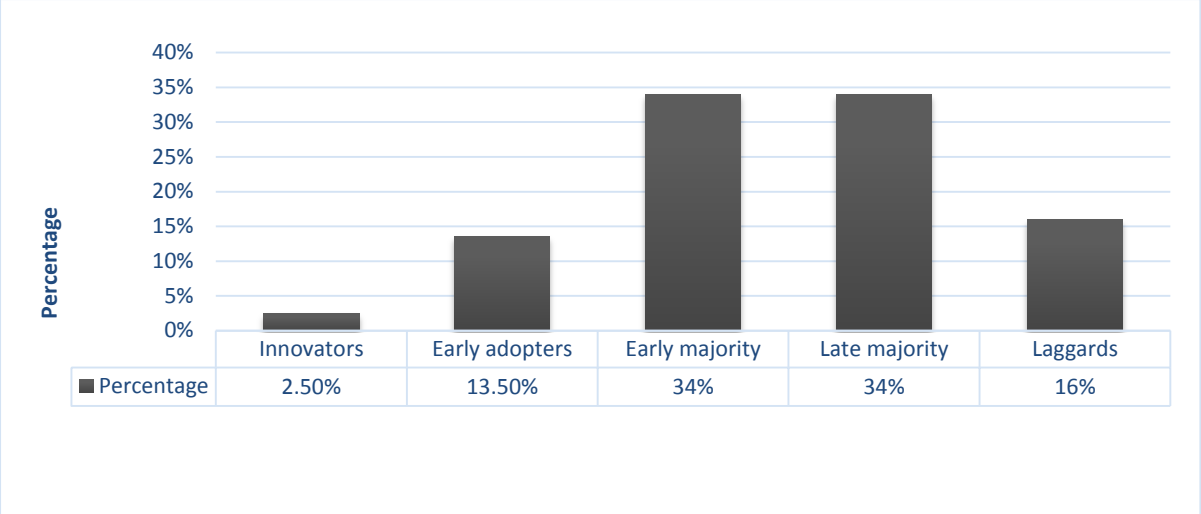


Figure 1.1*:* Technology adopter categories (adapted from diffusion of innovations, fifth edition by Everett M. Rogers. PP.1-10. Retrieved from http://tojet.net/articles/v5i2/523.pdf)

This theory was applied in the context of Science, Technology, Engineering and Mathematics-STEM (Xue, 2017), Technology acceptance and sustainability (Aizstrauta *et al*, 2014), Educational accountability (Sasaki, 2018), Health (Cox & Dearing,2018), Intervention development (Dearing, 2009). However, this theory has been criticized by many other researchers and various weaknesses have been noticed. The theory lacks cohesion or unity (Katz *et al*., 1963). This makes the theory stagnant making it impossible to apply consistently with new problems. It is hard to measure since human connections are diverse, and there are no specific reasons for innovativeness (Damanpour, 1996). The model is a one-way information where information flows from sender to receiver and no reverse. Direction and outcome of the campaign is controlled by the person implementing the change (Giesler, 2012). It can't account for all variables hence misses critical predictors of innovation (Plsek & greenhaigh , 2001). It is insufficient in multiplex environment in which the adopter is only receiving knowledge from a wide variety of sources and must get feedback to source (Robertson *et al*, 1996).

This theory has been used successfully in many fields. In manufacturing firms, Diffusion of Innovation Theory will be used to accelerate the adoption of computerized accounting systems that typically bring accuracy and efficiency in accounting work. For example, an intervention to address unreliable information produced by manufacturing firms is developed, and the intervention is promoted to people in accounting department with the goal of adoption (based on Diffusion of Innovation Theory). The most successful adoption of computerized accounting systems results from understanding the target population and the factors influencing their rate of adoption. Based on the above application, the theory is relevant in this study in influencing behaviors of medium and small-scale manufacturing firms in accepting to adopt the CAS. The theory impacts knowledge to those decisions makers of firms and it persuades them to make decisions on adopting the CAS. The theory convinces them of the usefulness of adopting CAS so as to maximize the product engagement experience. In terms of adoption of CAS, the theory is applicable.

2.2.2 Reasoned action theory

Theory of Reasoned action was developed by Ajzen& Fishbein (1975). It tries to explain attitude and behavior towards adopting a technology. Individuals have different ways in which they reason to get an action in move. Reasoned action is the product of an association that occurs between attitude and actions (Ajzen, 1987). The behavior of the individual is determined by the desire to conduct the behavior and the support of the individual. in understanding how attitude influences the intention to adopt and continue using a technology (Ajzen& Fishbein, 1980). The theory is therefore primarily concerned with identifying the factors underlying the formation and change of behavioral intent (Bentler & Speckart , 1979). The relative contribution of attitudes and subjective norms may vary with the context and the individual. Attitudes are determined by the beliefs about the outcomes of performing the behaviour and the evaluation of these expected outcomes. The subjective norm is dependent

on beliefs about how others feel the individual should behave and their motivation to comply (Fishbein & Manfredo, 1992).

Behavioral intention is as a result of a belief that doing a behavior will trigger a result. Stronger intentions cause high efforts to behavior performing and this leads to high chances that the behavior to be performed (McKemey & Rehman, 2003). The best way to predict a behavior is through intention and instrumentality. Perceived behavioral control, subjective norms and attitude toward specific behavior determines the instrumentality (Fishbein & Ajzen, 1975; Elsevier, 2019). According to Trafimow, (2009); Bodur *et al*., (2000), if a researcher wants to influence a behavior, it is important to realize what influences or determines attitude. Predominant influence in the process of attitude formation explains well the inconsistencies between attitudes and evaluative responses.

The theory had been applied in education (Paimin *et al*, 2016), Nursing behavior (Mullan, 2010), counseling psychologist (Romano & Netland, 2016), Human kinetics (Hausenblas *et a*l., 2019), Nutrition (Hosseini *et a.l*, 2015), Computer in human behavior (Mishra *et al*., 2014), Individuals polytonicity (Slocombe, 1999),Birth control and safe sex behavior (Doll& Orth, 2006); Religious behavior (Gorsuch & Wakeman, 1991). However, the theory had been challenged by other studies that determined to examine its limitation and adequacy. Various weaknesses had been established. Ignorance of the connections between individuals was a major problem (Schwartz & Tessler, 1972). In consideration of individual perceptions of these social phenomena, strategies were limited. It lacked to fully grasp and oversimplify the social dynamics of transition and again the social essence of transition as a whole (Terry *et al*., 1993). Past behavior habituation which tends to decrease the effect that intention had on behavior (Bagozz, 1981). It didn't allow generation of hypothesis for it focused on truth thus creating ambiguity (Ogden, 2003).

The theory of reasoned action has been predicated on the idea that humans normally act in a rational way; that they take into consideration the information available and consciously or unconsciously consider its consequences of an action. The theory that the ultimate goal of a individual to perform an action or not to do so is one immediate antecedent of that action. In the case of unforeseen events, individuals are only bound to comply with their intentions. (Ajzen, I., 1988). The theory claimed that the immediate antecedent of any behavior was the intention to perform that behavior. The bigger the motive, the more individual was expected to try, and therefore the greater the level that conduct was performed (Ajzen & Madden, 1986).

The theory was used in predicting the behaviors and explaining the attitude - behavior relationship that staff and management of these manufacturing firms possessed towards adopting CAS. From the application, the theory was applicable in predicting adoption of CAS in small and medium sized manufacturing firms in Nairobi County by predicting variability in people's behavior. The theory focused on improving the take and reasoning that the staff and management had on the computerized systems thereby explaining relationship toward adopting CAS.

2. 2.3 Technology Acceptance Model

Technology acceptance model was developed by Davis (1986). It is used to foretell uses and acceptability by different users of data systems and technological advances. TAM has been extensively studied and authenticated in a diverse research which scrutinize the person patterns of technology acceptance in distinct data systems (Davis, 1989). Perceived usefulness and perceived ease of use are pertinent to the conduct of computer users. TAM provides an important general outline and is congruent with a set of examinations onto influencing factors the inclination of older individuals in using new technology (Chau, 2001). As the user becomes more familiar, objective usability, perceptions of external control and

perceived enjoyment from continued use of the new technology can increase the influence of perceived user-friendliness on the adoption and use of ICT systems (Lu et al., 2003).

Perceived ease of use is the extent whereby the potential user intends the designated system to be effortless. Most essential predictors of initial system usage are ease of use and perceived usefulness (Warshaw *et al*., Aug 1989). Perceived ease of use and perceived usefulness are stimulated by external parameters, which includes social, cultural and political influences. Perceived use determines greatly individual's attitude through self-efficacy and instrumentality (Chervany *et al*., 1999). Users of any system will feel that they have control over what they are doing and the system is easy to use. (Davis & Warshaw, 1992).

Perceived ease of use is an inclusive and essential construct for perceived usefulness, it affects the usefulness of the near term as advancement contributes positively to the results and ultimately defines perceived usefulness (Chau, 1996). Studies conducted to document reported utility and ease of use off trade and to determine the effects of different factors on these two adoption factors show mixed findings. (Davis, 1993) argued that empirical findings nonetheless conclude the strong relationship among user-friendliness and user-friendliness (Venkatesh and Davis, 2000) and demonstrate that user-friendliness is an established factor of the aim of users to accept ICT. (Venkatesh et al., 2000).

The theory had been applied in various areas which includes online shopping (Ashraf et al, 2014), online retailing of financial services (McKechnie *et a.l*, 2006), Mobile banking (Lule *et al*., 2012), Health care(Pai & Huang, 2011), Education (Marangunic & Granic, 2019), Behavioral intention(Vaghela & Kapadia, 2019), Information systems success (Wang & Liu, 2005), E-book production (Liao *et al.*, 2018). Despite its regular use, the theory had indeed been heavily criticized. The framework concentrated on person use of a computer that believes in presumed usefulness while ignoring the essential social process of information development and implementation. (Lunceford, 2009). It does sufficiently predict the

acceptance of ICT (Hojjati & Khodakarami, 2016). According to (Hai & Alam, 2015), the model was not robust enough to explain the behavior of users in deciding on the technology use.

The theory was be used to describe the owner and manager's individual aspects affecting adoption of computerized accounting systems in their firms and also their acceptability to acquire the systems in place. Management factors relate to executive decisions that the owner or top manager must make, what financial commitments to commit to relating to the overall vision of the company, acquisition of new infrastructure, whether the firm must consider adoption of CAS or not, their knowledge and appreciation of CAS and new technological developments. Based on the available literature, this theory was applicable in adoption of CAS in small and medium sized manufacturing firms. The theory provided thorough knowledge for adoption of CAS in promoting access and use of up to date CAS, which advances reliability of accounting information. The theory was relevance as it increased confidence in the use of CAS thus leading to increased personal control, flexibility and competent use of information hence increased knowledge will lead to better and accurate information.

2.3 Empirical review

This segment incorporated studies by scholars, both internationally and locally, on how independent variable related to dependent variable.

