EVALUATING WOMEN PARTICIPATION IN INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) AMONG MSME'S IN ZAMBIA; A CASE STUDY OF CBD, LUSAKA.

BY

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A Dissertation submitted to the University of Zambia in partial for fulfillment for the requirement for the award of Master of Business Administration- General

THE UNIVERSITY OF ZAMBIA

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DECLARATION

I Muka Bwato hereby declare that this dissertation is my original works and has not been presented for any academic award at the University of Zambia or any other institution of learning.

Names

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Date ……

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CERTIFICATE OF APPROVAL

This dissertation is approved in fulfilment of the requirement for the award of Master of Business Administration General by the University of Zambia.

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Supervisor: Name……. Date…… Sign……..

Board Chairperson: …….. Date ……..……. Sign……..……

DEDICATION

I dedicate this dissertation to the Almighty GOD, the source of the wisdom and knowledge who has made me stand up to now. I am heavily indebted to my ever loving, supportive and caring mother- Ambassador Rose Mulemba Salukatula. My mother has been my source of inspiration and she encouraged me to pursue my Master of Business Administration at The University of Zambia. Special dedication to my younger brother Dr. Nawa, my sisters Lungowe and Chilombo. I wholeheartedly appreciate you all.

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LIST OF ABBRREVIATIONS/ ACRONOYMS

CBD - Central Business District

GEM – Global Entrepreneurship Monitor

ICT – Information and Communication Technology

IT - Information Technology

MSMEs – Micro, Small and Medium Enterprises

SMEs –Small and Medium Entrepreneurs

STEM – Science Technology Engineering and Mathematics

CDF - Constituency Development Funds

CEEC – Citizenship Economic Empowerment Commission

ABSTRACT

This study focused on evaluating women participation in ICT among MSMEs in CBD, Lusaka and the objectives were; to determine the prevalence of women's participation in ICT entrepreneurship across different enterprise levels (micro, small, and medium enterprises). The study used the TOE framework to formulate the variables that constitute this study. To identify the factors affecting women's participation in ICT entrepreneurship and to investigate strategies that have been put in place for women to stay in entrepreneurship and continue to add value to the economic wellbeing of the nation. The study involved a total sample size of 103 respondent, (97 questionnaires and 6 interviews). Mixed method involved was purposive and simple random which were used as sampling techniques. Data was collected using questionnaires and interview guide. Data was analyzed using SPSS version 27 for quantitative data while thematic analysis was used. Based on the findings, it is evident that there is a significant gender gap as far as evaluating women participation in ICT among MSMEs is concerned. Regarding the prevalence levels of women participation, the study showed that 24.7% were micro enterprise, while SMEs were 75.3% and medium enterprise was at 0%. The study further revealed that there are few women participating in the ICT domain among MSMEs in Lusaka despite revealing a keen interest among women in the ICT. The challenges identified included; limited access to necessary equipment, empowerment, and lack of public understanding of the industry, regulatory gaps, gender discrimination and biasness. This study recommended promoting STEM education, advocate for Gender inclusive, mentorship programs, encouraging networking events, curricula tailored to incorporate women participation in ICT among MSMEs.

Keywords: *Women participation, Micro, Small and Medium Enterprises, Evaluate, Information and Communication Technology, Central Business District*

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.0 INTRODUCTION

In this chapter, the study delves into the topic of women's involvement in Information Communication Technology (ICT) entrepreneurship in Zambia. The chapter offers a thorough overview of the research topic, covering the background, statement of the problem, the aim and objectives of the study, the importance of the study and its scope.

1.1 BACKGROUND

Entrepreneurship is a crucial driver of economic growth, productivity, innovation, and employment, and is widely recognized as a key aspect of economic dynamism. Transforming ideas into viable economic opportunities remains a pivotal challenge in the realm of entrepreneurship. The ongoing digital revolution is profoundly altering the way humanity lives, works, and interacts, and the rapid growth and adoption of Information and Communications Technologies (ICTs) have the potential to improve access to information, services, and foster collective action for economic development (Kanakulya, et al., 2020)

ICT is the technology required for information processing, in particular, the use of electronic computers, communication devices and software applications to convert, store, protect, process, transmit and retrieve information from anywhere, anytime. Information refers to the knowledge obtained from reading, investigation, study or research. Everyone needs information to make decisions and to predict the future. For example, scientists can detect the formation of a tsunami using latest technology. Communication is an act of transmitting messages. It is a process whereby information is exchanged between individuals using symbols, signs or verbal interactions (Mazurczyk & Aksjonova, 2018). With the advent of technology, the use of ‘older’ means of communication such as symbols and signs have been less utilized as compared to the use of internet, e-mail or video conferencing. Technology is the use of scientific knowledge, experience and resources to create processes and products that fulfill human needs. Technology is vital in communication. [1]

[1] *ibid*

Small firms may be difficult to define precisely on paper, but most are very easy to recognize once they are seen in operation (Dube & Puneet, 2021).Not only because of the greater likelihood of facing small and medium enterprises, due to greater share compared to large businesses, but also because of the simpler practices and structures, SMEs are relatively easily distinguishable from superficial survey.

Bolton Report published in 1971, the primary reference for qualitative definition of SMEs for all subsequent literature in the field, defines three essential characteristics of small firms: management of firm by its owner(s) in a personalized manner; relatively small share of the market in economic terms; independence in the sense that it does not form part of a larger enterprise is relatively free from outside control in its principal decisions.

The ICT sector remains a buoyant and growing sector for economic growth, a key factor that enhances national development. Advancements in ICT are occurring on an incredible scale in many countries that have translated to a definite abundance of wealth and opportunities for their entire people. During the first half of the 2000s, the United States (US), but also some European Union Member States (notably Ireland, the Netherlands, and Finland) and some other OECD countries (e.g. US, Australia and Canada), have recorded a resurgence of economic growth and productivity, steady of declining inflation and diminishing unemployment through the deployment of ICT. A study conducted by (Aleke, et al., 2011), revealed that in Poland, ICT investment contributed on average 0.47 of a percentage point or 8.9% of the Gross Domestic Product (GDP) growth and 12.7% or 0.65 of percentage point contribution to labor productivity between 2000-2005.

The past decade has witnessed an increasing body of evidence showcasing the positive socio-economic impact of access to and utilization of ICTs, particularly in developing countries. For instance, increased mobile phone penetration in developing contexts can boost GDP by up to 1.2% for every 10% increase (Papastathopoulos & Beneki, 2010). Additionally, studies indicate a positive relationship between income generation, mobile phone ownership, and internet usage (Elaigwu, 2018). However, gender disparities persist in accessing and benefiting from digital technologies in Zambia.

A great number of women in developing countries, Zambia in particular, engage in running small businesses. The most valuable application of IT for women small business owner is information, accessing information to facilitate their business, generating and disseminating information about the business (Denscombe, 2014). There are many ways of using the internet to do business, from making contacts and checking prices to displaying goods and entering into contracts. Women entrepreneurs in developing countries can secure gains from IT with little technical training for instance after an internet workshop for members of the Association for Support to Women Enterprise (ASAFE) in Cameroon. Bio-vital, an ASAFE member that manufactures cosmetics made from local herbs and plants use the internet to locate a French company that now buys 80 per cent of its production (Dillman, et al., 2014).

In Zambia, as in many other countries, the winds of digital transformation have swept across the nation, fundamentally altering the landscape of business, education, governance, and everyday life. The proliferation of smart phones, the expansion of broadband networks, and the emergence of innovative digital solutions have set the stage for unprecedented opportunities.

In the Zambia context, women entrepreneurs primarily fall into two categories: traditional and innovative. The traditional category consists of women who initiate businesses due to economic hardships at home, contributing to the push factor in the economy. On the other hand, innovative women entrepreneurs are motivated by limited career progression in large firms and display ambition and dedication towards their businesses. According to the Zambia Business Survey (2010), male entrepreneurs accounted for 58%, while females constituted 42% of the entrepreneurial landscape. Despite the changes in Zambia's business environment over the past decade, female participation in entrepreneurship has shown a consistent trend (Zulu, 2015).

However, despite the transformative potential of women MSMEs in ICT, a glaring gender gap persists within the Zambian entrepreneurial ecosystem. Women, who constitute half of the nation's population and possess a wealth of untapped potential, remain underrepresented in ICT entrepreneurial activities. This gender disparity not only represents a missed opportunity for economic empowerment but also raises critical questions about the principles of equity, inclusivity, and social justice.

To appreciate the gravity of this issue, it is essential to acknowledge the multifaceted nature of the digital gender divide. At its core, this division encompasses unequal access to digital resources, skills, and opportunities (Huyer, 2016). In Zambia, as in many developing nations, women often face barriers such as limited access to education, cultural norms, and biases that deter their active participation in the ICT sector.

Moreover, the gender division extends beyond access and entry into the ICT workforce. It permeates the entrepreneurial sphere, manifesting in the underrepresentation of women-owned ICT startups, limited access to funding, and inadequate support structures (Czernich, 2011). These disparities paint a disheartening picture, not only stifling the potential of individual women but also hampering the nation's overall economic growth.

The need for a comprehensive evaluation of women's participation in ICT entrepreneurship within Zambia cannot be overstated. By understanding the root causes of this gender gap, the study can begin to dismantle the barriers that impede women's progress in this sector. Moreover, recognizing the vital role of ICT in shaping the future, ensuring gender-inclusive entrepreneurship in this domain is not just an imperative for gender equality but also a strategic move for the nation's sustainable development.

