UNIVERSITY OF CAPE COAST

STUDENTS PERCEPTION OF INFORMATION COMMUNICATION TECHNOLOGY INFRASTRUCTURE AT THE UNIVERSITY OF CAPE COAST

BEATRICE ADDO

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STUDENTS PERCEPTION OF ICT INFRASTRUCTURE AT THE UNIVERSITY OF CAPE COAST

BY

BEATRICE ADDO

Dissertation submitted to the Department of Information Technology Education College of Distance Education, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Education in Information Technology

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DECLARATION

I Beatrice Addo, author of this thesis, do hereby declare that except for references to other people's work which have been duly acknowledge here, the work presented in this research, was done by me as a student of MED IT, University of Cape Coast (CODE) 2016. This work has never been submitted in whole or in part for any masters in this University and elsewhere.

……. ……

BEATRICE ADDO DATE

This work has been submitted for examination with my approval as supervisor.

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DR. ABEDNEGO KOFI BANSAH DATE

ABSTRACT

It is widely accepted that the potential revolution in facilitation that information and communication technology may bring may improve education at all levels. Most governments' investments in schools' ICT infrastructure are driven by a firm conviction in the transformative power of ICT to improve student learning. The study's overarching objective was to better understand how students at the University of Cape Coast see the variables that drive them to maintain their technology use. The study was guided by four (4) research questions. The study included a random selection of 326 undergraduates from selected departments across four colleges at the University of Cape Coast, out of a total population of 1,779. A questionnaire was utilised to collect information for a descriptive survey using a quantitative methodology. The results showed that students valued the perceived benefit of technology in the classroom quite highly. Again, the results showed that there was a statistically significant difference in the mean judgements for years three and four when it came to how conveniently students felt using technology for learning. While most participants gave the research excellent marks for perceived value, happiness, and convenience, many had poor views of the underlying ICT infrastructure, which might potentially slow down course development at times. Perceived utility (PU) was shown to be the most influential factor in whether or not participants adopted and used a new technology. It was recommended that the government take decisive action to strengthen ICT infrastructure and establish a strong telecommunications industry in order to address some fundamental ICT application difficulties and to boost the facilitation of ICT in schools. Constant attention should also be paid to the requirement for updating the information and communication technology infrastructure present on college campuses.

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DEDICATION

To my late son Dennis Kwaku Boateng Addo and my mother, the late Madam Grace Afua Tetteh.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

Background to the Study

Because of this, it's reasonable to assume that ICTs, or information and communication technologies, play a crucial role in shaping the future of education throughout the world. Inspectorate Evaluation Studies (2008) found that a nation's success in building a knowledge-based economy was directly correlated with its level of investment in information and communication technology (ICT).

Information Communication Technology has several advantages for students, instructors, and business, to name a few (Agrawal & Mittal, 2018). Palvia, Baqir, and Nemati (2018) pointed out that a range of economic and social activities could be impacted by ICT. According to Gunasinghe, Hamid, Khatibi, and Azam (2019); Mwandosya, Suero Montero, Mbise, Lwoga, Casmir, and Mwasaga (2018); the advantages to society are reliant on the ICT infrastructure's suitability, particularly given that technology is currently an unquestionably significant component of modern education (Selwyn & Facer, 2013). An effective ICT infrastructure in schools supports a country's educational system. Wu (2014, p. 67) states that "ICT in education plays a significant role in promoting the balanced development of compulsory education, perfecting the life-long education system, achieving educational equity, improving education quality, and constructing a learning society."

Information Communication Technology use is pervasive and has a significant influence on students' lives at various academic institutions. ICT use in higher education has reportedly had a big influence on students' lives, notably how they study and can simplify difficult tasks, according to Maribe and Twum-Darko (2015). According to Lawrence and Tar (2018), using ICT tools in the classroom helps

instructors and students collaborate more quickly and effectively, preparing them for life in the digital era. Similar to this, ICT is said to encourage and motivate pupils to study by making learning fascinating, bringing out the best in them, and bringing out their finest attributes, according to the research carried out by Ghavifekr and Rosdy (2015). According to Gregory and Lloyd (2010), one method that has been underlined as a technique for motivating students to actively engage in and commit even though one of the biggest obstacles to their education is the usage of ICTs , a growing body of research is refuting this assertion (Howard, Ma, and Yang, 2016). ICTs are crucial for education, according to Hennesty et al. (2010), who believe that they may increase learning in the classroom, be a significant agent of growth, and present chances for nations that integrate them into their educational systems.