2.3. 1 Accounting expertise and computerized accounting system

The examination on the effect of computerized accounting system on risk based internal auditing (RBIA) in Homa Bay county government in Kenya adopted descriptive design (Oyanda, 2016). The investigation used questionnaires to collect the data. It was concluded that the RBA should be enhanced for it contributes to accountability and also transparency in

an automated environment. The investigation suggests that those charged with governance should acquire successful CAS in the efforts of executing RBA practices which in turn brings effectiveness and efficiency in financial performance.

According to (Malait *et al*., 2017), on research on efficacy of accounting systems on the performance of Egerton University. Research used descriptive design where simple regression model was used to analyze the data. Data was collected by use of questionnaire. Research established that performance of the university was influenced by accounting systems. The study recommends that, for the university to be able to enhance accuracy of financial reports, accountability, transparency and customer's satisfaction, it should update the accounting systems.

Aremu and Adeyemi (2011) argued that, with the exception of legal requirements, small and medium-sized enterprises seldom offer major concerns to sound accounting process, while somehow indicating that inadequacy and inefficiency of accounting processes was accountable for the premature collapse of a server of them. Due to poor generation and the use of accounting information the events outlined above were endured. Beke (2010) suggested that the quality of accounting and decision-making linked with using AIS improve. Choices on quality occur since AIS documents guarantee quick access to stored properly information records. Beke further argued that AIS has a tendency to provide centralized forms of data analysis through information system.

The exploration on the factors that affect accounting information system implementation and accounting information quality: A Survey of Utara University Malaysia, researched on the components that affect accounting information system implementation and accounting information quality (Al-Hiyari *et al.*, 2013).It analyzed the impact of human resource, information quality and the executives' responsibility on accounting systems and data quality. It was found out that commitment of management and quality of data influences

the accounting information system. It was recommended that there should be enough training which will impart knowledge of accounting information system for the systems to be implemented.

The research on factors influencing Accounting Information System among manufacturing SMEs: Evidence from Malaysia examined AIS effectiveness and its influence factors. The proposed model examines the impact of AIS sophistication, manager participation in AIS implementation, manager AIS knowledge, managers accounting knowledge, and effectiveness of external experts such as vendors, consultants, government agencies, and accounting firms on AIS effectiveness. The study established that accounting information systems effectiveness is influenced by managers accounting knowledge and effectiveness of vendors. It was recommended that managers of manufacturing firms need to gain the necessary knowledge to for them to understand business information better. To overcome the lack of AIS knowledge, qualified vendors who have experience and understands unique characteristics of manufacturing firms should be engaged (Ismail, 2009).

As per Padachi (2012), on the study of factors affecting the adoption of formal accounting systems by manufacturing firms, poor performance is caused by limited scope to enter export market and also accessing finance. The study used stratified sampling and questionnaire as the research instrument. The study established that the concept of business entity is the key for formal accounting systems and mostly, small and medium firms have not adopted.

The research on review on determinants of accounting information system adoption by Tilahun, (2019) sought to identify the major determinants of accounting information system adoption by companies and firms throughout the world. It was established that performance expectancy, perceived ease of use of the software, human resource and management support and commitmentare major determinants that influence the accounting

information adoption. It was recommended that management of organizations should offer support in accounting information implementation. It was also recommended that appropriate curriculum which provide qualified graduates for the employes should be introduced and the government should provided support to accounting information adoption.

Nzomo (2013), In the study entitled 'Impact of the Accounting Information System on the Organizational Effectiveness of Automotive Companies in Kenya, Management in Automotive Organizations in Kenya was found to rely heavily on information generated from the company's employed AIS. Reports on quality are very important in getting an ideal incentive to invest. Traditional methods of capturing, compiling and reporting financial reports from companies led to less informed decision. Investing in good and reliable accounting systems has become a big concern for all managers because it results in higher management practices and organizational performance analysis of the firm. This has led the researcher to investigate automakers' application and use of accounting systems, and thus their effect on organizational efficiency.

On the investigation on effects of CAS on financial reports of Non-Governmental Organizations (NGOs) in Nairobi County by (Sugut, 2014), Transparency was found to be the key contributor to the quality of the financial reports. The investigation prescribes that in order for the NGOs to have quality reports, CAS should be invested in as there will be increased, accuracy, timeliness and relevance of the report produced. Also, in order to enhance the quality or the financial reports, there should be open recruitment that will bring in the best staff for the right work.

2.3.2 Technological change and Computerized accounting system

According to Otieno (2015) on factors influencing Information communication technology adoption and usage by small and medium sized enterprises; the case of Nairobi based

manufacturing firms, the research established that acquisition and use of CAS was influenced by perceived ease of use of technology and executive managers of manufacturing firms. It was recommended that enterprises management support ICT initiatives and consider employee skills in knowledge in ICT for it will enhance the acquisition of the ICT in these enterprises.

The study on CAS usage by Small and Medium Scale Enterprises in Kumasi Metropolis, Ghana focused on level of usage, benefits and challenges of CAS (Amanamah et al, 2016). It was established that computerized accounting software are used by only few manufacturing firms. Lack of education on the benefits of using CAS, cost and personnel led to the low level of CAS usage. The study recommended educating on the benefits of using CAS. Regular updating of computer software should be done on a regular basis to make sure that it is up to date with technological changes and data or information should be backed for easy retrieval in case of any system breakdown.

Boame et al. (2014), identified that the main justification for an accounting information system (AIS) is to gather and document data and information on events having an economic effect on organizations, and to maintain, process and communicate such information to both different stakeholders. Typically, when firms embrace e-accounting, they find that although computerized accounting systems handle financial data quickly and effectively, their actual worth is that they are capable of generating immediate organizational reports.

Melanie et al. (2011) looked into the role of accounting information in Australia's winery management of SMEs. The study concluded that accounting information plays an important role in managing small and medium-sized enterprises with particular importance to the Australian wine industry because industry-level stakeholders are involved in program to encourage and establish SME business managerial practice.

On the critical success factors and challenges in E-procurement adoption among large scale manufacturing firms in Nairobi Kenya were carried out by Mose (2013), It was revealed that the e-procurement practices have been adopted by large manufacturing firms. Employee and commitment of management to acquiring the system, IT reliability, user acceptance and management support triggered to e-procurement adoption. Lack of approval by directors, change resistance and existence of old systems were identified as the challenges affecting the e-procurement adoption. The study recommended that there should be ways of motivating employees to accept the systems as this led to e-procurement adoption.

As per Ilias(2013), on factors affecting the computerized accounting system, the study intended to examine perceived ease of use, perceived usefulness, behavioral intention, true use, and attitude towards using and psychological attachment towards computerized accounting system in Malaysian Accountant General Department. The study used questionnaire and multiple regressions for data analysis. It was found out that in determining user's behavior intention was determined by the perceived usefulness and ease of use. The attitude towards use of CAS was mostly influenced by the compliance. It was suggested that users' attitude in the use of the computerized systems needs to be improved through paying more attention to social influences.

As per Pemberton *et al*(2016), on factors contributing to adoption and use of information and communication technologies within research collaborations in Kenya, The study was designed to discover how ICTs were used to assist interactive research in Kenya and to describe variables in the ICT ecosystem, which add to the implementation and use. It also found that there was a little variability in the aspects of ICT used to assist interactive research in the population researched. Numerous variables have an impact on the adoption and use of procedures, including the accessibility and access of ICT resources, the essence of work, national and institutional ICT and research areas, and the social and cultural practices

of researchers. Researchers themselves in contexts of the preconception of the usefulness of ICT for their work influence the adoption of ICT ecosystems.

The research on examining small business adoption of CAS using the technology acceptance model purposed to examine how small business owners in central Ohio came to accept and use CAS. The study established that many of small businesses had not adopted CAS. Results showed that there was a positive correlation between perceived ease of use, perceived usefulness, and the intent to adopt CAS. Usefulness is more important to non-adopters and ease of use is more important for continued use. It was recommended that adoption of CAS increases the importance of ease of use (EOU) (Rogers, 2016).

According to Irefin *et al*., (2012), on the study on factors affecting the adoption of Information and Communication technology in small and medium scale enterprises in Nigeria found out that cost was a major barrier for the adoption of ICT by small and medium enterprises. It was also established that government support, availability of ICT infrastructure and management support were other critical determinants that barred ICT adoption. The study recommended that the small and mediun enterprises need to put in consideration ICT and develop measures to mitigate the barriers that hinder them from acquiring the technology as it will make these enterprises more innovative.

Ismail et al., (2017) researched the factor that affects the integration of accounting information systems in Malaysian manufacturing companies of small and medium size. The survey targeted to investigate the factors influencing the use of accounting information systems in factories, small and medium-sized manufacturing companies in Malaysia. The research also showed that accounting information systems operate perfectly as they connect information from top to bottom that helps employees in companies accomplish their objectives, plus using these systems will allow companies to provide precise information to key government agencies.

Gwangwava et al. (2012) investigated factors which affect the process by small and medium-sized enterprises of the accounting information system using the descriptive survey method. Research revealed that cost-benefit analysis, lack of government support, financial restrictions, AIS complexity and reluctance are weak predictors of SMEs failing to adopt AIS. results also disclosed that AIS does not relate to company size. For efficient adoption, a study suggested state intervention by providing finances, subsidies and collateral to SMEs.

2.3.3 Cost and Computerized accounting system

According to Githinji *et al.*, (2014), on the research on the adoption of CAS by coffee societies in Nyeri County Kenya, descriptive survey research design was adopted. It was discovered that CAS have not been fully acquired by these societies. It is affected by human resource skills, availability of related infrastructures and cost. It was recommended that, to improve accountability and transparency in the sector, there should be consideration of hard and software which is zero rated as this reduces the cost of acquisition. There should be staff motivation so as to acquire skills which complement the system and also consider and develop policies which emphasize on relevant skills.

The objective of the study on the adoption of computerized accounting system by SMEs in Benin City was to find out the prospects and challenges of the adoption of computerized accounting by SMEs owners in Benin City (Dabor *et al*, 2016). The research used descriptive design and Chi-square statistics was adopted to analyze the data collected. Data was collected through use of questionnaire CAS were influenced by size of business, competition and financial resources availability.

The goal of the research on variables influencing the deployment of CAS in public hospital was to identify factors from perspective of public hospitals in Arusha District for the deployment of the computerized accounting system with the Tanzanian Ministry of Health. The findings of the study showed that efficiency and cost of administration affect the

adoption of computerized accounting system in hospitals of the Arusha district government. The paper recommends that legislators continue to improve the management of public hospitals in the district of Arusha by taking critical decisions to transform the existing accounting system into a computerized accounting system and also make major attempts to acquire government funding to ease the financial burden of these hospitals to expedite the process. (Fortunata, 2013).

The study on Appreciation of Computerized Accounting System in Financial Institutions in Bangladesh sought to assess the level of perceptions of four factors such as performance expectancy, effort expectancy, social influence and social conditions in using CAS in different financial institutions of Bangladesh (Fowzia & Nasrin, 2011). It was established that there is positive employees perceptions using CAS. Accounting information system concept is well established and numerous commercial packages as well as tailor-made packages have been developed.