1.2 Problem Statement

A study conducted by (Berg & Roald, 2018) in South Africa suggested that “small and medium enterprises are the centerpieces of many economic development initiatives and women in MSME’s constitute more that 40% of the economic population worldwide”. (Dube & Puneet, 2021) state that “ICTs could be an effective tool for women in MSME’s to develop business” as they are able to establish themselves in their various types of business, be it jewelry making, web design or selling crafts.

By fully utilizing ICTs the women in MSME’s can contribute to the economic growth of their countries, improve their communities and at the same time afford comfortable lives for their families. This will lead to improved families which are engines of the communities, thereby leading to a better nation which is economically empowered (Aleke, et al., 2011).

According to (Brush, et al., 2019), “ICTs have emerged as a major driver of employment in the developed world. They are increasingly seen as an important pillar for economic growth in Zambia. Growth and prosperity in the Zambian economy has however, not been realized to its full potential. This has been due to lack of meaningful participation by women in the national economy and particularly in ICTs”. (Huyer, 2016) say that the absence of women’s participation is a contributing factor to the under development of the country, since women constitute most of the population. Further analysis od this important factor can help to explain unemployment, rampant poverty and high levels of crime in many communities.

(Elaigwu, 2018) says that, “women can become economic agents: because of their actions, they are capable of changing the faces of their communities. In order to have an effective and sound economy, there is a need to match these women’s businesses with the relevant ICTs for their businesses”. (Mwirigi & Ouma, 2017) report that ICTs have the power to rectify the inequalities created by society, as they are able to equip disadvantaged groups, such as women. ICTs can provide women with platforms to air their views on important issues such as health and politics and provide opportunities for them to run their businesses, Gurumurthy (2006:613).

According to (Mathur-Helm, 2005:56) women are still lagging behind in economic empowerment because of being a disadvantaged gender group. The economic environment is tailor made to suit men who have been enjoying the economic benefits while women were being left out by society. (Brush, et al., 2019) advise that poverty eradication and the empowerment of historically disadvantaged groups can be addressed using ICTs as the key solution. (Huyer and Siskin, 2003:5) have deduced that ICTs could be tools for women’s active participation in improving their situations. Simple access to information and improved communication may end the isolation of women in MSMEs. ICTs have the power to turn around the lives of women, if they have access to them.

According to the (business survey, 2010), male entrepreneurs account for 58%, while females constituted 42% in Zambia. A study conducted recently by the Global Entrepreneurship Monitor (GEM) in Zambia, shows that there are less women MSMEs than men despite women being more in number, in terms of population than men. Absence of gender disaggregated indicators calls for targeted interventions to address imbalances in the ICT sector (Mwansa & Mwaanga, 2019). In

addition, the ICT policy lacks gender-focused references emphasizing the importance of this study (Chisenga, 2016).

From the foregoing discussion, it is clear to see that it is imperative to evaluate the participation of women in ICT among MSME's in Zambia owing to the important role that they play in the economic growth of the country and to help bridge the gender gap in the development of ICT technologies in the country. Therefore, this research will evaluate women participation in information and communication technology in Zambia, specifically in Lusaka.

1.3 Aim of the Research

The study is aimed at comprehensively evaluating women participation in ICT among MSMEs in CBD Lusaka, Zambia.

1.4 Research Objectives

I. To determine the prevalence of women's participation in ICT across different categories (micro, small and medium enterprises MSMEs).
II. To identify factors influencing women involvement in ICT.
III. To establish strategies that promote participation among women MSMEs in ICT.

1.4 Research Questions

i. What is the prevalence of women`s participation in ICT in Zambia?
ii. What are the factors influencing women`s involvement in ICT?
iii. What strategies promote participation among women MSMEs in ICT?

1.5 Significance of the Research

- Women are as capable as their male counterparts, so it is important to study the reasons that have brought about the low presence of women in ICT among MSMEs in Zambia.
- Furthermore, this study will give insights to policy makers and stakeholders in government institutions to develop strategies in ICT aimed at encouraging gender inclusive among MSMEs in the country.

1.6 Scope of the Study

- This study focused on evaluating women participation in information and communication technology (ICT) among Micro, Small and Medium sized Enterprises (MSMEs) in CBD Lusaka.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

The purpose of this chapter is to review what researchers on global, regional and Zambian context say about the participation of women among MSMEs in ICT. The objective of literature review is to lay a theoretic framework for the study. A study done by (White, 2000:67), stated that "literature provides a study that is useful, especially when researchers lack a clear idea of the problems they will meet during the study." Additionally, (Cooper and Schindler, 2008: 102) explains that, "your goal when conducting a literature review is to achieve, broaden, and compare your understanding with that of others". This chapter will identify the research gaps that the study aims to fill.

2.1 Defining ICT and ICT Entrepreneurship

A study done by (Duncombe and Heers, 2001) defined ICT as the 'electronic means of capturing, processing, storing, and disseminating information.' Studies done by ((Dube & Puneet, 2021) use the term ICT to refer to computerized systems and to advanced telecommunication systems. Advanced telecommunications systems include 'voice mail, fax technology, teleconferencing and wireless communication such as, cellular phones. (Ndhlovu & Nkhoma, 2018) indicated that ICT umbrella term that includes all information technologies for manipulation and communication information.

The OECD and EU definitions of ICT include the following categories as telecommunications; consumer electronics; computers and office machinery; measurement and control instruments; and equipment and electronic components (Hamoud, 2010). Principally, "ICT-Entrepreneurs" refer to any firm or business that is involved direct or indirect with any kind of ICT product and services, such as computer sales, Internet services and digital printing (Haag, Cummings & McCoubrey, 2005). Online services such as online payment and delivery, hosting, includes online base business are categorized into ICT based business as well as argued by (Papastathopoulos & Beneki, 2010).

Entrepreneurship is a broad term, and many different definitions have been used by a variety of authors. Entrepreneurship is defined as an activity that involves the discovery, evaluation and exploitation of opportunities to introduce new goods and services, ways of organizing, markets,

processes and raw materials through organizing efforts that previously had not existed.[2] A study done by (Kanakulya, et al., 2020) revealed that entrepreneurs are new businesses or combinations that arise in the face of risk and uncertainty for the purpose of achieving profit and growth. From the above definitions it is safe to assume that factors that distinguish entrepreneurs most strongly are risk taking, innovation, opportunity recognition, process, and growth in a business and employment of strategic management practices in the business. 'Innovation involves finding new and better ways of doing things that are commercialized whilst scientific invention entails the creation of a new product or concept almost for its own sake or to serve a purpose other than commerce' (Rwigema & Venter, 2005, p.113). This study focuses on the analysis of entrepreneurial ventures related to ICT.

2.2 Defining MSME

The definition of MSME in Zambia is not so easy to put into context of reality because it is based on the MSME policy which was last revised in 2008. The operational environments of the majority of businesses have been impacted by numerous events during the last 16 years, some of which include the rebasing of the kwacha and modifications to other policies that been an impact on businesses directly or indirectly. However, since the definitions are based on different facets, this study uses facets of the definition that apply perfectly to the current study. To properly illustrate the definition of MSME in Zambia we consider the aid of a table 2.1 below.

[2] *Ibid*

Table 2.1 Definition of MSMEs

	Micro	Small	Medium
Registration with Registrar of Companies	Yes	Yes	Yes
Investment (excluding land and buildings)	K80,000	K80,000 – K200,000	K200, 000 – 500,000
Investment Services and Trading	K80,000	K150,000	K151,000 – K300,000
Turnover	K150, 000	K150,000 – K250,000	K300,000 – K80,000
Employment	1-10 workers	11-49 workers	51-100 workers

Source: The Micro, Small and Medium Enterprise Development Policy, MCTI November 2009

According to the policy, to qualify as an MSME, the legal status and total investment criteria must be met together with at least one other criterion. ZBS noted that the guidelines do not distinguish between full-time and part-time workers, paid in cash versus paid in-kind workers, and between unpaid versus paid workers. Findings from the ZBS show that over 95 percent of firms with less than 50 employees in Zambia are unregistered. Over 96percent of firms have sales of less than K150, 000, and over 97 percent of firms have fewer than 10 workers. This study will use the criteria of total investment and number of workers as a guide for categorizing enterprises.

2.3 Theoretical Framework

2.3.1 Technology-Organization-Environment Framework

The Technology-Organization-Environment (TOE) framework is a theoretical framework that was developed in the field of information systems to explain how the adoption and use of new technologies are influenced by various factors, including the characteristics of the technology itself, the organizational context in which it is used, and the external environment in which the organization operates (Smith, et al., 2011). The framework has been widely used in research on technology adoption and implementation in organizations, and it has proven to be a valuable tool for understanding the complex interplay between technology, organization, and environment.

The TOE framework consists of three main components: technology, organization, and environment. Technology refers to the characteristics of the technology itself, including its functionality, complexity, compatibility with existing systems, and ease of use. Organization refers

to the internal context in which the technology is used, including factors such as the organization's size, structure, culture, and resources. Environment refers to the external context in which the organization operates, including factors such as market conditions, regulatory requirements, and social and cultural norms.

The Technology-Organization-Environment (TOE) is best considered relevant to this study. Technology-Organization-Environment (TOE) framework according to (Tornatzky and Fleischer, 1990) proposed that the adoption of innovations depends on organizational, environmental as well as technological factor. In general, the TOE model is an integrative schema that incorporates the characteristics of the technology, contingent organizational factors, and other elements from the macro-environment such as policies, institutional opportunity, as well as constraints.