Information Communication Technology has evolved into a crucial element of education reform and is now recognised as a required component of the curriculum in schools due to the possibilities and opportunities that it offers (Tezci, 2011). Despite the significant importance that ICTs play in education (Zakaria & Khalid, 2016), undeveloped countries, especially those in Africa, still struggle to use these tools into classroom instruction (Ssekakubo, Suleman, & Marsden, 2011; Unal & Ozturk, 2012). This is a result of a lack of resources in terms of infrastructure, access, training, development, and support (Agyei, 2014; Antwi, Bansah, & Even though they confront substantial difficulties in converting technology promises into concrete benefits for learning, education stakeholders in Africa have modified programmes and classroom facilities as a result of their recognition of the influence of ICTs in society (Kozma & Isaacs, 2011). The utilisation of technology that assisted students in comprehending their curriculum and encouraged purposeful learning is crucial for these efforts to reorganise education. Professors at different institutions must

incorporate modern technologies into their class plans to motivate students to learn about the subject since teachers carried out the implementation (Tedla, 2012).

In Ghana, attempts have been made by the successive governments to keep up with the competition of the incorporation of technological tools into facilitation. The Organisation for Economic Co-operation and Development (OECD) have both stressed the importance of the Ghanaian government making significant investments in technology education (OECD PISA Report, 2015). These investments would benefit not only students but also teachers. According to Njoh (2018), for the initiative to be sufficient, the facilities, infrastructure, and technological resources necessary to incorporate ICT into our educational curriculum need to be appropriate and easily available. In spite of efforts to expand the use of ICT (Agyei & Voogt, 2011; Owusu-Ansu, 2015), within Ghana's higher education system (Kwasi, & Andrews, 2018), there is still a lack of a suitable and dependable ICT infrastructure. Keeping this context in mind, the present research was conducted to see how students felt about the parts of higher education institutions' infrastructure that are built on campus that encourages them to continue using technology.

Statement of the Problem

Consequently, it might be argued that ICTs are now an essential part of our everyday lives and have a significant influence on the growth of education in every country. It is possible to make projections about the future of most nations by considering the widespread acceptance of ICT as an essential component in the growth of nations towards the establishment of knowledge-based economies. (Inspectorate Evaluation Studies, 2008). Businesses, teachers, and students, to mention a few, may all profit from ICT (Agrawal & Mittal, 2018). According to Palvia, Baqir, and Nemati (2018), ICT may have an effect on a range of economic and social activities. According to

Gunasinghe, Hamid, Khatibi, and Azam (2019); Mwandosya, Suero Montero, Mbise, Lwoga, Casmir, and Mwasaga (2018), the benefits to society depend on the suitability of the ICT infrastructure, especially given that technology is currently an undeniably significant component of contemporary education (Selwyn & Facer, 2013). An effective ICT infrastructure in schools supports a country's educational system. Wu (2014, p. 67) states that "ICT in education plays a significant role in promoting the balanced development of compulsory education, perfecting the life-long education system, achieving educational equity, improving education quality, and constructing a learning society."

Information Communication Technology use is pervasive and has a significant impact on students' lives at various academic institutions. The usage of information Communication Technology in higher education has supposedly had a huge impact on students' lives, notably how they study and may make difficult work easier, according to Maribe and Twum-Darko (2015). The use of ICT tools enables instructors and students to engage in a way that is both faster and more productive, which in turn helps students and teachers better (Lawrence & Tar, 2018). According to Ghavifekr and Rosdy (2015), ICT is claimed to inspire and motivate children to study by making learning entertaining, bringing out the best in them, and bringing out the finest features in them. One method for getting students interested in their education is by using ICTs. (Gregory & Lloyd, 2010), despite the fact that a growing body of research is contesting this assertion (Howard, Ma, and Yang, 2016). Information Communication Technologies (ICTs) are crucial for education, according to Hennessy et al. (2010), since they may improve classroom learning, be a significant engine of advancement, and provide chances for nations that embrace them into their educational systems.