Adebayo et al. (2013) also looked at the influence of the accounting information system as an aid to decision - making processes in Nigeria's food and beverage companies. The primary data for this research has been primary data via questionnaire administration. Analysis of the regression and the correlation of Karl Pearson was used for data analysis. The findings showed that in today's fast - changing world, the accounting information system is an essential tool in decision making. However, institutions were recommended to invest in the tools of technology to improve their efficiency performance.

Kwame et al. (2014) evaluated the accounting practices of SMEs in Ghana using the Sunyani Municipality as a case study. The study used the stratified sampling and snowballing techniques to obtain data from municipality's SME owners / managers from different sectors. The findings were also based on a survey of the one hundred and four SMEs in the

municipality's accounting record practices. The study indicated that the majority of SMEs don't really keep proper financial records due to numerous factors such as lack of owners / managers' bookkeeping qualifications and the high cost of deploying an effective accounting system.

Urquia et al . (2011) further assessed the effects of the Accounting Information System (AIS) on performance indicators in Spanish SMEs and discovered that the use of AIS is essential to broadening a market, improving a management of selling costs and improving a management of customer - vendor relations between companies. Consequently, the magnitude to which this investment in particular program relating to performance and easy financing for the economic financial sector is indeed a question that has yet to be adequately examined.

According to Olamide & Adeyemi (2016)on the Evaluation of accounting information system and performance of small scale enterprises in Kwara state Nigeria, it was established that the performance of small and medium scale enterprises is influenced by accounting information system. Computerized accounting system adoption improves the ability of small scale enterprises to secure funds from financial institutuions. The study recommended that SMEs should adopt computerized accounting system should so as to ensure that the level of computerization improves in line with current level of technology advancemenet.

On the adoption of accounting information system practices by entrepreneurs in Sri Lanka (with special reference to the Polonnaruwa District), the aim of research was to identify the AIS software used by entrepreneurs and to assess the degree of satisfaction in implementation of AIS software packages in small businesses. Knowledge of system users and the cost of implementing the system have been identified as a common problem for entrepreneurs. Some of them have doubts about the choice of a suitable accounting system for their enterprise (Kaluarachchi, 2016).

According to Habiba et al. (2019) on the adoption of the computerized accounting information system (CAIS) among small and medium-sized enterprises (SMEs) in Addis Ababa, Ethiopia, the research attempted to identify factors that affect the computerized accounting information system. The study shows that the large number of small and medium-sized enterprises in Addis Ababa is highly dependent on AIS manuals. Research prescribed the need of a friendly role to foster use of CAIS among small and medium-sized enterprises, to design and develop tax incentive tools through tax incentives, and to raise understanding of the benefits of CAIS adoption and motivation for execution among small and medium-sized enterprises.

Study conducted by Otieno et al., (2013), On the Effect of Computerized Accounting Systems on Audit Risk Management in Public Enterprises, found that 36% of entities reported having a fairly frequent or similar mechanism in place while another 24% were in process of implementing the computerized system. Over 40 per cent of the institutions involved lack sufficient a computerized audit action plan

Study by Hunton (2012) explored the link between computerized accounting information system and organizational effectiveness; demonstrates that a positive and significant relationship among accounting information system and organizational effectiveness, which means quality of accounting information, would then lead to continued efficiency. Several studies on importance of accounting information for valuation models, share price and prediction of earnings have questioned the standard paradigm of financial reporting in the industrialized nations. The same question about value relevance of accounting numbers to investors may be raised in Kenya. This helps the investigator to evaluate whether result from the earlier research is in agreement or digressive.

2.4 Conceptual framework

The conceptual framework provides a strong distinction between the independent variable and the dependent variable of the sample and their correct measurements.

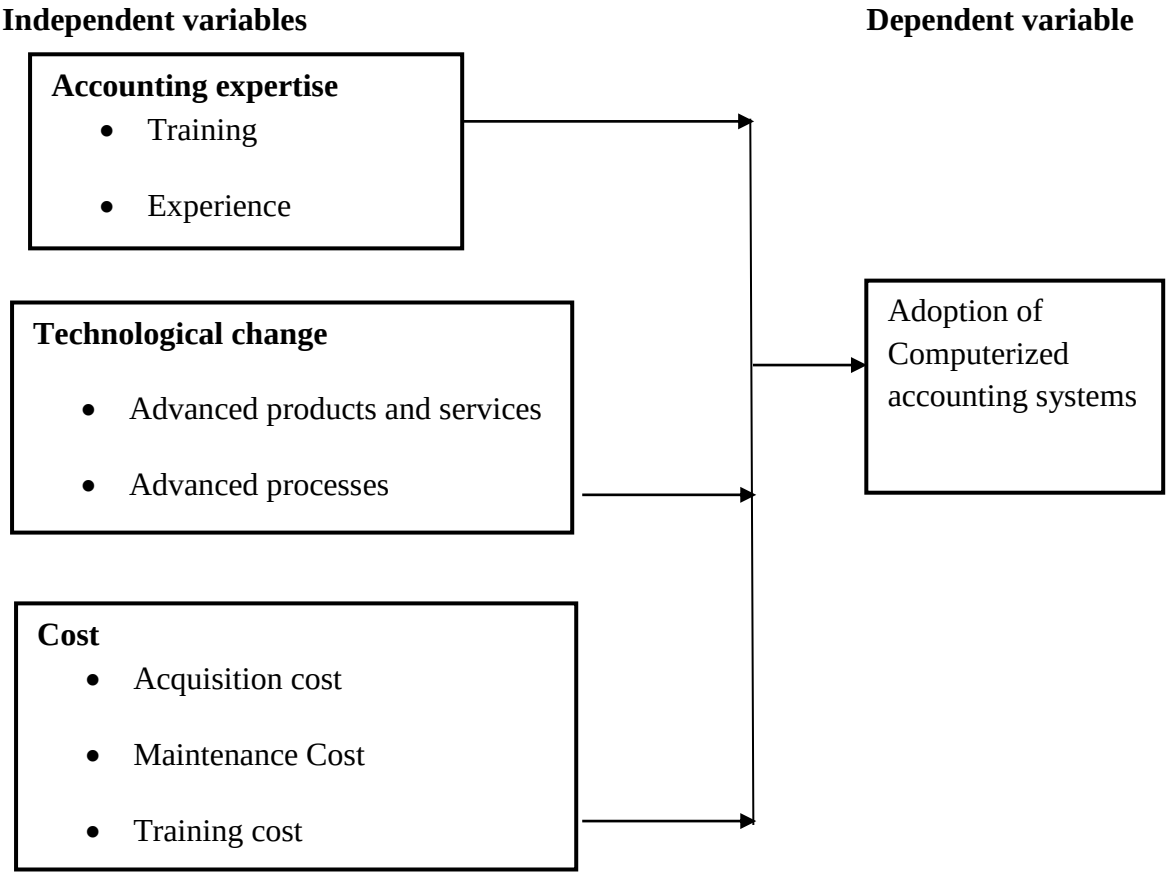


***Figure 2.1*: Conceptual framework**

2.5 Knowledge gap

In Kenya, we have been experiencing poor quality financial information produced which has led users of financial information make wrong decisions hence raising an alarm as to the cause of the poor-quality data. Misleading information, fraud and malpractices has been on increase, which portrays that the firms involved in accounting work are still remaining manual which is slow and time-consuming method of producing desired results.

2.5.1 Operationalization of variables

The operationalization of variables sets out simple descriptions and basic measures of the independent variable and the dependent variable of the sample and respective measure scales.

Table 2.1: Operationalization of variables

Variable type	Name	Specific measure	Scale
Dependent	Computerized accounting system	Accounting reports	Interval Ordinal
Independent	Accounting expertise	Education Experience	Ordinal
	Technological change	Advanced products and services Advanced processes	Ordinal
	Cost	Training cost Maintenance cost Training cost	Interval

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covered the design, study population, sample and sampling procedure, the instrument used in the study, the validity and reliability of the instrument, the collection, processing and analysis of data collected.

3.2 Research design

For data collection and reporting requirements, a process or protocol for collecting data from respondents should be used and this system is planned (Ghauri & Gronhaug, 2005). Research used a descriptive design. This method is rated better for the analysis because it allows for a structured and excellently organized inspection, and the researcher cannot easily control the test variables because they have already happened and cannot be modified (Schindler, 2019). The study design of the report thus makes it easier, where appropriate, to derive relevant opinions on topic under scrutiny. The utilization of the chosen design was justified for the study as it took into account the current views and existing connections, and in addition the examination of variables under study. The scope of the study therefore allowed the researcher to align oneself with the findings of the study of the manufacturing firms based in Nairobi County and to determine the factors that affected the adoption of the computerized accounting system.

3.3 Target population

Population refers to a collection of objects that have required data by researcher for which judgment is derived. It is the entire group of individuals, events or objects that have a common observable characteristic. All elements must meet certain criteria for inclusion in a given universe (Mugenda, 2012). The population of study was medium and small sized manufacturing firms in Nairobi County. According to Kenya Association of Manufacturers database, 1328 manufacturing firms were registered as formal enterprises are located in Nairobi and its environments and was therefore considered for this study.

Table 3.1: Population of study

Sector	KAM Firms (Population size)	Confidence level 95% MOE 5% 1% proportion
Building, Mining and Construction	58	13
Chemical and Allied	115	14
Paper and Board	89	14
Pharmaceuticals & Medical equipment	36	11
Plastic and Rubber	106	14
Energy, Electrical and Electronics	67	13
Food and Beverages	272	15
Consultancy & Services	230	15
Textiles	85	14
Timber	40	12
Agriculture/Fresh produce	21	10
Leather	19	9
Metal	113	14
Automotive/Motor vehicle	77	13
Total	**1328**	**181**

Source: KAM

3.4 Sample and Sampling procedure

Samples must be broad enough to meet the main elements of the target and accessible population (Cooper, 2006). According to Mugenda & Mugenda (2012), Population must be controllable and, where population is minimal, it should all be used to ensure a detailed presentation of all items of the analysis. The study utilized the sample size calculation formulae that states that:

$\square 1-\square\square 2\square\square\square 2$ Where:

α = 95% confidence level

Z = 1.96 (z-score) assuming normal distribution

MOE = 5% (desired margin of error)

Sample proportion = 5%

Considering this sample size calculation formula and utilizing a sample size calculator, considering a target population of 1328 firms, 95% confidence level and 5% margin of error, sample proportion of 1% because the target population was large, then a sample size achieved was 181 firms and considered sufficient enough to fairly represent the overall target population. Based on this target sample of 181 firms and considering the proportional distribution of each stratum constituting the target population, then a target sample per stratum was calculated as a percentage of the overall population.