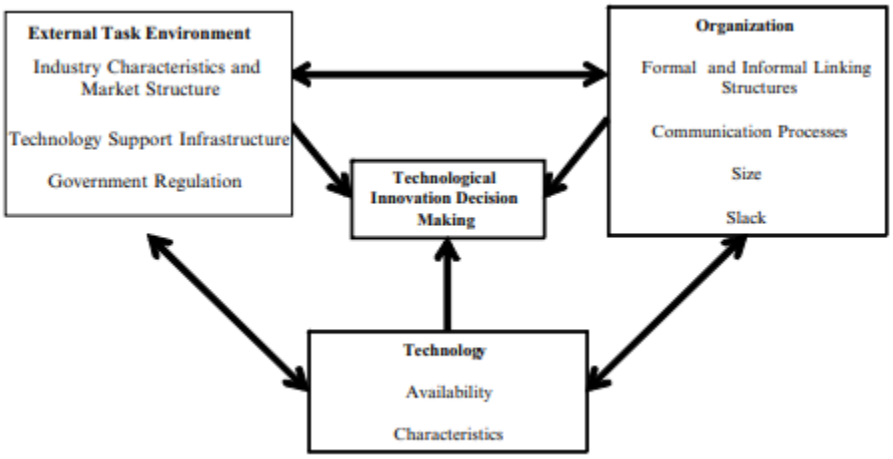


Figure 2.1 12.1 The technology–organization–environment framework

2.3.2 Cultural Boundaries Theory

The Cultural Boundaries Theory posits that cultural norms and traditional belief systems often act as barriers to the establishment and growth of female-owned and managed enterprises. Female entrepreneurs frequently face underestimation and neglect, primarily due to cultural impediments such as rigid gender roles, which often designate women as inherently inferior to men. This perception is particularly pronounced in rural areas, where gender-stereotyped views persist, associating women with characteristics like lack of confidence and assertiveness. The fear of taking risks becomes a significant hindrance as entrepreneurial activities, including ICT, are

perceived as more suitable for men, given their perceived riskiness and time-consuming nature (Mwobobia, 2012).

2.3.3 Feminist Theory

The Feminist Theory, as advocated by (Cron, Bruton, and Slocum, 2006), asserts that men and women should be equal politically, economically, and socially. This theory forms the core of gender equality studies in entrepreneurship. Cultural feminism, a component of feminist theory, contends that fundamental personality differences exist between men and women. It recognizes the subordination, inequality, and oppression experienced by women and acknowledges their deprivation of education, industry experience, networking relationships, and access to capital (Appelbaum, Audet, and Miller, 2003; Cron, Bruton, and Slocum, 2006). In many cases, women's entrepreneurial activities are relegated to the micro and informal sectors, primarily for subsistence purposes (Aleke, et al., 2011).

2.3.4 Resource-Based Theory

Resource-Based Theory, as established by (Conner, 1992), emphasizes the significance of entrepreneurship within a resource-based framework. It revolves around the effective utilization of tangible and intangible resources to gain a competitive edge and foster economic growth (Kantor, 2003). 50.5% of Zambians are women (Bank, 2021)), a significant group that has the potential to revolutionize the nation’s technological landscape through entrepreneurship. However, cultural norms and biases, as highlighted in the feminist theory, limit women's opportunities to initiate and expand enterprises. This theory raises two critical issues: first, the acknowledgment that while technology is recognized as a driver of economic development, few women are actively involved in technology entrepreneurship. Second, due to this underrepresentation, women receive limited or no resource empowerment.

2.3.5 Inferior Education Background Theory

When examining the Resource-Based Theory, (Kanto, 2003) underscores experience and education as crucial resources for ICT entrepreneurs' successful and sustainable operations. Unfortunately, Africa is renowned for its policies that promote unequal access to education,

traditionally prioritizing boys over girls. While the gender gap in primary education has decreased in recent years, it remains substantial at secondary and tertiary levels. This educational disparity reduces women's chances of acquiring the knowledge necessary to excel in business, access training, and other business development services. In today's digital economy, literacy skills such as reading and writing are essential for efficient enterprise management, hindering women's participation (Mwobobia, 2012). Furthermore, women's limited representation in policy-making bodies, partly attributed to their inferior education compared to men, exacerbates the problem (Commonwealth Secretariat, 2002).

2.5 Women in ICT Entrepreneurship: Global Perspectives

A study by (Global Entrepreneurship Monitor, 2019) indicates that women remain underrepresented in ICT entrepreneurship. While significant progress has been made in recent years, women-owned ICT businesses are still a minority.

Another global study done by (Brush, et al., 2019) indicates that access to financial resources and venture capital is a major challenge for women entrepreneurs in the ICT sector worldwide. Gender biases in investment decisions and limited access to funding networks hinder women's growth in this domain.

A study by (Faulkner, 2000) illustrates that there is a well-established association between men and technology. Even recent global studies indicate that more men than women have access to ICTs (cf. Huyer & Carr, 2002; Polikano and Abramova, 2003; Wamala, 2010). Despite efforts to enable rural populations to engage in the information revolution, persistent digital divides rooted in cultural structures that marginalize women, confining them to domestic roles, continue to exist. This limits their mobility and exposure, keeping education and exposure out of reach for many women.

Despite the immense potential of digital technologies, not everyone benefits equally. A gender gap persists in terms of ICT access and usage, disproportionately affecting women and girls at the lower end of the economic spectrum. Recent data from the International Telecommunications Union (ITU) suggests that, on average, 12% fewer women than men have internet access, and this gap has increased over the past few years (ITU, 2016). This gender disparity permeates the entire ICT ecosystem: Women and girls are not only underrepresented as ICT users but also within the

ICT industry itself, including startups, technology companies, and ICT-related jobs in general. In the development context, men are 2.7 times more likely than women to work in the digital sector (World Bank, 2016).

According to (International Labor Office, Bureau for Gender Equality, 2010). Women entrepreneurs face numerous barriers that hinder them from fully capitalizing on emerging economic opportunities, enhancing productivity in their enterprises, and accessing higher-value job opportunities with increased income-generating potential.

A study by (European Commission, 2013) statistics show that fewer women are graduating with ICT-related degrees. From a sample of 1,000 women with bachelor's degrees in Europe, only 29 hold an ICT-related degree, compared to 95 men. Furthermore, only four out of the 1,000 women work in the digital sector. This gap in this study is the population (sample size) used is not the sample used in this research. There is also knowledge gap as this study focused on both men and women graduates not women MSMEs in ICT.

In a study done by (World Bank, 2016) in the United States, the proportion of female graduates majoring in computer science dropped from 36% in the early 1980s to just 18% in 2010 (NPR, 2014). Globally, women hold only 24% of all digital sector jobs (World Economic Forum, 2016), and in developing countries, men are 2.7 times more likely to work in the digital sector. When women do enter the digital sector, they tend to occupy administrative roles or low-paid, low-skilled positions.

A study by (Chang, 2013) based on interviews with women managing or working in ICT firms in Kenya revealed that the "fear of mathematics and sciences, which are important in the pursuit of technology, is a result of negative attitudes instilled in girls during socialization at home and in school." Additionally, ICT courses often tend to be costly and "dominated by men." Successful women in the field credited parental support, motivation, and mentorship, often from male mentors already working in ICT.

2.6 African Region Context

A study by (WISAT, 2011) conducted in 2009 in South Africa revealed that South African women accounted for only 22 percent of those with undergraduate degrees in science, engineering, and

technology, despite representing 57 percent of all university enrollments. The gap in this study is area, population, sample size and the knowledge gap as the focus was on undergraduates in South Africa.

A study by (James et al., 2006) showed that Women entering the ICT sector in South Africa face challenges such as work-life balance issues, the undervaluation of women's contributions at work, adverse stereotypes, a lack of women role models, reentry difficulties due to the rapid pace of change in ICT, and a lack of guidance regarding career options.

2.7 Zambian Context

In the Zambian context, a study done by (Kasonde and Alghazo, 2019) examined access to finance for women entrepreneurs in Zambia, with a focus on the banking industry. The quantitative study involved 150 women entrepreneurs and 30 banking professionals. Key findings highlighted the gender disparities in access to funding, with women facing challenges in securing startup capital for ICT ventures, including gender biases in lending practices.

(Ndhlovu & Nkhoma, 2018) conducted a quantitative research study to explore the role of education in women's participation in ICT entrepreneurship in Zambia. They surveyed 200 female entrepreneurs and 50 ICT educators. The study revealed that limited access to quality ICT education posed a significant barrier, impacting women's ability to bridge the digital skills gap and succeed in ICT entrepreneurship.

Studies conducted by (Mwirigi and Ouma, 2017) employed a mixed-methods approach to investigate the influence of entrepreneurship education, networking, and mentoring on the success of women in ICT entrepreneurship in Zambia. They conducted surveys with 120 female entrepreneurs and held in-depth interviews and focus group discussions. Key findings emphasized the significance of support mechanisms, including mentoring and networking, in facilitating women's engagement in the sector.

(Ngoma and Phiri, 2016) conducted a case study on women in technology in Lusaka, Zambia. Their qualitative research included in-depth interviews with 15 successful women entrepreneurs in ICT. The study provided qualitative insights into the inspiring role models that exist within the Zambian ICT entrepreneurship landscape.

(Musonda, 2019) employed a qualitative research design to examine the impact of ICT entrepreneurship training programs on women's empowerment in Zambia. The study involved in-depth interviews and focus group discussions with 40 women who participated in training initiatives. Key findings revealed the positive effects of capacity-building programs in equipping women with the necessary skills for entrepreneurial success in the ICT sector.