Information Communication Technology (ICT) has developed into an essential component of educational reform and is now considered a mandatory part of the curriculum in schools (Tezci, 2011). This is due to the many possibilities and opportunities that ICT presents. Developing countries, particularly those in Africa, continue to struggle with the difficulty of using today's cutting-edge tools to improve classroom instruction (Ssekakubo, Suleman, & Marsden, 2011; Unal & Ozturk, 2012), despite the significant role of ICTs in learning environments, (Zakaria & Khalid, 2016). Owing of this, there are insufficient resources for infrastructure, accessibility, training, development, and support (Agyei, 2014; Antwi, S, Bansah, A.K. & Franklin T, 2018). Even though they confront substantial difficulties in converting technology promises into concrete benefits for learning, education stakeholders in Africa have updated courses and classroom facilities because of their recognition of the importance of ICTs in society (Kozma & Isaacs, 2011). The use of technology that helped students grasp their curriculum and encouraged purposeful learning is crucial for these initiatives to reorganize education. According to Tedla (2012), educational institutions must mandate that teachers use contemporary technology into their lesson plans.

In Ghana, there were efforts made to stay up with the competition of employing technological resources to enhance education and instruction in instructional settings. The OECD have once again emphasized that the government of Ghana must spend heavily in tech education for the sake of the country's educators and students (OECD PISA Report, 2015). For ICT to achieve its goals, it is essential that the facilities, infrastructure, and technological resources required to integrate it into our educational curriculum are both sufficient and accessible (Njoh, 2018). A strong and stable ICT infrastructure is still missing despite efforts to expand its usage in classrooms, notably

in Ghana's higher education system (Agyei & Voogt, 2011; Owusu-Ansah, 2015), (Kwasi, & Andrews, 2018).

Purpose of the Study

The purpose is the study is to explore what motivates, encourages, and promotes the continued use of technology based on infrastructure at the campuses of higher education institutions. The specific objectives were:

1. Determine respondents' differences in the motivators based on academic levels.
2. Determine the salient motivations underlying students' intention to continue using technology for learning based on ICT infrastructure on a higher education institution campus.
3. Determine how these motivations influence students' continuance intention to use technology for learning.
4.

Research Questions

1. What are respondents differences in the motivators based on academic levels.
2. What are the salient motivations underlying students' intention to continue using technology for learning based on ICT infrastructure on a higher education institution campus?
3. How do these motivations influence students' continuance intention to use technology for learning?

Research Hypotheses

H1. Students' level of satisfaction with ICT infrastructure on campus is positively associated with their technology continuance intention.

H2. Students' extent of confirmation is positively associated with their satisfaction with technology use for facilitation.

H3. Students' perceived usefulness of technology use is positively associated with their satisfaction with Information technology use for facilitation.

H4. Students' perceived convenience of technology use is positively associated with their satisfaction with Information technology use for facilitation.

H5. Students' technology continuance intention is positively associated with their perceived usefulness of technology use for facilitation.

H6. Students' technology continuance intention is positively associated with their perceived convenience of technology use for facilitation.

H7. Students' extent of confirmation is positively associated with their perceived usefulness of technology for facilitation

H8. Students' extent of confirmation is positively associated with their perceived convenience of technology for facilitation

Significance of the Study

Information Communication Technology (ICT) has an important strategic role in education in general; nevertheless, as a result of its enormous potential, it has especially a substantial impact on teaching in the classroom. At the individual, the group, and the societal levels, it enables chances for active facilitation. (Lawrence & Tar, 2018). The study was conducted with the intention of providing a significant benefit to the policymakers and university administration at UCC by assisting them to

better understand the relevance of ICT in learning and establishing policies that encourage it. This might be accomplished by involving academic personnel and students in ICT-related academic programmes for a certain period to assist them in becoming digital natives. Students at UCC and other higher education institutions should experiment with employing both the traditional ways of facilitation as well as the utilisation of technology to determine which is most beneficial as they utilise ICT to boost learning.

Additionally, the study was meant tp provide a full understanding of the challenges that students have while using ICT for learning to assist university administration in making decisions on how to address these challenges with the aim that they may be significantly diminished, if not completely eradicated. Also, the results will help modify information literacy training and improve university students' academic achievement.

Delimitation of the Study

All of the studies were conducted over the period of many years at the University of Cape Coast. The study included 326 undergraduates from the University of Cape Coast enrolled in levels 300 and 400. A small number of students from the university's four colleges (School of Humanities and Legal Studies; College of Education Studies; College of Health and Allied Sciences; College of Agriculture and Natural Sciences) participated. Students at levels 300 and 400 were chosen because it was assumed that they would have developed some proficiency using technologies and ICT infrastructure and that they would also have completed a significant amount of work requiring the use of computers.