The sample size per strata was calculated as a percentage of the target sample size of 181 firms proportionate to the percentage contribution of that stratum to the overall target population of 1328 firms. The respondents were owners, finance managers and accountants. Having total of 181 firms chosen for study, the study targeted 50% owners of these firms, 50% of the finance managers in these firms and 100% of accountants working in this firms which arrived at 362 respondents. The sample size was extracted as 50% of the owners, finance manager and accountants which arrived at 181 total number of respondents. The sampling frame of this study was as follows;

Table 3.2: Sample size

Target group	**Study Population**	**Percentage**	**Sample size**
Owners	90	50%	45
Finance managers	91	50%	46
Accountants	181	50%	90
Total	**362**		**181**

3.5 Research instrument

Data was obtained using a structured questionnaire consisting of two sections. First part gathered information on the demographic characteristics of the respondents and the second part gathered information on the variables of the sample that are dependent and independent.

The standardized questionnaire saved time and encouraged a simple analysis of the results. Linkert was the measurement scale used.

3.6 Validity and reliability of the instrument

In order to test the validity of the instrument, a questionnaire was designed and forwarded to the instructor for clarification on obscurity, accuracy and further advice for correction, which was used as final draft. Validity was developed through a comprehensive analysis by numerous persons, including specialists, supervisors and other scholars. The insight gathered from them was of significance as the requisite corrections were made.

After different experiments on the research tool, the findings should be consistent. This dimension of accuracy in the results produced is reliability and thus the instrument is considered to be accurate (Yin, 2014). In order to test the reliability of the study tool, the pilot test was carried by giving over the questionnaire to a several participants who filled out the questionnaire and the required changes and corrections were made. Piloting was carried by distributing the questionnaires to 5% of the target population of small and medium-sized businesses and then reviewing the data obtained in order to determine whether the questionnaire was sufficiently designed to obtain the necessary data and fulfill the study objectives. (Triola, 2009; Mason, Gunst & Hess, 2003; Kvale, 2006).

3.7 Data collection procedure

Primary method was used as a method of data collection. The data was collected through a questionnaire that I personally distributed to firm owners, finance managers and accountants

to ensure the reliability of the data. That questionnaire was coded and only the researcher was able to recognize which person replied to the questionnaire. Situations in which the participants were unable to finish the questionnaire right away, the questionnaire were picked at later agreed time.

3.8 Data processing and analysis

Using a quantitative approach, data was analyzed and displayed using tables, bar graphs and pie charts. Data gathered through use of questionnaire execution and minimized to summary detail. Inaccuracies and discrepancies were tested for precision. The data gathered was assessed using Stata and Excel. Descriptive statistics used was absolute and relative frequencies, measurements of central tendencies and dispersion. Descriptive analysis incorporated the use of dispersion measurements, i.e. standard deviation and variance, absolute and relative frequency frequencies, central tendency measurements, including mean, mode and median. Multiple line regression analysis was used as a statistical method to estimate the correlation that existed therein. The regression model below was used to assess the influence of the independent variable on the dependent variable.

Where:

ß0 – Constant

ß1X1–Accounting expertise

ß2X2 – Technological change

ß3X3 –Cost

ß1 –ß3– Coefficient of independent variables

–Error

3.8.1 Diagnostic tests

Diagnostic tests done on the data included normality tests, multicollinearity tests, auto-correlation tests and heteroscedasticity tests.

3.8.1.1 Test for normality

The normality of the data was tested in time series. Reasons for testing normality. This is because it is necessary to check whether the data set is well modeled to fit a normal distribution, and to calculate the probability that the random variable that is the basis of the data set is normally distributed. Therefore, checking the outliers in the data will find out whether the data exhibits outliers, and thus significant skewness and kurtosis coefficients. Normality determines whether the survey data comes from a normally distributed population. Tested using a histogram.

3.8.1.2 Test for multicollinearity

Multicollinearity refers to the condition of high correlation between independent variables. Multicollinearity will cause standard errors and give wrong results, so it is necessary to check its existence before testing ordinary least squares regression models. A phenomenon in which two or more predictors are highly correlated in a multiple regression model, which means that one can predict linearly from the other with high accuracy. The general assumption of regression models is that the independent variables should not be highly correlated. This multicollinearity can be overcome by deleting one of the highly correlated variables. If the VIF value exceeds 10, it is said that there is multicollinearity. Use the variance inflation factor (VIF) to test for multicollinearity.

3.8.1.3 Test for autocorrelation

Autocorrelation is a condition in which the error term in regression model is independent. Autocorrelation test was conducted to check whether the error terms were correlated across time. It was tested using Durbin-Watson test.

3.8.1.4 Test for heteroscedasticity

Heteroscedasticity is a condition in which variance of dependent variable varies across the data. Heteroscedasticity was tested using white tests.

3.9 Ethical considerations

A letter of authorization was received from institution and other appropriate authorities before conducting research. An introductory letter was sent to the respondents outlining the general purpose of the main research objective. Total confidentiality was retained from the data generated by the respondents. The researcher made sure that the participants were able to participate in the research with no improper connection by maintaining confidentiality.

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.1 Introduction

The chapter summarized the findings of the study. It provided analyzed data; results obtained. Primary data was obtained from 181 small and medium-manufacturing companies in Nairobi County. Out of the 181 small and medium-manufacturing firms, data was obtained from 113 small and medium-manufacturing firms. The other 68 were unwilling to share their details and were therefore exempted from the analysis.

4.2 Response rate

This part analyzed the response rate.

Table 4.1: Response rate

ResponseRate	Freq.	Percent	Cum.
Responded	113	62.43	62.43
Not responded	68	37.57	100.00
Total	181	100.00	

The study targeted 181 manufacturing firms in Nairobi County. Responses were returned from 181 firms which represent a response rate of 62.43%. Consequently, this indicates that the rate of reply was sufficient for the study. Any response of 50% and above is adequate for analysis as Babbie (2002) posited.

4.3 Demographic information analysis

This part analyzed demographic information of respondents under the study.

4.3.1 Profile of the Respondents

This section presented and discussed results of the gender of respondents.

Table 4.2: Gender of respondents

Gender	Freq.	Percent	Cum.
Female	49	43.36	43.36
Male	64	56.64	100.00
Total	113	100.00	

Regarding gender of the respondents, Table 4.2 showed that majority of the respondents were male (56.64%) while female was (43.36%). This indicated that male gender dominates manufacturing industry. This may be due to labor intensity required.

4.3.2 Level of education

This section presented and discussed results the level of education of respondents.

Table 4.3 Level of education

Educationlevel	Freq.	Percent	Cum.
Undergraduate	51	45.13	45.13
Masters	29	25.66	70.80
Diploma	23	20.35	91.15
PhD	10	8.85	100.00
Total	113	100.00	

Table 4.3 demonstrated that majority of the respondents had undergraduate degree with 45.13%, followed by those with master's degree 25.66%, while those with Certificate/Diploma were 20.35% those with PhD were 8.85%. This indicated that most of manufacturing firms have staff who have undergraduate degree. This indicated that among

the economy, the undergraduate class are so many as compared with other classes. In addition, it meant that the cost of labor for undergraduate class was lower as compared with those with PhD and masters' qualification. It also indicated that the low percentage of the respondents with PhDs were the ones who own this firms while they employed those with masters to run the firms.

4.3.3 Position of education

This section presented and discussed results of position of respondent.

Table 4.4 Position of the respondent

Position	Freq.	Percent	Cum.
Owner	24	21.24	21.24
Finance Manager	31	27.43	48.67
Accountant	58	51.33	100.00
Total	113	100.00	

As shown in Table 4.4, most of the respondents were accountants 51.33%, followed by finance managers with 27.43% and owners with 21.24%. This indicated that most of the manufacturing firms have accountants full time in the offices as they are required to deliver reports eg production reports, purchases and sales reports, payables and receivables reports and reconciliation reports of the firm on need basis.

4.3.4 Period of operation in the firm

This section presented and discussed results of the period in which the respondent had been in the firm.

Table 4.5 Duration worked in the firm

DurationInTheFirm	Freq.	Percent	Cum.
1-5	26	23.01	23.01
6-10	32	28.32	51.33
11-15	30	26.55	77.88
Above 15	25	22.12	100.00
Total	113	100.00	

In Table 4.5, It is established that 23.01% had operated for 1 - 5 years, 28.32% had operated for 6 -10 years, 26.55% had operated for 11-15 years and 22.12% had operated above 15 years. Majority of the respondents have been in the manufacturing firm between 6-15 years. This indicated that the respondents were actively building their careers hence they remained in the firm without exiting. This may also have been due to lower positions that they held and they were not ready to change their careers as they looked forward to upward growth in the position. Other reasons may have been due to experience towards knowing the processes and how the sector operated in order to establish their own firm in future.

4.4 Computerized accounting systems adoption.

The study sought to establish factors affecting adoption of computerized accounting systems adoption by small and medium manufacturing firms in Nairobi county. The results were presented in in table 4.6 below.

Table 4.6 Adoption of computerized accounting systems

CASAdoption	Freq.	Percent	Cum.
Strongly Agree	73	64.60	64.60
Agree	30	26.55	91.15
Neutral	7	6.19	97.35
Disagree	3	2.65	100.00
Total	113	100.00	

From the study findings in table 4.6, majority 64.60% of respondents strongly agreed and another 26.55% agreed that computerized accounting systems are efficient for the production of reliable and accurate results and they are much more reliable than manual processes for the processing of financial statements. 2.65% of respondents disagreed that that computerized accounting systems were efficient for the production of reliable and accurate results and they were much more reliable than manual processes for the processing of financial statements. Only 6.19% of respondents neither agreed nor disagreed with this statement.

4.5 Accounting expertise

The study sought to establish the extent to which accounting expertise affected adoption of computerized accounting systems. The results were presented in table 4.7 below.

Table 4.7 Accounting expertise

AccExpertise	Freq.	Percent	Cum.
Strongly Agree	65	57.52	57.52
Agree	35	30.97	88.50
Neutral	8	7.08	95.58
Disagree	4	3.54	99.12
Strongly Disagree	1	0.88	100.00
Total	113	100.00	

From the study findings in table 4.7, majority 57.52% of respondents strongly agreed and another 30.97% agreed that accounting expertise affected adoption of the computerized accounting systems. 3.54% of respondents disagreed and 0.88% strongly disagreed that accounting expertise affected adoption of the computerized accounting systems. Only 7.08% of respondents neither agreed nor disagreed with this statement.

4.6 Technological change

The study sought to establish the extent to which technological change affected the adoption of computerized accounting systems. The results were presented in table 4.8 below.

Table 4.8 Technological change

TechChange	Freq.	Percent	Cum.
Strongly Agree	73	64.60	64.60
Agree	31	27.43	92.04
Neutral	5	4.42	96.46
Disagree	4	3.54	100.00
Total	113	100.00	

From the study findings in table 4.8, majority 64.60% of respondents strongly agreed and another 27.43% agreed that technological affected adoption of the computerized accounting systems. 3.54% of respondents disagreed that technological change affected adoption of the computerized accounting systems. Only 4.42% of respondents neither agreed nor disagreed with this statement.

4.7 Cost

The study sought to establish the extent to which cost affected adoption of computerized accounting systems. The results were presented in table 4.9 below.