A study by (Kanakulya, Ruhinda, and Musenze, 2020) utilized a mixed-methods approach to investigate the impact of e-commerce on women's empowerment, focusing on women entrepreneurs in Zambia. They surveyed 300 women entrepreneurs and conducted qualitative interviews. Key findings emphasized the role of digital platforms in expanding market access for women in ICT entrepreneurship, particularly in urban areas.

2.8 Knowledge Gap

A study done by (Brush et al., 2019) took a holistic approach by focusing on women in entrepreneurship on a global perspective while this study focused on evaluating women MSMEs in ICT in Lusaka Centre Business District-(CBD). Another study by (Faulkner, 2000) the cases presented in these reports showed the area gap as it was not done in Zambia and the sample size gap showed that the focus was on men and women which was not the same as the sample of this research since this study focused on women alone in ICT hence the knowledge gap A study by (James et al., 2006) on ICT sector in South Africa looked at challenges women face such as work-life balance issues while this study is based on the evaluation of Women participation in ICT. Ngoma and Phiri (2016) conducted a case study on women in technology in Lusaka, Zambia. The gap in this study is that it only used the qualitative approach, smaller sample size and only focused on successful women in ICT while this study embraced a mixed method approach and focused on all women MSMEs in ICT.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter outlines the research methodology employed in this study to investigate and analyze the participation of women in Information Communication Technology (ICT) entrepreneurship in Zambia. It encompasses the research design, data collection methods, sampling techniques, data analysis procedures, and ethical considerations. The methodology chosen aligns with the research objectives, enabling a comprehensive exploration of the factors influencing women's involvement in ICT entrepreneurship within the Zambian context.

3.1 Research Design

Research design is the conceptual structure within which research is conducted and includes the collection and analysis of data which are relevant to the research ((Kothari, 2004). McMillan & Schumacher (2001) defines it as a plan showing the approach and strategy of investigation selected to obtain reliable and valid data that achieves the research objectives and answers research questions effectively. Hussein (2020) further explained that research methodology deals with the general regulations and principals for organizing a research activity. The overall universal research activity corresponds with the research philosophy research design chosen for this study was carefully crafted to provide a comprehensive understanding of women's participation in Information Communication Technology (ICT) entrepreneurship in Zambia. It incorporated both quantitative and qualitative approaches to capture the multifaceted nature of the phenomenon. This section will provide an expanded explanation of the research design, along with relevant references.

3.1.1 Quantitative Approach

The quantitative component of the research involved the systematic collection of numerical data through structured questionnaires. This approach is instrumental in quantifying various aspects related to women's involvement in ICT entrepreneurship, such as access to resources, business performance, and the impact of government policies.

Quantitative research is widely acknowledged for its ability to generate statistically significant findings that can be generalized to a larger population (Creswell & Creswell, 2017). In this study, the use of questionnaires allowed for the efficient collection of data from a sizable sample of women entrepreneurs in the ICT sector, enhancing the reliability and validity of the results.

3.1.2 Qualitative Approach

The qualitative dimension of the research encompassed in-depth interviews and focus group discussions with women entrepreneurs, industry experts, and policymakers in the ICT sector. Qualitative research is essential for exploring the lived experiences, perceptions, and attitudes of individuals and gaining a deeper understanding of the intricate factors influencing their entrepreneurial journey (Creswell and Poth, 2018).

In-depth interviews provide a platform for participants to share their narratives and insights, offering valuable qualitative data (Smith, Flowers, & Larkin, 2009). Focus group discussions, on the other hand, encourage interactive conversations among participants, facilitating the exploration of shared experiences and perspectives (Krueger and Casey, 2015).

3.1.3 Mixed-Methods Approach

The choice to employ a mixed-methods research design, which combines quantitative and qualitative approaches, is grounded in the recognition that the research question at hand is multifaceted and demands a comprehensive investigation (Creswell & Plano Clark, 2017). By integrating both types of data, this study aimed to triangulate findings, allowing for a more holistic understanding of women's participation in ICT entrepreneurship.

The mixed-methods approach aligns with the call for methodological pluralism in social research, as it acknowledges the complexity of social phenomena and seeks to provide a more robust foundation for drawing meaningful conclusions (Johnson and Onwuegbuzie, 2004).

The integration of quantitative and qualitative data not only enriches the depth of analysis but also enhances the validity of the study's findings through data convergence (Creswell, 2017). By employing this approach, the study aimed to bridge the gap between quantitative statistics and qualitative narratives, offering a comprehensive portrayal of the research topic.

3.3 Conceptual Framework

In the context of the current study, the TOE framework is used to show that the participation women in ICT among SMEs is determined by the influence of technological, organizational and environmental factors. Other theories like Unified Theory of Access and Use of Technology (UTAUT), and Diffusion of Innovation Theory (DIT) -focused more on the adoption of technology by individuals rather than by organizations and as such offered a partial explanation for the organizational adoption of technology and for this reason, they were not detailed enough for this particular study.

According to Awa, (Ukoha and Emecheta, 2016), the theories of TAM and TOE specifically target technology acceptance and most popularly showcase many Information Systems studies that explain end-user adoption at organizational level and equally observed that the pace of diffusion of any innovation has been tracked down by the proposed adoption models which includes: technology acceptance model (TAM Davis, F. (1989), theory of reasoned action (TRA; Ajzen & Fishbein, 1980), Theory of Planned behavior (TPB; Ajzen, 1991 Ajzen, (1991), Innovation Diffusion Theory (IDT; Rogers, 2003); Stage Model (SM; Poon & Swatman, 1999; technology-environment-organization (TOE; Tornatzky & Fleischer, 1990 and resource-based view (Caldeira & Ward, 2003). These theories apply to the adoption and use technology, though in different ways, but their central roles were connected to relating use of technology to various factors that could determine such use and application using appropriate constructs with their interpretations.

This study makes use of the of the environmental characteristics of the TOE framework and the macro-environmental factors in order to evaluate the participation of women in ICTs among MSME's in Lusaka, Zambia. The macro-environmental factors include economic factors, social factors, individual factors, educational factors and policy interventions by the government. The lay out of these factors is displayed in figure 3.1 below.

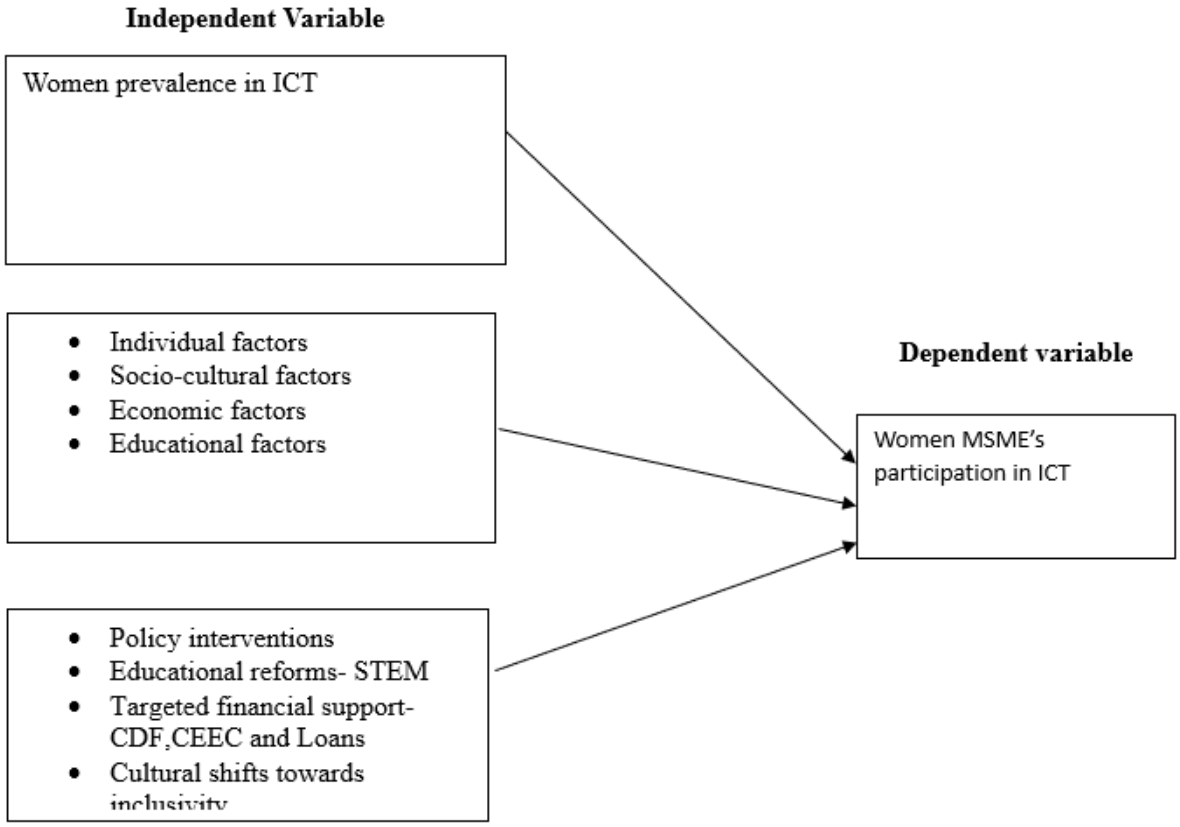


Figure 3.1 Variables based on the TOE framework.

3.3 Data Collection Methods

The process of data collection in this study involved a careful selection of methods to ensure the acquisition of comprehensive and meaningful information regarding women's participation in Information Communication Technology (ICT) entrepreneurship in Zambia. This section will elaborate on the data collection methods employed, supported by relevant references.