Table 4.9 Cost

Cost	Freq.	Percent	Cum.
Strongly Agree	90	79.65	79.65
Agree	11	9.73	89.38
Neutral	7	6.19	95.58
Disagree	4	3.54	99.12
Strongly Disagree	1	0.88	100.00
Total	113	100.00	

From the study findings in table 4.9, majority 79.65% of respondents strongly agreed and another 9.73% agreed that cost affected adoption of the computerized accounting systems. 0.88% of respondents disagreed and 3.54% strongly disagreed that cost affected adoption of the computerized accounting systems. Only 6.19% of respondents neither agreed nor disagreed with this statement.

4.8 Descriptive Statistics

The study found it of critical value to evaluate the how adoption of CAS is affected by various factors, that is, Accounting expertise, Technological change and Cost. The mean, standard deviation, minimum and maximum values were evaluated as shown in table 4.1 below.

Table 4.10 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
AccExpertise	113	4.271681	.8544494	0	5
TechChange	113	4.477876	1.213741	0	5
Cost	113	4.39115	.7434905	0	5

From table 4.10, Accounting expertise had a mean of 4.3 with a standard deviation of 0.9. Technological change had a mean of 4.5 and a standard deviation of 1.2, Cost has a mean of 4.4 with a standard deviation of 0.7. The results show that the data is more concentrated around the mean hence the variance between the variables was small.

4.9 Analysis of variance (Anova)

Analysis of variance (ANOVA) is used to check if the means of two or more groups are significantly different from each other. ANOVA checks the impact of one or more factors by comparing the means of different samples.

Table 4.11: Analysis of variance

```
. oneway CASAd AccE

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups       67.684558      25   2.70738232     11.20     0.0000
 Within groups      21.0382738      87   .241819239
------------------------------------------------------------------------
    Total           88.7228319     112   .792168142

Bartlett's test for equal variances:  chi2(13) =  63.5056  Prob>chi2 = 0.000

. oneway CASAd TechC

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups       54.1052116      13   4.16193936     11.90     0.0000
 Within groups       34.6176202      99   .349672932
------------------------------------------------------------------------
    Total           88.7228319     112   .792168142

Bartlett's test for equal variances:  chi2(7) =  75.0282  Prob>chi2 = 0.000
```

```
. oneway CASAdoption Cost

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      42.3891592     20   2.11945796      4.21     0.0000
 Within groups      46.3336726     92   .503626876
------------------------------------------------------------------------
    Total           88.7228319    112   .792168142

Bartlett's test for equal variances:  chi2(12) =  93.0374  Prob>chi2 = 0.000
```

From table 4.11, Accounting expertise had a significant impact on adoption of CAS at F(25, 87) = 11.20 = 0.000, Cost had a significant impact on adoption of CAS at F(13, 99) = 11.90 = 0.000 and Technological change had a significant impact on adoption of CAS at F(20, 92) = 4.21 = 0.0000. A large F values indicates more difference between groups than within the groups. This shows that Cost has great effect on adoption of CAS than accounting expertise and technological change. The ANOVA results show that the model was significant at (F=0.0000, $P < 0.05$).

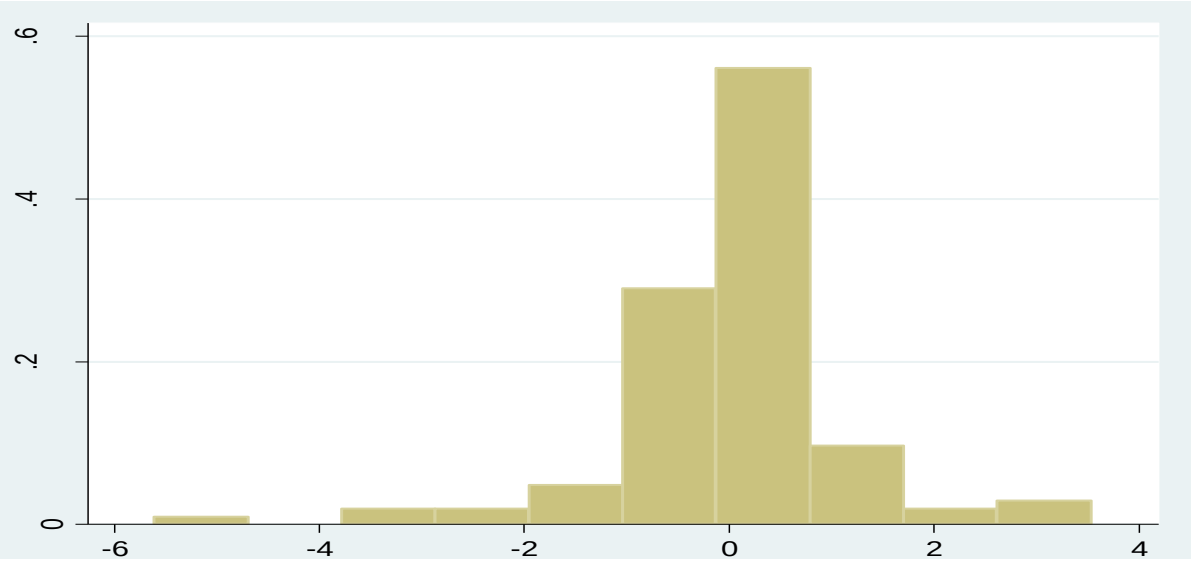
4.10 Diagnostic tests

As an outcome of the data obtained, diagnostic tests had to be conducted to ascertain the degree of normality, multicollinearity, heteroscedasticity and autocorrelation before applying it in running a regression model.

4.10.1 Test for normality

Normality test was done through use of histogram. The figure below showed test for normality test using histogram.

Fig 4.1: Test for normality



4.10.2 Test for multicollinearity

This study used a variance inflation factor (VIF) to test for multicollinearity of the study variables and the results are as indicated below;

Table 4.12 Test for multicollinearity

Variable	VIF	1/VIF
Accounting~e	2.02	0.496217
Technologi~e	1.65	0.605053
Cost	1.52	0.657009
Mean VIF	1.73	

Multicollinearity is said to exist if the VIF value is over 10. Accounting expertise had a VIF of 2.02 and a tolerance factor of 0.50. Technological change had a VIF of 1.65 and a

tolerance factor of 0.61 while Cost had a VIF of 1.52 and a tolerance factor of 0.66. All the VIF values were below 10 which was a clear indication that data was free from multicollinearity.

4.10.3 Test for autocorrelation

The study used the pair-wise correlation method to assess the autocorrelation.

Table 4.13: Test for autocorrelation

	CASAd	AccE	TechC	Cost
CASAd	1.0000			
AccE	0.7240	1.0000		
TechC	0.7243	0.6218	1.0000	
Cost	0.5015	0.5780	0.4335	1.0000

From table 4.10, there was an affirmative relationship between the results that indicated a positive correlation between Accounting expertise and computerized accounting system adoption (r =0.7240). This meant that accounting expertise affected adoption of CAS. There was a positive correlation between technological change and computerized accounting system (r = 0.7243). This meant that technological change had positive effect on adoption of computerized accounting system. There was a positive correlation between cost and computerized accounting system adoption (r= 0.5015). This meant that cost had effect on adoption of computerized accounting system by medium and small manufacturing firms in Nairobi county.

4.10.4 Test for heteroscedasticity

The study used Breusch-pagan test for heteroscedasticity. The rule is; if the P value is less than 0.05, there is heteroscedasticity.