3.3.1 Questionnaires

Structured questionnaires served as a fundamental tool for data collection in the quantitative phase of this study. Questionnaires are recognized as a robust method for gathering structured, standardized data from a large sample of participants (Dillman, et al., 2014). In the context of this research, they were specifically designed to capture quantitative data related to various facets of women's involvement in ICT entrepreneurship.

The structured nature of questionnaires facilitates consistency in data collection and allows for efficient data entry and analysis (Fowler, 2013). They were distributed to women entrepreneurs in the ICT sector across the CBD in Lusaka, providing a quantifiable basis for understanding factors such as access to resources, challenges faced, and the impact of government policies on their businesses.

3.3.2 Interview Guide

In-depth interviews constituted a critical part of the qualitative data collection process. Interviews are widely acknowledged for their ability to delve deep into individuals' experiences, perspectives, and narratives (Rubin and Rubin, 2012). They provide a platform for participants to express their views and insights in a detailed manner.

The semi-structured interviews conducted in this study allowed for open-ended questioning, enabling participants to share their unique stories and viewpoints on the challenges and opportunities within the ICT entrepreneurship landscape. The qualitative data gathered through interviews added depth and context to the quantitative findings.

3.4 Data Analysis

The data analysis process in this research was a systematic and rigorous endeavor that involved both quantitative and qualitative data. It aimed to uncover patterns, themes, and insights regarding women's participation in Information Communication Technology (ICT) entrepreneurship in Zambia. This section will provide an expanded explanation of the data analysis methods used in this study.

3.4.1 Quantitative Data Analysis

Quantitative data collected through structured questionnaires were analyzed using statistical software. This analysis involved several key steps:

Descriptive Statistics: Descriptive statistics, including measures such as mean, median, and standard deviation, were computed to summarize the quantitative data. These statistics provided a snapshot of various aspects related to women's involvement in ICT entrepreneurship, such as their access to resources, business performance indicators, and the impact of government policies.

Inferential Statistics: Inferential statistics, including t-tests and regression analysis, were employed to test hypotheses and determine relationships between variables. For example, regression analysis was used to explore the factors influencing the success of women-owned ICT businesses.

Cross-Tabulations: Cross-tabulations were conducted to examine relationships between categorical variables. This allowed for a deeper understanding of how factors like education level or years of experience related to specific outcomes in ICT entrepreneurship.

3.4.2 Qualitative Data Analysis

Qualitative data from in-depth interviews and focus group discussions were subjected to thematic analysis. Thematic analysis is a widely used method for identifying, analyzing, and reporting patterns (themes) within qualitative data (Braun and Clarke, 2006). The following steps were followed:

Data Familiarization: Transcripts from interviews and focus group discussions were thoroughly reviewed to become familiar with the content. This process helped in identifying recurring ideas and themes.

Initial Coding: Initial codes were generated to label meaningful segments of data related to the research questions. These codes were often descriptive and captured key concepts or ideas.

Theme Development: Codes were then grouped into broader themes based on their relevance and similarity. This process involved constant comparison of data to ensure that themes accurately represented the data.

Refinement and Interpretation: Themes were refined and refined, and interpretations were developed. This phase involved a deeper exploration of the significance of each theme and how they related to the research objectives.

3.5 Integrations of Quantitative and Qualitative Findings

Integration of findings from both quantitative and qualitative data was a critical step in this research. The results from quantitative analysis were triangulated with qualitative insights to provide a comprehensive understanding of women's participation in ICT entrepreneurship.

The integrated findings allowed for a nuanced portrayal of the challenges and opportunities faced by women entrepreneurs in the ICT sector in Zambia. It facilitated a more holistic interpretation of the research questions, going beyond numbers to capture the lived experiences and narratives of the participants.

In conclusion, the data analysis process in this study was a meticulous combination of quantitative and qualitative methods. It involved descriptive and inferential statistics for quantitative data and thematic analysis for qualitative data. The integration of these findings provided a robust foundation for drawing meaningful conclusions and making evidence-based recommendations.

3.6 Ethical Considerations

Ethical considerations are of paramount importance in any research study, and this research on women's participation in Information Communication Technology (ICT) entrepreneurship in Zambia is no exception. Ensuring the ethical treatment of participants and the responsible conduct of research was central to the design and execution of this study. Here, we elaborate on the ethical considerations that guided our research process.

Informed Consent: Obtaining informed consent from all participants was a fundamental ethical principle adhered to in this research. Prior to participating in interviews, focus group discussions, or completing questionnaires, participants were provided with detailed information about the study's purpose, procedures, potential risks, and benefits. They were also informed about their right to withdraw from the study at any point without repercussions. Only those who willingly agreed and provided their informed consent were included in the research.

Anonymity and Confidentiality: Protecting the privacy of participants was a top priority. All data collected, whether through questionnaires, interviews, or focus group discussions, were anonymized. Participants were assured that their responses would be treated confidentially, and no personally identifiable information would be disclosed in the research report. Pseudonyms were used in reporting qualitative findings to further protect participants' identities.

Minimizing Harm: Every effort was made to minimize harm or discomfort to participants. Sensitivity to potentially distressing topics, such as experiences of discrimination or challenges faced in entrepreneurship, was paramount. Adequate support mechanisms were in place, and

participants were provided with information about available resources for counseling or assistance, should they require it.

Researcher Neutrality: The research team maintained a neutral and non-biased stance throughout the study. While the research aimed to address gender disparities in ICT entrepreneurship, it did not promote any particular agenda or viewpoint. Objectivity was maintained in data collection, analysis, and reporting.

Beneficence: The research sought to benefit the broader community by shedding light on the challenges and opportunities faced by women in ICT entrepreneurship. The findings aimed to inform policy decisions and initiatives to promote gender equality in this sector, potentially leading to improved economic opportunities for women.

Data Security: Strict data security measures were employed to protect the integrity and confidentiality of data. Digital records were securely stored, and access was restricted to authorized members of the research team. Hardcopy records were stored in locked cabinets.

Research Approval: Ethical approval for the study was obtained from the relevant institutional review board or ethics committee. This approval included a thorough review of the research design, data collection methods, and ethical safeguards.

Cultural Sensitivity: Cultural sensitivity was vital in conducting research in Zambia. The research team respected local customs, norms, and practices. Efforts were made to build rapport and trust with participants by acknowledging and respecting their cultural backgrounds.

Feedback to Participants: In line with ethical principles, participants were offered the opportunity to receive feedback on the research findings if they desired. This allowed participants to engage with the study's outcomes and contribute to the dissemination of knowledge.

3.7 Limitations

Every research study faces limitations that may impact the scope and generalisability of its findings. In this research on women's participation in Information Communication Technology (ICT) entrepreneurship in Zambia, several limitations were encountered. It is essential to

acknowledge these limitations to provide a clear understanding of the study's boundaries and potential sources of bias.

1. Limited Access to Participants: One significant limitation was the challenge of accessing and reaching the targeted participants. Despite concerted efforts to engage women entrepreneurs in the ICT sector, not all intended participants were reached. Some women entrepreneurs were difficult to contact, which may have resulted in a potential selection bias. Additionally, some managers were hesitant to allow their employees to participate in the study, suspecting it to be politically involved. This reluctance further limited the pool of participants.

2. Potential Response Bias: In cases where participants were hesitant to respond due to political suspicions or other reasons, a response bias may have been introduced. Those who chose not to participate or were discouraged from participating may have unique perspectives or experiences that were not captured in the study.

3. Cross-Sectional Nature of Data: The data collected in this study were cross-sectional, providing a snapshot of women's participation in ICT entrepreneurship at a specific point in time. This limited the ability to explore changes and trends over time, as well as the causal relationships between variables.

4. Self-Reported Data: Much of the data collected, especially through questionnaires and interviews, relied on self-reported information from participants. Self-report data can be subject to social desirability bias, where participants may provide responses, they believe are socially acceptable rather than entirely truthful.

5. Limited Generalizability: While the findings of this research provide valuable insights into the experiences of women in ICT entrepreneurship in Zambia, it is important to acknowledge that the results may not be fully generalizable to other contexts or regions. Zambia's unique socio-economic and cultural factors may influence the dynamics of women's entrepreneurship differently than in other countries.

6. Limited Qualitative Sample Size: Although qualitative data collection methods were employed, the sample size for in-depth interviews and focus group discussions was limited due to resource constraints. While these qualitative insights added depth to the study, a larger sample size may have provided more comprehensive perspectives.