Table 4.14: Test for heteroscedasticity

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of CASAdoption

         chi2(1)      =    69.30
         Prob > chi2  =   0.0000
```

Results from table 4.15 showed that there was no heteroscedasticity.

4.11 Regression Model Summary

The model examines relationship between independent and dependent variables of study.

Table 4.15 Regression model

Robust regression

Number of obs = 112
F(3, 108) = 35.61
Prob > F = 0.0000

CASAdoption	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
AccExpertise	.1499897	.0463116	3.24	0.002	.0581921	.2417874
TechChange	.0897146	.0318054	2.82	0.006	.0266707	.1527584
Cost	.1507239	.0473263	3.18	0.002	.056915	.2445328
_cons	2.789986	.1759327	15.86	0.000	2.441257	3.138715

The equation is as follows: Adoption of CAS = 2.7899+ $0.1499X_1$ + $0.0897X_2$ +0.1507X3

The results from table 4.6 shows that accounting expertise had positive relationship with adoption of CAS of small and medium sized manufacturing firms in Nairobi county. A unit change in accounting expertise resulted in 0.1499 increase in the adoption of CAS by small and medium sized manufacturing firms in Nairobi County.

Technological change was found to have a significant positive relationship with adoption of CAS in small and medium sized manufacturing firms in Nairobi County. A unit change in technological change resulted in 0.0897 increase in the adoption of CAS by small and medium sized manufacturing firms in Nairobi County.

Cost was found to have a significant positive relationship with adoption of CAS by small and medium sized manufacturing firms in Nairobi County. A unit change in technological change resulted in 0.1507 increase in the adoption of CAS by small and medium sized manufacturing firms in Nairobi County.

When there was no change in accounting expertise, technological change and cost, the computerized accounting system was 2.7899 which depicted a positive correlation. From

table 4.12, the predictor variables of accounting expertise and technological change and cost were significant because their values were below 0.05.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarized discussion of findings in previous chapter, study conclusions, recommendations drawn from findings, suggestions for further studies and limitations of study.

5.2 Summary

The objective of study was to establish the factors that affect adoption of computerized accounting systems adoption by small and medium manufacturing firms in Nairobi County. The study established that accounting expertise, technological change and cost affected computerized accounting system adoption by small and medium sized manufacturing firms in Nairobi County.

Accounting expertise had positive relationship with adoption of CAS of small and medium sized manufacturing firms in Nairobi county. A unit change in accounting expertise resulted in 0.1499 increase in the adoption of CAS by small and medium sized manufacturing firms in Nairobi County. Technological change was found to have a significant positive relationship with adoption of CAS in small and medium sized manufacturing firms in Nairobi County. A unit change in technological change resulted in 0.8971 increase in the adoption of CAS by small and medium sized manufacturing firms in Nairobi County. Cost was found to have a significant positive relationship with adoption of CAS in small and medium sized manufacturing firms in Nairobi County. A unit change in cost resulted in 0.1507 increase in the adoption of CAS by small and medium sized manufacturing firms in Nairobi County. When there was no change in accounting expertise, technological change and cost, the computerized accounting system resulted in 2.7899 which depicted a positive correlation. The predictor variables of accounting expertise and technological change were significant because their values were below 0.05.

Study established that accounting expertise affected computerized accounting system adoption by small and medium sized manufacturing firms in Nairobi County. These concurred with study done by Ismail (2009) which established that accounting information systems effectiveness is influenced by managers accounting knowledge. These also concured with study done by Kaluarachi (2016) which established that cost of implementation of the system is a common problem to the entrepreneurs. These also concured with reserch done by Al-Hiyari et al. (2013) which found out that lack of enough training which imparts knowledge of accounting information system affects accounting information system. The results also agreed with study done by Tilahum (2019) which found out that perceived ease of use of the software associated with knowledge of accounting systems affect the computerized accounting system adoption.

Research established that technological change affected computerized accounting system adoption by medium and small sized manufacturing firms in Nairobi County. Study concured with study done by Otieno (2015) which found out that acquisition and use of computerized accounting system was influenced by perceived ease of use of technology by executive managers of manufacturing firms. It also agreed with research done by Rogers (2016) which established that perceived ease of use of new technology affect computerized accounting system adoption. These also concurred with study done by Mose (2013) which established that change resistance and existence of old systems were identified as the challenges affecting the e-procurement adoption. Study done by Irefin et al (2012) concurred with these results where it established that availability of information communication technology infrastructure affect adoption of CAS.

The study established that cost affected computerized accounting system adoption by small and medium sized manufacturing firms in Nairobi County. These agreed with study done by Githinji et al, (2004) where the results established that computerized accounting

system adoption is affected by cost which is involved in acquisition of software. These also agreed with study done by Fortunata (2013) which found out that cost affect the adoption of the computerized accounting system. It also agreed with the study done by Amanamah et al (2016) which established that computerized accounting software was affected by cost of adoption leading to the low level of CAS usage. It also agreed with the study done by Simon (2015) which established that cost affects adoption of CAS.

5.3 Discussion of findings

The study aimed establishing factors affecting adoption of computerized accounting systems by medium and small sized manufacturing firms in Nairobi County. The study adopted a descriptive research design and employed primary data obtained from medium and small sized manufacturing firms in Nairobi County. The data obtained covered a period of 15 years 2004 to 2019. Factors targeted included accounting expertise, technological change and cost. Data was analyzed using Stata, with the observations being reported in tables. Diagnostic checks were conducted to verify that data was free from multicollinearity, heteroscedasticity and autocorrelation. The statistical findings were used to assess the relationship and relevance of the model.

From the study findings, majority of the respondents were male (56.64%) while female was (43.36%). This indicates that male gender dominates manufacturing industry. This may be due to labor intensity required. It was established that majority of the respondents had undergraduate degree with 45.13%, followed by those with master's degree 25.66%, while those with Certificate/Diploma were 20.35% those with PhD were 8.85%. This indicates that most of manufacturing firms have staff who have undergraduate degree. This indicates that among the economy, the undergraduate class are so many as compared with other classes. most of the respondents were accountants 51.33%, followed by finance

managers with 27.43% and owners with 21.24%. This indicates that most of the manufacturing firms have accountants full time in the offices as they are required to deliver reports. It was found out that 23.01% had operated for 1 - 5 years, 28.32% had operated for 6 -10 years, 26.55% had operated for 11-15 years and 22.12% had operated above 15 years. Majority of the respondents have been in the manufacturing firm between 6-15 years. This indicates that the respondents are actively building their careers hence they remain in the firm without exiting. This may also be due to lower positions that they hold and they are not ready to change their careers as they look forward to upward growth in the position.

The results indicated that majority 64.60% of respondents strongly agreed and another 26.55% agreed that computerized accounting systems are efficient for the production of reliable and accurate results and they are much more reliable than manual processes for the processing of financial statements. 2.65% of respondents disagreed that that computerized accounting systems are efficient for the production of reliable and accurate results and they are much more reliable than manual processes for the processing of financial statements. Only 6.19% of respondents neither agreed nor disagreed with this statement. In addition, majority 57.52% of respondents strongly agreed and another 30.97% agreed that accounting expertise affected adoption of the computerized accounting systems. 3.54% of respondents disagreed and 0.88% strongly disagreed that accounting expertise affected adoption of the computerized accounting systems. Only 7.08% of respondents neither agreed nor disagreed with this statement

The results also showed that majority 64.60% of respondents strongly agreed and another 27.43% agreed that technological affected adoption of the computerized accounting systems. 3.54% of respondents disagreed that technological change affected adoption of the computerized accounting systems. Only 4.42% of respondents neither agreed nor disagreed

with this statement. The findings also indicated that majority 79.65% of respondents strongly agreed and another 9.73% agreed that cost affected adoption of the computerized accounting systems. 0.88% of respondents disagreed and 3.54% strongly disagreed that cost affected adoption of the computerized accounting systems. Only 6.19% of respondents neither agreed nor disagreed with this statement.

5.4 Conclusion

Following the study findings, it was possible to conclude that accounting expertise, technological change and cost affected the adoption of computerized accounting systems by small and medium manufactruing firms in nairobi County. The first objective of the study aimed at determining the extent to which accounting expertise affected adoption of CAS by medium and small ssized manufacturing firms in Nairobi County. The study found a positive significant relationship between accounting expertise and adoption of CAS. Based on the findings, the study concludes that accounting expertise is a critical factor among small and medium sized manufacturing firms in Nairobi County. Having unexperienced accounting expertise leads to most of firms not adopting the CAS since they lack the required skills to interact with the systems.

The second objective of the study aimed at examining the extent to which technological change affected adoption of CAS by medium and small sized manufacturing firms in Nairobi County. Based on findings of the study technological change has a significant positive effect on the adoption of CAS. Technological change is a crucial factor since it affects adoption of CAS among small and medium sized manufacturing firms in Nairobi County. Current developments and advancements in products, services and process with new and advanced features changing from time to time affects firms fail to adopt the computerized accounting system.

Third and final objective of the study was to measure the extent to which cost affected CAS adoption by small and medium scale manufacturing firms in Nairobi County. The findings of study revealed that cost had a significant positive effect on the CAS adoption. Therefore, cost involved in trying to get systems in place, maintenance cost and trainning cost greatly affected the firms adopting the necessary accounting systems in place.

5.5 Recommendations

The research found that accounting expertise had a significant positive relationship with adoption of CAS by medium and small sized manufacturing firms in Nairobi County. The research therefore recommended that the owners and managers of small and medium sized manufacturing firms employ staff who had knowledge, experience and skills in accounting profession who are able to handle all the processes and systems placed in order to bring out the best results of the operations of the firm. There was a need to eliminate the unnecessary staff who didn't have the skills and experience since the inexpertise of the accounting profession affected firms having the proper systems in place.

The research found that technological change had a significant positive relationship with adoption of CAS by medium and small sized manufacturing firms in Nairobi County. The research therefore recommended that the owners and managers of medium and small sized manufacturing firms embrace change and adapt to the new developments and advancements since the world is so diverse. There was a need to understand that the technology was changing from day to day and that should not hinder them fom upgrading to the new processes and products and that led to more efficiency and effectiveness in operations of the firm in accounting matters. The research also recommended that the management of the companies which sell ICT systems and applications should offer support

for these systems since productivity, profitability, improved business processes and communication can be realized and enhanced through use of the system within the firm.

The research found that the cost had a significant positive relationship with CAS adoption by small and medium sized manufacturing firms in Nairobi County. The research therefore recommended that the owners and managers of medium and small scale manufacturing firms invest not to shying away from the cost since having a good systems in place, it reduced other expenditures which might be eliminated by having the systems in place. There was a need to ensure that the staff had proper training so as not to incur cost involved in training the unqualified staff.