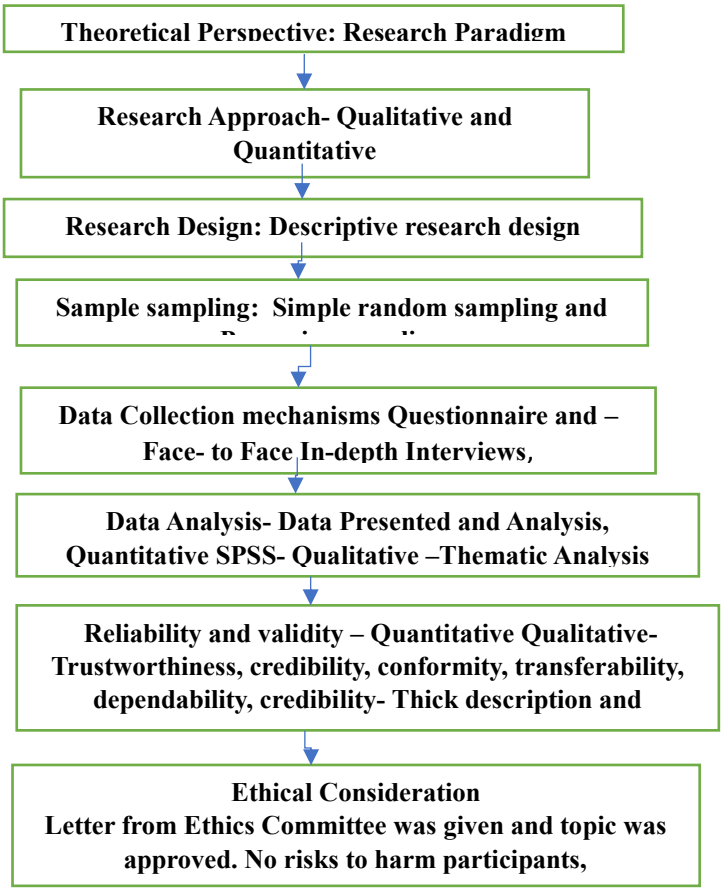
7. Political Suspicions: As mentioned earlier, the study encountered political suspicions from some participants or their employers. This suspicion may have influenced their willingness to participate fully or disclose certain information.

Despite these limitations, this research contributes valuable knowledge to the understanding of women's participation in ICT entrepreneurship in Zambia. The findings, while context-specific, offer insights that can inform policy and initiatives aimed at promoting gender equality and economic empowerment in the ICT sector.

3.8 Conclusion

This chapter has provided a comprehensive overview of the research methodology employed in this study. The combination of quantitative and qualitative approaches, along with various data collection methods, will facilitate a thorough exploration of women MSMEs participation in ICT entrepreneurship in Zambia. The following chapter will present the findings and analysis based on the data collected using this methodology.

3.9 Summary of Research Methodology

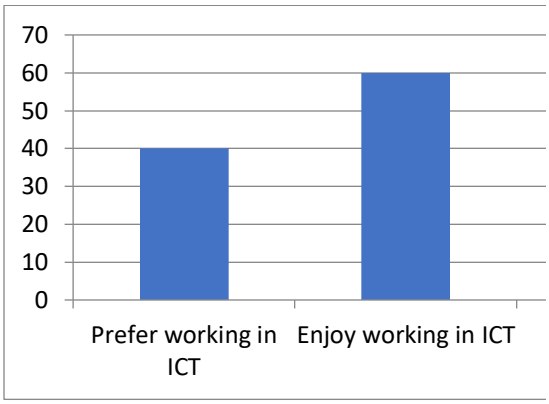


CHAPTER FOUR: PRESENTATION OF FINDINGS

4.1 Introduction

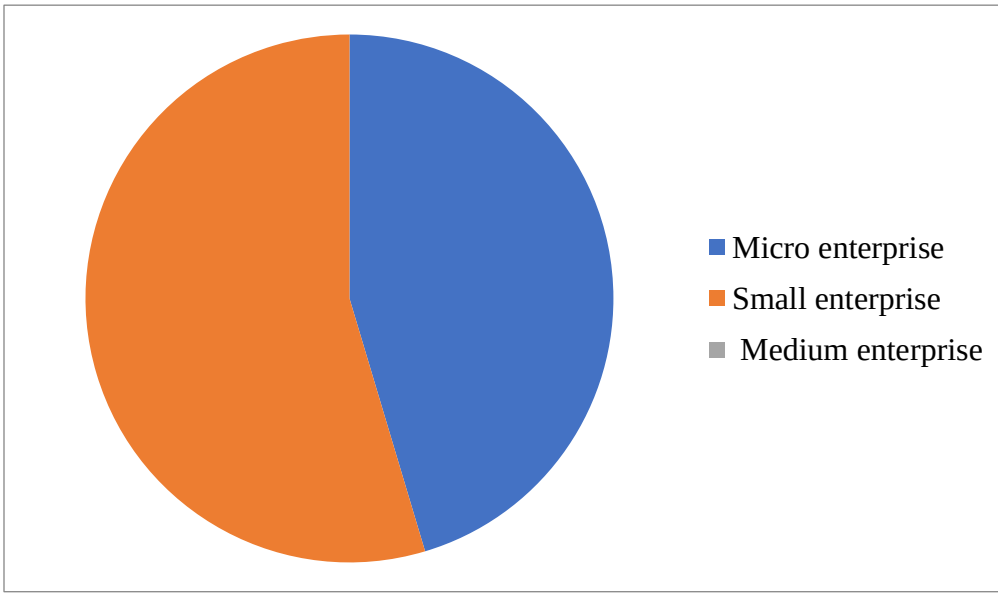
In this chapter, the study delves into the empirical findings and analysis derived from our study on women's participation in Information Communication Technology (ICT) entrepreneurship in Zambia. This section serves as the culmination of our research efforts, offering both quantitative insights and qualitative narratives to elucidate the dynamics, challenges, and opportunities that shape the landscape of ICT entrepreneurship for women in this context. The study targeted 120 participants, however, only 97 participants responded to the questionnaire resulting in 81% retention. Through a rigorous examination of the collected data, we aim to provide a comprehensive understanding of the factors influencing women's engagement in ICT entrepreneurship and offer valuable insights for policy and practice.

Objective 1: To establish the prevalence of women's participation in ICT entrepreneurship in Zambia.



Graph 4.1: Preference for working in ICT Business

Graph 4.1 illustrates respondents' attitudes towards working in ICT. The graph illustrates that 40% of the respondents prefer to work in ICT while 60% of the respondents actually do enjoy working in ICT. In addition, from the responses collected using the questionnaire, a substantial portion of 38.1% of the respondents were neutral, while an almost equal number agreed of 38.1% agreed to work in the ICT sector. A smaller percentage of 8.2% strongly agreed while a few of the respondents completely disagreed to being involved in ICT representing 2.1% of the total number of respondents while strongly disagreed (13.4%).



Pie chart 4.1: Prevalence of Women Participating in ICT

Pie Chart 4.1: presents a cross-tabulation of respondents based on their level of enterprise and their direct involvement in technical solutions for ICT. Among those in Micro Enterprises, the majority (62.3%) affirmed their involvement, while 37.7% indicated otherwise. In the Small Enterprise category, a higher proportion (75%) reported direct involvement, with 25% not being directly involved. No respondents from Medium Enterprises provided data for this category. In total, 68% of respondents affirmed their involvement in technical solutions for ICT, while 32% did not. This indicates a significant level of engagement, particularly in Micro and Small Enterprises.

Table 4.1:Chi-Square

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.793[a]	1	.181		
Continuity Correction[b]	1.255	1	.263		
Likelihood Ratio	1.815	1	.178		
Fisher's Exact Test				.197	.131
Linear-by-Linear Association	1.775	1	.183		
N of Valid Cases	97				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.06.
b. Computed only for a 2x2 table

Table 4.1 Chi-square tests

The Chi-Square Tests indicate the statistical significance of the association between two categorical variables. In this analysis, the Pearson Chi-Square value is 1.793 with 1 degree of freedom, yielding an asymptotic significance of .181. The Continuity Correction Chi-Square is 1.255, resulting in an asymptotic significance of .263. The Likelihood Ratio Chi-Square is 1.815 with a significant value of .178. Fisher's Exact Test, which is computed for 2x2 tables, has a two-sided significance of .197 and a one-sided significance of .131. The Linear-by-Linear Association Chi-Square is 1.775 with 1 degree of freedom, and a significance level of .183. It's important to note that in this analysis, no cells have an expected count of less than 5, ensuring the reliability of the results.

Table 4.2: Regression Model

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.409[a]	.167	.070	4.615

a. *Predictors: (Constant), Education Factors, Level of Employment, Individual factors, Age (How old are You?) , Social Cultural Factors, Monthly Basic Pay: , Economic Factors, Marital Status, Experience at your current employment:, Highest level of Education:*

The Model Summary table provides an overview of the regression model's performance. In this analysis, the model's R-value is 0.409, indicating a moderate positive correlation. The R Square value, which represents the proportion of the dependent variable's variance explained by the independent variables, is 0.167, indicating that approximately 16.7% of the variance is accounted for. The Adjusted R Square, a modified version of R Square that adjusts for the number of predictors, is 0.070. The Standard Error of the Estimate is 4.615, representing the average error between the observed and predicted values. The predictors in this model include Education Factors, Level of Employment, Individual factors, Age, Social Cultural Factors, Monthly Basic Pay, Economic Factors, Marital Status, Experience at current employment, and highest level of Education.

Table 4.3:ANOVA Model

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	367.769	10	36.777	1.727	.087[b]
	Residual	1831.674	86	21.299		
	Total	2199.443	96			

a. Dependent Variable: How many Women are employed at your workplace or in your department:

b. Predictors: (Constant), Education Factors, Level of Employment, Individual factors, Age (How old are You?), Social Cultural Factors, Monthly Basic Pay: , Economic Factors, Marital Status, Experience at your current employment:, Highest level of Education:

The ANOVA table assesses the variance in the dependent variable, "How many Women are employed at your workplace or in your department," explained by the predictors in the regression model. The Regression component shows that the model accounts for a significant portion of the variance, with a sum of squares of 367.769 and 10 degrees of freedom. The Mean Square value is 36.777. The *F*-ratio is 1.727, indicating the ratio of explained variance to unexplained variance. The associated significance level (Sig.) is 0.087, which is slightly above the conventional threshold of 0.05. This suggests that the model's performance in explaining the variance is approaching significance, but it doesn't quite reach conventional levels. The Residual component represents unexplained variance, with a sum of squares of 1831.674 and 86 degrees of freedom. The Total

sum of squares is 2199.443, accounting for all the variance in the dependent variable. The predictors in this model include Education Factors, Level of Employment, Individual factors, Age, Social Cultural Factors, Monthly Basic Pay, Economic Factors, Marital Status, Experience at current employment, and highest level of Education.

Table1: Regression Coefficients- Prevalence levels

Coefficients

Model		Unstandardized Coefficients		Standard Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	**(Constant)**	2.029	3.939		.515	.608	-5.801	9.860
	Marital Status	-2.190	1.589	-.232	-1.378	.172	-5.349	.969
	Highest level of Education:	1.501	1.002	.292	1.498	.138	-.490	3.492
	Level of Employment:	-.472	.697	-.077	-.677	.500	-1.858	.914
	Monthly Basic Pay:	-1.464	.435	-.521	-3.366	.001	-2.329	-.599

a. Dependent Variable: How many Women are employed at your workplace or in your department:

The table provides the regression coefficients for the model predicting "How many Women are employed at your workplace or in your department." Each predictor variable's unstandardized and standardized coefficients are displayed. The "Constant" term has an unstandardized coefficient of 2.029 with a standard error of 3.939. None of the predictors, including Marital Status, Highest level of Education, Level of Employment, Monthly Basic Pay, Experience at current employment, Age, Individual factors, Social Cultural Factors, Economic Factors, and Education Factors, demonstrate statistically significant effects. The p-values for all predictors are above the conventional threshold of 0.05, except for Monthly Basic Pay, which has a *p*-value of 0.001, indicating a significant impact. The standardized coefficients (Beta) offer insights into the relative importance of each predictor. Among them, Monthly Basic Pay has the highest standardized coefficient of -0.521, suggesting it has the most substantial impact on the dependent variable.

Objective 2: To identify factors affecting women MSMEs participation in ICT.

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
Individual factors	.251	.661	.049	.380	.705	-1.062	1.565
Social Cultural Factors	.342	.799	.061	.428	.670	-1.247	1.931
Economic Factors	.771	.759	.157	1.016	.313	-.738	2.279
Education Factors	-.448	.913	-.078	-.491	.625	-2.264	1.368

Table 2: Regression Coefficients on factors affecting women MSMEs participation in ICT

The challenges identified include limited access to necessary equipment, a lack of public understanding of the industry, insufficient capital, inadequate infrastructure and regulatory gaps. Gender discrimination and biasness were also noted. One participant highlighted,

"*Access to equipment, lack of understanding of the industry among citizens, lack of capital, lack of infrastructure in the country to support the industry and lack of regulations*."

It was observed that women MSMEs participation in ICT entrepreneurship remains relatively low. However, there is a notable enthusiasm and interest among women to engage in this sector. According to one participant,

"It has still remained low but there is huge appetite and interest among women."

Women MSMEs expressed concerns about the demanding nature of ICT businesses, a perception that it's a male-dominated field, and a preference for less challenging ventures. Additionally, limited enrollment of women in ICT courses and issues related to financing were cited as barriers. A participant stated,

"Most women want easy businesses to venture into, ICT business needs a serious drive and push and women lack patience to do that, funding."

Positive trends were noted in the form of increased enrollment of women in ICT and engineering courses. Initiatives from organizations, government support for STEM education, and specific funding opportunities for women in the ICT sector were identified as influential factors. As one participant noted,

"More women are now taking up ICT and engineering courses which exposes them to ICTs."

Participants generally felt that men tend to dominate ICT-related programs and businesses, while women's involvement in this area is still at a nascent stage. There was a consensus that efforts should be made to bridge this gap. As one participant expressed,

"I feel like more men participate as in ICT related programs as compared to women."

Some women MSMEs were motivated by a desire to challenge societal norms and distinguish themselves in a male-dominated field. They recognized the potential for global connectivity and utilized media for business and educational purposes. One participant explained,

"Some women prefer challenging themselves and be unique from the rest."

4.2 Objective 3: To investigate strategies that promote women MSMEs participation in ICT

Based on the study findings, on the third objective which is the strategies that promote women MSMEs participation in ICT which are: Creation of accessibility of educational opportunities to encourage the trend of increasing enrollment of women in ICT and engineering courses, creating unlimited access to quality education and awareness about STEM fields, access to capital and financial resources for women MSMEs in ICT such as CDF, CEEC empowerment, targeted initiatives, including micro-financing programs and venture capital opportunities tailored for women-led ventures, implementation of policies that facilitate flexible work arrangements and provide adequate support systems, establish the presence of relatable role models and mentors that can serve as powerful motivators for aspiring women MSMEs in ICT, establishing mentorship programs and initiatives that connect experienced professionals with emerging talents can go a long way in nurturing and sustaining women's engagement in the sector. Ensure the role of policy and institutional frameworks cannot be overstated by enabling a conducive policy environment that promotes gender inclusivity and provides targeted support for women entrepreneurs is

imperative. This includes measures such as gender-sensitive procurement policies, incentives for women-led ventures, and initiatives to reduce gender-based barriers in accessing opportunities and resources.

In a face-to- face interview with women, one female participant said *'Madam, the strategies that promote women participation among MSMEs in ICT include access to education- STEM programmes, Gender Inclusive Policies among women,'* (Women Entrepreneur)

Another female participant added '*Mmm you know what madam! Strategies include creating mentors and role models in ICT, also workshops on mentorship access, access to funds from Constituency Development Funds- CDF and CEEC and government partnership to create funding for women'* (Financial Expert)

Creating spaces for women to network, collaborate, and share experiences is essential for building a supportive ecosystem. Networking platforms and professional associations dedicated to women in ICT entrepreneurship that fosters a sense of community and provide avenues for knowledge exchange and resource sharing. Ensuring adequate technological infrastructure for women's participation in ICT entrepreneurship. Creating Access to reliable internet connectivity, hardware, and software resources are prerequisites for thriving in a technology-driven field. Furthermore, put more efforts to bridge the digital division and improve access to ICT resources are integral in this regard. Ultimately, shift in societal mindsets and cultural norms is imperative that will deeply entrenched beliefs about gender roles and capabilities is a foundational step towards fostering an environment where women can thrive in ICT entrepreneurship. This will necessitate widespread awareness campaigns and educational initiatives aimed at transforming societal perceptions.

CHAPTER FIVE: DISCUSSION OF FINDINGS

5.0 Introduction

These findings align with global trends, where women continue to be underrepresented in the technology and entrepreneurship sectors (UN, 2010; ITU, 2016; World Bank, 2016). The prevalence of a young, educated, and diverse cohort of women in the ICT sector in Zambia is an encouraging sign. However, the overall representation of women remains a critical concern.

5.1 Objective 1: To determine the prevalence of women`s participation in ICT across different enterprise levels (micro, small and medium enterprise

The results indicated a generally positive attitude towards working in ICT, particularly in terms of payment. This study is in line with (Deloite, 2014) who indicated positive relationship between income, mobile phone ownership and internet usage. There is a significant level of engagement by women, particularly in micro and small enterprises and not in medium enterprises which is mostly dominated by men. A study by (Global Entrepreneurship Monitor, 2019) states that women owned-ICT businesses are still a minority.

These results show that a significant portion of the female population is still facing challenges breaking into the medium section of the market. This calls for the authorities to implement more policies that promote equal opportunities for the male and female genders. However, it is important to note that the reasons as to why most women have not elevated into the upper section of the market still remains but a speculation among stakeholders and most researches. Therefore, it is important that more authors and relevant wings of the government explore this gray area of the market in order to come up with comprehensive solutions and subsequently close the gender gap as far as women participation in ICTs among MSME's is concerned.

5.2 Objective 2: To identify factors influencing affecting women MSMEs involvement in ICT

The factors identified included limited access to necessary equipment, empowerment, finances, a lack of public understanding of the industry, and regulatory gaps. Gender discrimination and biasness were also noted. A study by (World Economic Forum, 2020) highlights that women often face these barriers to acquiring essential technical skills limiting the ability to engage in tech driven enterprises.

What these results show is that despite the significant steps that have been taken globally and in Zambia to be specific, a number of factors, some of which are mentioned above, are hindering the participation of females in ICT among SME's. The findings of this study are consistent with findings of (Kapurubandara and Lawson, 2008:3) who found that many developing countries have failed to utilize ICTs as expected due, to organizational and environmental factors which are coupled to a lack of technical skills.

5.3 Objective 3: To establish strategies that promote women MSMEs participation in ICT

Based on the study findings the strategies were: policy interventions, educational reforms, targeted financial support, and cultural shifts towards inclusivity; laying the foundation for informed recommendations and policy interventions other major strategies included, Establishing Gender-Inclusive Policies, Strengthening Educational Opportunities, Investing in STEM education and vocational training for women to bridge the skills gap and promote greater participation in ICT entrepreneurship. Creating specialized financing mechanisms and venture capital opportunities for women-led tech startups. Fostering Mentorship and Networking: Establishing mentorship programs and networking platforms to connect experienced professionals with aspiring women entrepreneurs. Conducting awareness campaigns and advocacy efforts to challenge gender biases and promote a more inclusive narrative around women in technology. Implementing policies that promote gender inclusivity in the tech sector, such as targeted funding and procurement programs.