5.6 Suggestions for further studies

The same research should be done in other sectors of the economy such as NGOs, primary and secondary educational institutions within Kenya. This research relied on primary data to draw conclusions, the same research should be carried employing both the secondary and the primary data. This research only tested three factors affecting adoption of CAS yet there are many other factors that affect adoption of CAS by medium and small sized manufacturing firms in Nairobi County. As such, research suggests more research into how other factors affects adoption of CAS. Future research ought to concentrate on a wider cross-section and much more globalized and broader randomized samples to validate the results of this present research. A further research should be carried to investigate why companies are reluctant in adopting the new CAS systems which have advanced features.

5.7 Limitations of the study

The drawback was seen through data collection, in that many owners and managers felt that release of sensitive information to the researcher was risky, even with affirmation that information was purely for research reasons and would be handled with confidentiality. Some firms had incorrect records of their locations thus the researcher could not find the firms at the location that is indicated by the firm's data therefore leading the researcher to go an extra mile of calling the organizations to confirm of their locations thus leading to delays.

REFERENCES

Agbozo & Yeboah, 2012. Exploring the financial gap for Small and medium sized Enterprises in Ghana. *Blekinge Institute of Technology, School of Management*.

Aizstrauta et al., 2014. Applying Theory of Diffusion of Innovations to Evaluate Technology Acceptance and Sustainability. *journal of computer science*, pp. 69 – 77 .

Ajibola & Oyedeji, 2018. Capital structure and financial performance of listed manufacturing firms in Nigeria. *Journal of Research in International Business and Management (ISSN: 2251-0028)*, 81-89.

Ajzen, 1987. Attitudes, Traits, and Actions: Dispositional Prediction of Behavior in Personality and Social Psychology. *Experimental Social Psychology*, 1-63.

Ajzen, I. & Fishbein, M. 1980. *Understanding attitude and predicting social behaviour.* United states: Englewood Cliffs: Prentice hall.

Ajzen, 1988. *Attitudes, Personality and Behaviour.* Milton Keynes: Open University.

Ajzen, 2011. The theory of planned behaviour: Reactions and reflections. *Psychology and health*, pp. 1113-1127.

Ajzen & Fishbein, 1975. *Belief, attitude, intention, and behavior : An introduction to theory and research.* Don Mills, Ontario: Addison-Wesley Pub. Co.

Ajzen & Madden, 1986. Prediction of Goal-Directed Behavior: Attitudes, Intentions, and Perceived Behavioral Control. *Experimental Social Psychology*,, 453-474.

Akanbi & Aruwaji, 2016. Effect of accounting information system adoption on accounting activities in manufacturing firms in Nigeria. *American Journal of Business and Management*, Pp. 1-11.

Akhtar, 2016. *Research Design.* New Delhi.

Alexander et al., 2016. Adoption of Computerized Accounting System by SMEs in Benin City. *International academic journal of economics*, Vol. 3, No. 1, 2016, pp. 48-65.

Al-Hiyari et al., 2013. Factors that Affect Accounting Information System Implementation and Accounting Information Quality: A Survey in University Utara Malaysia. *American Journal of Economics*, pp. 27-31.

Alnajjar, 2016. Impact of accounting information system on organizational performance: A study of small and mid-sizedenterprises in UAE. *International journal of accounting research*.

Amanamah et al., 2016. Computerized Accounting Systems Usage by Small and Medium Scale Enterprises in Kumasi Metropolis, Ghana. *Research Journal of Finance and Accounting*, pp. 1-14.

Amatete, B. W. 2016. *Evaluation of critical factors affecting pricing of real estate among low income people in Nairobi, Kenya.*

Ashraf et al., 2014. The Application of the Technology Acceptance Model under Different Cultural Contexts: The Case of Online Shopping Adoption. *Journal of International Marketing*.

Awosejo et al.,2014. Adoption of Accounting Information Systems in an Organization. *African Journal of Computing & ICT*, pp. 127 -136 .

Aziz, 2003. Accounting information system satisfaction and job satisfaction among Malaysian accountants. *Proceedings of the Pacific Asia Conference on Information.*

Bagh et al., 2016. The Impact of Working Capital Management on Firms Financial Performance: Evidence from Pakistan. *ternational Journal of Economics and Financial Issues*.

Bagozz, R.P. 1981. Attitudes, intentions, and behavior: A test of some key hypotheses. *personality and social psychology*, pp. 607 - 627.

Bandura, A. 1982. Self efficacy mechanism in human agency.

Behun et al., (2018. The impact of manufacturing industry on the economic cycle of European Union countries. *Journal of competitiveness*, pp. 23-39.

Bentler & Speckart, 1979. Models of Attitude-Behavior Relations. *Psychological*, 456-464.

Bhargava, 2004. Developing competitive advantage through SMEs to face WTO regime. *Journal of the Chartered Institute*, PP. 176–187.

Bodur et al., 2000. Belief, Affect, and Attitude: Alternative Models of the. *Journal of consumer psychology*, pp. 17-28.

Breen & Sciulli., 2002. Use of Computerized Record Keeping in Small Business. *Small Business Research Unit.*

Chau, 2001. An empirical assessment of a modified technology acceptance model. *Journal of management information systems*, pp. 185 - 204.

Chervany et al., 1999. Information Technology Adoption across Time: A Cross - Sectional Comparison of Pre - Adoption and Post - Adoption Beliefs. *MIS Quarterly* , pp. 183 - 213.

Christopher et al., 2014. Adoption of computerized accounting systems by coffee societies in Nyeri county, kenya. *European journal of business and social sciences*, pp. 88-103.

Cooper & Schindler, 2008. *Business research methods (10th ed.).* United States: McGraw-Hill Companies

Cooper, D. R. 2006. *Business research methods, 9th edition* . New York: McGraw-Hill.

Cox & Dearing, 2018. Diffusion Of Innovations Theory, Principles, And Practice. *National institute of health*, 37(2):183-190.

Cragg et al., 2002. IT Alignment and Firm Performance in Small. *Journal of Strategic Information Systems*, Pp. 109-132.

Dabor et al., 2016. Adoption of Computerized Accounting System by SMEs in Benin City. *International Academic Journal of Economics*, pp. 48-65.

Davis & Warshaw., 1992. Extrinsic and Intrinsic Motivation to Use Computers in the Workplace. *Journal of Applied Social Psychology*, pp. 1111 - 1132.

Davis, 1986. *A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results.* Massachusetts Institute of Technology.

Davis, 1989. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *Scientific research*, pp. 319-340.

Day, 2000. The value and importance of the small firm to the world economy. *European Journal of Marketing*, 1033–1037.

Deakins et al, 2001. *The Financial Management of the Small Enterprise.* London: The Association of Chartered Certified Accountants.

Dearing, J. & Cox, J. 2018. Diffusion Of Innovations Theory, Principles, And Practice. *Health affairs*, pp. 1-9. Retrieved from http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/BehavioralChangeTheories4.html

Dearing, J. W. 2009. Applying Diffusion of Innovation Theory to Intervention Development. *Center for Health Dissemination and Implementation Research,*, pp. 503–518.

Engineer, K. 2014. Challenges to industrialization and manufacturing in kenya. Nairobi, Nairobi, Kenya. Retrieved from https://www.kenyaengineer.co.ke:

https://www.kenyaengineer.co.ke/challenges-to-industrialization-and-manufacturing-in-kenya/

Enu & Havi, 2014. Manufacturing sector of Ghana: Are there any macro-economic disturbancces? *Asia Pacific journal of multidisciplinary research*, pp. 1-13.

Fishbein & Manfredo, 1992. A Theory of Behavior Change. *Theory and applications in recreation, tourism, and natural resources management*, 29-50.

Fishbein, M. & Ajzen, I. 1975. *Believe, attitude, intention and behaviour: An introduction to theory and research.* United states: Addison-Wesley .

Fortunata, 2013. *Factors for adoption of the computerized accounting system with the Tanzania Ministry of Health from the viewpoint of public hospitals in Arusha Distri.* Arusha: Mzumbe University.

Fowzia, R. & Nasrin, M. 2011. Appreciation of Computerized Accounting System in Financial Institutions in Bangladesh. *World Review of Business Research*, pp. 1 - 9.

Gaffney, 2018. Definition of a Computerized Accounting System. Retrieved from Toppr.com: https://www.toppr.com/guides/accounting-and-auditing/computerised-accounting-environment/features-of-computerized-accounting-environment/

Gaffney, C. 2018. Definition of Computerized Accounting Systems. *Computerized Accounting Systems*, pp. 492-503.

Ganyam, A. & Ivungu, J. 2019. Effect of Accounting Information System on Financial Performance of Firms: A Review of Literature. *Journal of Business and Management*, pp. 39-49.

Gelinas et al., 2005. *Acquiring ,developing and implementing Accounting Information systems.* Thomson South: Western Education College Cincinnati.

Ghasemi et al., 2011. The Impact of Information Technology (IT) on Modern accounting systems. *Procedia–Social and Behavioral sciences*, Pp. 112-116.

Ghauri & Gronhaug, 2005. *Research Methods in Business Studies: A Practical Guide, 3rd Edition.* New Jersey: Prentice Hall.

Githinji et al., 2014. The adoption of computerized accounting systems by coffee societies in Nyeri County Kenya. *European journal of business and social sciences*, pp. 88-103.

Githinji et al. (2014). The adoption of computerized accounting systems by coffee societies in Nyeri County Kenya. *European journal of business and social sciences*, pp. 88-103.

Habiba et al., 2019. computerized. *International Journal of Accounting, Finance and Business*, pp. 44 - 60.

Haleem, 2016. Factors affecting computerized accounting system with reference to government department in the Ampara district. *EPRA International Journal of Economic and Business Review*, pp. 130 - 139.

Haleem, 2016. Factors affecting comuterized accounting system with reference to government department in the Ampara district. *International Journal of Economic and Business Review*, pp. 130 - 139.

Harash et al., 2014. The influence of Accounting Information Systems (AIS) on performance of Small and Medium Enterprises (SMEs) in Iraq. *Journal of business management*, Pp. 48-57.

Hausenblas et al, 2019. Application of the Theories of Reasoned Action and Planned Behavior to Exercise Behavior: A Meta-Analysis. *Journal of Sport and Exercise Psychology*, pp. 36–51.

Hojjati & Khodakarami, 2016. Evaluation of factors affecting the adoption of smart buildings using the Technology Acceptance Model. *Advanced Networking and Applications*, pp. 2936-2943.

Hosseini et al., 2015. Application of the theory of reasoned action to promoting breakfast consumption. *Medical journal of the Islamic Republic of Iran*, Vol. 29, p1-8. 8p.

Irefin et al., 2012. factors affecting the adoption of Information and Communication technology in small and medium scale enterprises in Nigeria. *Australian Journal of Business and Management Research*, pp. 1- 9.

Islam, 2010. *Basic Accounting.* Bangladesh: Book Deport Publications.

Ismail & King, 2005. Firm Performance and AIS Alignment in Malaysian SMEs. *International Journal of Accounting Information Systems*, Pp. 241-259.

Ismail & King, 2006. The Alignment of Accounting and Information Systems in SMEs in Malaysia. *Journal of Global Information Technology Management*, Pp. 24-42.

Ismail & King, 2007. Factors Influencing the Alignment of Accounting Information Systems in Small and Medium Sized Malaysian Manufacturing Firms. *Journal of Information Systems and Small Business*, Pp. 1-19.

Ismail et al., 2003. Computer-based Accounting Systems: The Case of Manufacturing-based Small and Medium Enterprises in the Northern Region of Peninsular Malaysia. *Journal of technology*, 19-36.

Ismail, N. A. 2009. Factors influencing AIS effectiveness among manufacturing SMEs: Evidence from Malaysia. *The Electronic Journal on Information Systems in Developing Countries*, pp. 1-19.

James, 2013. The critical success factors and challenges in E-procurement adoption among large scale manufacturing firms in Nairobi, Kenya. *European scientific journal*, pp. 1-27.

Jayamaha, A. & Karunananda, A. 2011. Association of financial practices and performance of small and medium sized enterprises in Sri Lanka. *Digital repository* (pp. pp. 1-20). Sri Lanka: UoK Repository Home.

Kaluarachchi, 2016. *Adoption of Accounting Information System Practices by Entrepreneurs in Sri Lanka (with Special Reference to Polonnaruwa District).* Sri Lanka: Eastern University.

KAM, 2018. *Deep-Dive-Report.* Nairobi: KAM.

KAM, 2018. *KAM/KBG Sector Deep-Dive Report.* Nairobi: KAM.

KAM, 2019. *KAM membership*. Retrieved from KAM membership: http://kam.co.ke/membership/

Kariithi, J. N. 2017. Factors affecting performance of manufacturing firms in Kenya: a case of Phamaceuticals in Nairobi County. *The strategic journal of business and change management,* pp. 817-836.

Katz et al., 1963. traditions of research on the diffusion of innovation. *American socialogical review,* pp. 237-257.

Kelley et al., 2005. Information Systems Effectiveness in small business. *Journal of Global Information Management,*, Pp. 55-70.

Kenya National Bureau of Statistics, 2007. *Economic Survey.* Nairobi: Kenya National Bureau of Statistics.

Lee et al., 2011. Adding innovation diffusion theory to the technology acceptance model: Supporting employees intentions to use E-learning systems. *Journal of education and technology society,* pp. 1-285.

Lehmann, K. 2004. Innovation diffusion theory: Rogers and Bass Model. *Business economics,* pp. 1-8.

Levinson, 2018. Definition of the Manufacturing Industry. Retrieved from marketbusinessnews.com: https://marketbusinessnews.com/financial-glossary/manufacturing/

Liao et al., 2018. Applying Technology Acceptance Model (TAM) to explore Users' Behavioral Intention to Adopt a Performance Assessment System for E-book Production. *Journal of mathematics, science and technology education,* pp. 1-12.

Lu et al., 2003. Techology acceptance model for wireless internet. *Internet research,* pp. 1-18.

Lule et al., 2012. application of Technology Acceptance Model (TAM) in M-Banking Adoption in Kenya. *International Journal of Computing and ICT Research*, pp. 31-

Malait et al., 2017. Efficacy of Accounting Systems on the Performance of public universities in kenya; a case study of Egerton university. *International journal of scientific research publications,* pp. 464-474.

Masanja, 2019. Impact of Computerized Accounting system on financial performance for selected private companies in Arusha, Tanzania. *International journal of innovation in education and business*, pp. 1 - 7.

Mitchell et al., 2000. *Information System Development in the Small firms: The Use of Management Accounting.* CIMA Publishing.

Mohammed et al., 2016. Measuring the impact of application of computerized accounting information systems on hotels profitability. *Egyptian journal of tourism studies*, pp. 1-24.

Mose, J. 2013. The critical success factors and challenges in E-procurement adoption among large scale manufacturing firms in Nairobi, Kenya. *European scientific journal*, pp. 1-27.

Mugenda & Mugenda, 2003. *Research methods.* Eldoret: Science and Education Publishing Co. Ltd.

Mugenda, O. M. 2007. *Research method, qualitative and quantitative approaches* . Nairobi: African Centre for Technology Studies.

Mullan, B. 2010. The application of the theory of reasoned action to school nurses' behaviour. *Journal of Research in Nursing*, pp. 261–271.

Munaginghe, P. G. 2015. Factors influence on usage of computerized accounting system on small and medium scale enterprises. *International Conference on Contemporary Management,* pp.1-11.

Nongo, 2018. Accounting system as a tool of effective management of finance and local government in Benue state. *Research Journal of finance and accounting*, pp. 1-5.

Noor et al., 2003. Computer-Based accounting Systems: The case of manifacturing based small and medium enterprises in the Northern region of PeninSular Malaysia. *Journal of technology*, pp. 19-36.

Nyang'au et al., 2015. Constraints affecting adoption of computerized accounting systems in Nyeri County, Kenya. *International journal of economics, Commerce and Management*, pp. 1-19.

Olamide & Adeyemi, 2016. An Evaluation Of Accounting Information System And Performance Of Small Scale Enterprises In Kwara State, Nigeria. *DBA Africa Management Review*, 1-16.

Ollila & Lyytinen, 2003. Why organizations adopt information system process innovations: a longitudinal study using Diffusion of Innovation theory. *Information Systems*, pp. 275–297.

Otieno & Oima, 2013. Effects of Computerized Accounting System on Audit Risk Management in Public Enterprises, A case of Kisumu county. *International Journal of Education and Research*.

Otieno, 2015. Factors influencing Information communication adoption and usage by small and medium sized enterprises: The case of Nairobi based SMEs.

Otoko, B. O. 2016. *Effect of computerized accounting system on risk based internal auditing in Homa bay county goverment, Kenya.* Nairobi: University of Nairobi.

Oyanda, O. B. 2016. *Effect of computerized accounting system on risk based internal auditing in Homa bay county goverment, Kenya.* Nairobi: University of Nairobi.

Padachi, K. 2012. Factors Affecting the Adoption of Formal Accounting. *Business and Economics Journal*, pp. 1-22.

Padachi, K. 2012. Factors Affecting the Adoption of Formal Accounting systems by SMEs. *Business and economics journal*, pp. 1-22.

Pai & Huang, 2011. Applying the Technology Acceptance Model to the introduction of healthcare information systems. *Journal of science*, pp. 650-660.

Paimin et al., 2016. An Application of the Theory of Reasoned Action: Assessing Success Factors of Engineering Students. *International Journal of Engineering Education*, pp. 2426–2433.

Pemberton et al., 2016. Factors contributing to adoption and use of information and communication technologies within research collaborations in Kenya. *Information Technology for Development*, pp. 84-100.

Robertson et al., 1996. The role of networks in the diffusion of technological innovation. *Journal of mnagement studies,* pp. 333 - 359.

Robinson, 2009. A summary of diffusion innovations.

Rogers, 1962. *Diffusion of Innovations.* New York,: Macmillan Publishing Co., Inc.

Rogers, 2016. *Examining Small Business Adoption of Computerized Accounting Systems Using the Technology Acceptance Model.* Ohio: Walden University.

Romano & Netland, 2016. The Application of the Theory of Reasoned Action and Planned Behavior to Prevention Science in Counseling Psychology. *Journal of indexing & Metrics*, pp.163-183.

Rotich, 2017. The impact of accounting information systems on effectiveness of manufacturing firms in Kenya.

Rotich, E. 2017. *Impact of accounting information system on effeectiveness of manufacturing firms in kenya.* Nairobi: University of Nairobi.

Rotich, E. 2017. *The impact of accounting information systems on effectiveness of manufacturing firms in Kenya.* Nairobi: University of Nairobi.

Sasaki, M. 2018. *Application of diffusion of innovation theory to educational accountability: the case of EFL education in Japan.* Nagoya City: Sasaki Language Testing in Asia.

Schindler, P. 2019. *Business research methods.* New york: McGraw-Hill.

Strong et al., 2006. A first look at the accounting information systems emphasis at one university an exploratory analysis. *The review of Business Information systems*.

Sugut, 2014. The effects of computerized accounting system on the quality of financial reports on Non-Governmental Organizations in Nairobi County Kenya.

Sugut, O. C. 2014. *The effects of computerized accounting system on the quality of financial reports on Non-Governmental Organizations in Nairobi County Kenya.* Nairobi: University of Nairobi.

Temtime et al., 2003. Toward Strategic Use of IT in SMEs : A Developing Country Perspective. *Information Management and Computer security*, Pp. 230-237.

Terry et al., 993. Theory of reasoned action. Its implementation to Aids preventive behavior. *International series in experimental social psychology*, 255.

Tilahun, M. 2019. Determinants of computerized accounting information system adoption by Hospitals in Addis Ababa Ethiopia. *The Strategic Journal of Business & Change Management*, pp. 189 – 199.

Tilahun, 2019. A Review on Determinants of Accounting Information. *Science Journal of Business and Management*, 17-22.

Trafimow, 2009. The theory of reasoned action: A case study of falsification in psychology. *Theory and psychology*, pp. 501-518.

Ududechinyere et al., 2018. An analysis of the effect off manufacturing sector on the growth of thye Nigerian economy. *Journal of Business and Management*, pp. 34-46.

Vaghela & Kapadia, 2019. *An application of Technology Acceptance Model in understanding students behavioral intentions for use of internet banking in Surat city.* Surat city: S. R. Luthra Institute of Management.

Wang, W. & Liu, C. 2005. *The Application of the Technology Acceptance Model: A New Way to Evaluate Information System Success.* 840 Washington Avenue, Albany, NY 12203: Albany University.

Wani & Ali, 2015. Innovations diffusion theory: Review & Scope in the Study of Adoption of Smartphones in India. *Journal of general management research*, pp. 101–118.

Warshaw et al., 1989. User acceptance of computer technology: A comparison of two theoretical models. *Management science*, pp. 982‑1003.

Watanbe & Tanabe, 2005. Sources of small and medium enterprises excellent business performance in a. *Journal of Services Research*, PP. 5-20.

Xue, D. 2017. *Applying the Diffusion of Innovation Theory to Applying the Diffusion of Innovation Theory to Development Programs.* Lincoln: University of Nebraska.

Yin, R. 2014. Case study research design and methods (5th ed.). Thousand Oaks, CA: Sage. 282 pages. *Canadian Journal of Program Evaluation*, pp. 1-5.

APPENDIX

QUESTIONNAIRE

APPRAISAL OF THE FACTORS AFFECTING COMPUTERIZED ACCOUNTING SYSTEMS ADOPTION BY SMALL AND MEDIUM SIZED MANUFACTURING FIRMS IN NAIROBI COUNTY.

This research is solely academic and the respondents are assured that any details they share will be completely confidential. Your participation in supporting this research would be very much valued. Please click on the box that provides your opinion on the subject.

PART I

Demographic Information

1. What is your gender?

Male [] Female []

2. What is your highest level of education?

Certificate/Diploma [] Undergraduate degree [] Masters [] PhD []

3. Position being held

Owner [] Finance manager [] Accountant []

4. How long have you been with the organization?

1-5 [] 6-10[] 10-15[] Above 15[]

PART II

Table A1: Computerized Accounting System

Classify the following statements in each area of computerized accounting systems adoption

Scale: 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4= Agree; and 5= Strongly agree.

	Computerized Accounting System	**1**	**2**	**3**	**4**	**5**
1.	Accounting data in a computerized environment is secure than accounting data in the manual environment					
2.	Computerized accounting system holds and manages vast amounts of transactions with speed and precision.					
3.	Computerized accounting is flexible to manage increasing transactions.					
4.	Computerized accounting system make reports available whenever needed					
5.	There's less documentation in the computerized accounting system than in manual computerized systems.					
6.	Reporting under the computerized accounting system framework is versatile when compared with manual process.					
7.	Managing records of accounting in a computerized accounting system is easier than manual accounting systems.					
8.	Computerized accounting systems are much more reliable than manual processes for the processing of financial statements.					
9.	Updating, fixing and handling erroneous transactions is simpler when performed in a computerized accounting system.					
10.	Every form of transaction and statement can be handled in a computerized accounting system simultaneously.					

Table B1: Accounting expertise

Categorize extent to which accounting expertise affect computerized accounting systems adoption

Scale: 1 = Strongly disagree; 2 = Disagree; 3 =Neutral; 4= Agree; and 5= Strongly agree.

	Accounting expertise	**1**	**2**	**3**	**4**	**5**
1.	Users ' experience of the use of accounting software affects the acceptance of a company's computerized accounting system					
2.	Users ' familiarity with various accounting applications related to the accounting feature influences the adoption of computerized accounting systems					
3.	Knowledge of accepted accounting standards and procedures influences the implementation of computerized accounting systems					

4.	The complexity of user training affects the accounting system and influences the implementation of computerized accounting systems.					
5.	Users ' knowledge of the methods and procedures used in accounting systems affects the acceptance of computerized accounting systems					
6.	Educational qualification in the accounting practice influences the implementation of a computerized accounting system					
7.	Robustness of computerized accounting systems affects the application of computerized accounting systems					
8.	Lack of computer literacy limits the acceptance of computerized accounting systems					
9.	lack of consistency affects the implementation of computerized accounting systems					
10.	Perspective on a computerized accounting system affects the acceptance of a computerized accounting system					

Table C1: Technological change

Classify extent to which technological change affect computerized accounting systems adoption

Scale: 1 = Strongly disagree; 2 = Disagree; 3 =Neutral; 4= Agree; and 5= Strongly agree.

	Technological change	**1**	**2**	**3**	**4**	**5**
1.	Advanced products and services which bring extra relative value affect the implementation of computerized accounting systems					
2.	Advanced mechanism connected with technological transition affects the implementation of computerized accounting systems					
3.	Dissemination of computer use and creation of applications have an effect on the implementation of computerized accounting systems					
4.	Advances in technology and information revolution have affected the implementation of computerized accounting systems					
5.	Integrated usage of network computers and the internet affects the implementation of computerized accounting systems					
6.	Technological innovation tends to create systemic changes in the company that affect the costs of businesses and the restructuring of the operation.					
7.	Technology has had a significant influence, particularly on the awareness and efficiency of the accounting systems used in					

	accounting firms.					
8.	Accounting technology allows consumers to make rational choices that can boost the efficiency of businesses and devise management and planning techniques.					
9.	Technology advances have improved the capacity of accountants to analyze data competently					
10.	Time value of money and long-term benefits have an impact on continued use of computerized systems					

Table D1: Cost

Classify extent to which cost affect computerized accounting systems adoption

Scale: 1 = Strongly disagree; 2 = Disagree; 3 =Neutral; 4= Agree; and 5= Strongly agree.

	Cost	**1**	**2**	**3**	**4**	**5**
1.	High implementation cost influences the adoption of computerized accounting systems					
2.	Costs associated in training of employees in the accounting department affect the implementation of computerized accounting systems					
3.	Frequent servicing costs affect the implementation of computerized accounting systems					
4.	Cost-benefit view affects the implementation of the computerized accounting system					
5.	Installation cost affects the implementation of the computerized accounting system					

Thank You for your cooperation!