This study is consistent to the (ZICTA, 2020) report that revealed that Zambia has a national ICT policy that outlines the government commitment to the development and the growth of the ICT sector. Furthermore, a study by (Musonda, 2021) is in agreement with the findings and revealed that government agencies and NGOs conduct training and capacity building programs tailored to women in ICT that focus on enhancing technical skills, business management and entrepreneurial knowledge.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The purpose of this study was to evaluate the participation of women in ICTs among MSMEs in Zambia, particular in the CBD of Lusaka. The study employed the TOE theoretical framework in order to formulate the variables of analysis. This is because the TOE framework allows the researcher to consider the organizational and environmental, as well as macro-environmental characteristics of the topic of study. The study used a mixed- methods approach that allows the researcher to use both qualitative and quantitative methods of research.

Based on the findings, it is evident that there is a significant gender gap as far as evaluating women participation in ICT among MSMEs is concerned. Regarding the prevalence levels of women participation, the study indicated that 24.7% were micro enterprise, while SMEs were 75.3% and medium enterprise was at 0%. The study further revealed that there are few women participating in the ICT domain among MSMEs in Lusaka despite revealing a keen interest among women in the ICT. The challenges identified included; limited access to necessary equipment, empowerment, lack of public understanding of the industry, regulatory gaps, gender discrimination and biasness.

6.2 Recommendations

Based on the study findings, the study recommended the following:

- **Promoting STEM Education**: Encourage and facilitate the enrollment of women in Science, Technology, Engineering, and Mathematics (STEM) programs. This can be achieved through targeted scholarships, workshops, and awareness campaigns.
- **Developing Tailored Curricula**: Design curricula that not only focuses on technical skills but also encompass entrepreneurship and business development, providing a holistic foundation for aspiring women entrepreneurs.

- **Establishing Tech Incubators in Universities**: Create tech incubators within educational institutions to nurture innovative ideas and provide students, especially women, with a supportive ecosystem for their entrepreneurial ventures.
- **Establishing Mentorship Programs**: Develop structured mentorship programs that pair experienced professionals, both men and women, with aspiring women entrepreneurs. These programs should be inclusive and accessible.
- **Encouraging Networking Events**: Organize regular networking events, workshops, and seminars focused on ICT entrepreneurship. These gatherings provide opportunities for women to connect with industry experts and fellow entrepreneurs.
- **Creating Women-Centric Funding Programs**: Establish funding initiatives specifically designed for women-led startups in the ICT sector. These programs could offer grants, low-interest loans, or equity investment options.
- **Partnering with Financial Institutions**: Collaborate with banks and financial institutions to develop customized financial products and services tailored to the needs of women entrepreneurs.
- **Review and Amend Existing Policies**: Evaluate current policies related to entrepreneurship and technology to ensure they are gender inclusive. Address any existing biases or barriers.
- **Advocate for Gender-Inclusive Policies**: Work in collaboration with stakeholders, including government bodies, NGOs, and industry associations, to advocate for policies that promote gender diversity and inclusivity in the tech sector.
- **Launch Awareness Campaigns**: Conduct targeted awareness campaigns to challenge stereotypes and showcase successful women entrepreneurs in the ICT sector.
- **Engage in Educational Outreach**: Collaborate with educational institutions, communities, and media outlets to promote the message of inclusivity and the potential for women in ICT entrepreneurship.

- **Implement a Monitoring and Evaluation Framework**: Develop a comprehensive framework to track the participation of women in ICT entrepreneurship and the impact of implemented initiatives.
- **Regular Reporting and Analysis**: Conduct periodic assessments and generate reports to evaluate the effectiveness of policies and programs, making necessary adjustments based on the findings.

By implementing these recommendations, Zambia can foster an inclusive ecosystem that empowers women MSMEs to thrive in ICT, ultimately contributing to innovation, economic growth, and societal advancement.

6.3 Limitations

Sample Size and Representation:

- The study's sample size, although carefully selected, may have limitations in terms of representing the entire population of women in ICT entrepreneurship in Zambia. A broader sample could provide a more comprehensive overview.
- **Self-Reported Data**:
- Some of the data collected, especially in surveys and interviews, relies on self-reported information. This can introduce potential biases or inaccuracies based on respondents' perceptions or interpretations.

Cross-Sectional Nature:

- The study predominantly adopts a cross-sectional approach, providing a snapshot of the current situation. A longitudinal study could offer insights into trends and changes over time.

Generalizability:

- While the findings are applicable within the context of Zambia, caution should be exercised when generalizing them to different regions or countries with distinct socio-economic and cultural landscapes.

Qualitative Data Interpretation:

- The interpretation of qualitative data is inherently subjective. Despite rigorous analysis, there is a possibility of alternative interpretations or nuances that may not have been fully captured.

6.4 Suggestion for Future Research

1. **Longitudinal Studies**:
    - Future research could adopt a longitudinal approach to track the evolution of women's participation in ICT entrepreneurship over time, providing a more dynamic perspective.
2. **Comparative Studies**:
    - Comparative studies with other countries or regions could offer valuable insights into the contextual differences affecting women's engagement in ICT entrepreneurship.
3. **In-Depth Case Studies**:
    - In-depth case studies of successful women entrepreneurs in ICT could provide a deeper understanding of the specific factors that contribute to their success.
4. **Exploring Intersectionality**:
    - Future research could delve into the interventionalist of gender with other social factors like race, class, and age, to gain a more nuanced understanding of the challenges faced by different groups.
5. **Policy Impact Assessment**:
    - Assessing the impact of specific policies and initiatives aimed at promoting women's participation in ICT entrepreneurship would provide valuable feedback for policymakers.
6. **Technological Trends**:

- Given the rapidly evolving nature of technology, future studies could explore the impact of emerging technologies on women's participation in ICT entrepreneurship.

7. **Innovative Financing Models**:

    - Research on innovative financing models, such as crowdfunding or impact investment, could shed light on alternative avenues for women entrepreneurs to access capital.

By addressing these limitations and pursuing these future research directions, scholars can contribute to a more nuanced and comprehensive understanding of women's participation in ICT entrepreneurship, thereby informing more effective policy and programmatic interventions.

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APPENDICES

Appendix-1: Interview Guide for Financial Expert/ Msmes

1. What does women in ICT mean to you?
2. What are some of the challenges faced by women in ICT?
3. How would you describe the participation of women MSMEs in ICT compared to men in Lusaka -CBD?
4. What do you think are some of the factor that (Individual, social, cultural, economic, education, etc.) that affect women from participating in ICT in Lusaka -CBD?
5. What strategies promote women MSMEs participation in ICT?

THANK YOU FOR ANSWERING MY QUESTIONS

Appendix2: Questionnaire for Women Msmes

Section 1: Demographic Question:

1. Age Range: □16-20yrs □ 21-25yrs □ 26-30yrs □ 31-35yrs □ 36-40yrs □ 41-45yrs □ 46-50yrs □ 51yrs+
2. Marital status: □ Single □ Married □ Divorced □ Widowed
3. Highest level of Education: □ No Education Attained □ Grade 9 Certificate □ Grade 12 Certificate □ College Certificate/Diploma □ Bachelor Degree □ Master's Degree
4. Level of Employment: □ Entry Level □ Mid-level □ Senior or Executive-Level. □ Business Owner
5. Experience at your current employment: □ less than 1 year □ 1-2 years □ 2-3 years □ 3-4 years □ 5+ years
6. How man people are employed at your work place: Women: _____ Men: _____ (**Note** that for question 6 you can ask your employer if not sure)
7. Monthly Basic Pay: □ Less than K1,000 □ K1,001 – K2,000 □ K2001 – K3000 □ K3001 - K4000 □ K4001 – K5000 □ Above K5000

Section 2: Individual Factors

1. The statement below relates to **individual factors** influencing women participation in ICT entrepreneurial activities. Supplied also are five options corresponding to these statements: Strongly agree (**SA**)=5, Agree(**A**)=4, Undecided(**U**)=3, Disagree(**D**)=2, and Strongly Disagree (**SD**)=1.
   Please tick the option that best suits your opinion on the statement given

Individual Factors	**SD**	**D**	**U**	**A**	**SA**
ICT Business improve quality of life					
I enjoy working in ICT					
I prefer working in ICT to other types of business					
In my current role I am directly involved in technical solutions for ICT					
I am satisfied with the current working conditions					

Thank ☺

2. The statement below relates to **socio-cultural factors** influencing women participation in ICT entrepreneurial activities. Supplied also are five options corresponding to these statements: Strongly agree (**SA**)=5, Agree(**A**)=4, Undecided(**U**)=3, Disagree(**D**)=2, and Strongly Disagree (**SD**)=1.

   Please tick the option that best suits your opinion on the statement given

Socio-cultural Factors	**SD**	**D**	**U**	**A**	**SA**
My family and friends are in support of me working in ICT					
Women should not participate in ICT businesses					
ICT entrepreneurship is too demanding for women					
Women are capable of taking up leadership roles in ICT businesses					
Men do not give women chance to participate in ICT business					

3. The statements below relate to **economic factors** influencing women participation in ICT entrepreneurial activities. Supplied also are five options corresponding to these statements: Strongly agree (**SA**)=5, Agree(**A**)=4, Undecided(**U**)=3, Disagree(**D**)=2, and Strongly Disagree (**SD**)=1.

   Please tick the option that best suits your opinion on the statement given

Economic Factors	**SD**	**D**	**U**	**A**	**SA**
Women are paid less than men in ICT business					
Women cannot find capital to start an ICT business					
Financial Institution do not lend money to women in ICT					
There are no ICT business empowerment programs available to women					
ICT business do not make good profit					

4.**Education Factors**	**SD**	**D**	**U**	**A**	**SA**
My highest education has an influence on my job in ICT					
Women are denied training in ICT					
Women have no interest in Technology training					
ICT training is too hard for women					
Training in ICT is too expensive					

Thank ☺