Limitations of the Study

Individual studies can be subject to restrictions. While some limitations are unavoidable, others can be removed, and still others come up when the researcher tries to find a compromise between scientific rigour and reality (Connelly, 2013). As a result, the researcher faced various difficulties that decreased her ability to carry out the study effectively.

One of these restrictions was the refusal of some of the respondents to answer the questionnaire. By ensuring the respondents of the anonymity of their identity, the researcher attempted to overcome these restrictions. Due to the university's extended shutdown, the researcher was unable to deliver the questionnaire during the designated time.

Organization of the Study

The study was to be organized into five chapters. The first chapter discusses the background to the study, statement of the problem, the research objectives, research questions, significance of study, delimitation and limitation. Chapter two deals with the review of literature related to the study and the theoretical framework. Chapter three discusses the research design, population, sample and sampling technique, research instrument, data collections and data analysis. Chapter four presents the results or the study with the relevant discussions of the result. Chapter five, provides the summary of findings, the conclusions, and the recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

Introduction

Creswell (2018) stressed the accumulation of information and how individuals may do research and expand on previous work. A literature review is a justification of a thesis position that employs evidence from reading earlier research results and critically assessing and synthesising the body of knowledge that is applicable to the proposed study challenge. According to Cooper (2015), Marshall, and Rossman (2016), it offers context for establishing the study's importance and acts as a standard for comparing the findings to other findings. This chapter was written with the intention of covering the following types of literature:

1. The Role of ICT Infrastructure in Facilitation.
2. Educational Policy for ICT Integration for Facilitation.
3. ICT integration into Higher Education in Ghana
4. Factors affecting Integration ICTs into Facilitation
5. Theoretical Framework
6. Conceptual Framework

The Role of ICT Infrastructure in Facilitation

Sangra and González-Sanmamed (2011) define infrastructure as the hardware and connecting technologies present in a school building, as well as the structural architecture of ICT-connected classrooms. According to Vanderlinde and van Braak's (2010) definition of ICT infrastructure, it assesses the perceived value and usefulness of ICT tools given in schools, such as peripheral equipment, software, and hardware. According to previous research, ICT infrastructure is undoubtedly one of the aspects impacting how efficiently teachers use technology (Shiue, 2007).

Information Communication Technologies (ICTs) have significantly influenced how teaching strategies, social services, and educational innovation have altered. Using ICT in the classroom might be difficult. because of the difficulties inherent in the processes of giving out knowledge (Ghavifekr, Kunjappan, Ramasamy, & Anthony, 2016). The most effective approach to use computers and the internet to help education at all levels and in both official and informal contexts, however, has attracted a lot of attention recently (Mikre, 2011). Doing this would raise educational standards generally and is one of the key aims of incorporating ICTs into education systems in developing countries. Building networks between educational institutions and funding ICT infrastructure for schools are two strategies help education.

Because of the introduction of a new understanding of ICT and its purpose in education, a significant quantity of research has emerged by analysing the function of ICT and its way it helps on establishing an interactive learning environment. Several of these researches, according to Kennewell, Tanner, Jones, and Beauchamp (2008), have abundantly shown the crucial functions that ICT plays in bolstering instructional practises and favourably affecting pupils.

Most prior studies, according to Lu, Tsai, and Wu (2015), largely focused on the benefits of a certain kind of learning and teaching facility or equipment. However, there haven't been many studies conducted at the national level to examine the connection between infrastructure and ICT adoption in developing or even impoverished regions. According to a study by Sangra and González-Sanmamed (2011) that aims to examine what is happening in schools with the help of ICT in schools, instructors typically agree that ICT may help with different inculcating

processes. It demonstrates that ICT has a larger influence on helping schools when it is used as a good component.

Lu, T. Tsai, and Wu, D., (2015) conducted a research in China ICT and it use in middle and elementary schools in all rural environments in response to their demands. According to a stepwise regression study, ICT infrastructure had differing effects on how it was deployed in urban and rural schools. The Bariu study (2020), which attempted to investigate the condition of ICT infrastructure in Kenyan educational setting, discovered that few institutions had made significant investments in ICT infrastructure.

Educational Policy for ICT Integration for Education.

Various nations have their own policies to the incorporation of ICTs for education and while this is a daunting task, written down policies continue to sharp education.

World Perspectives

It has nearly become impossible for someone without computer literacy to integrate into society since the invention of computers. Every facet of existence is controlled by technology everywhere in the globe. The educational curriculum of several countries are starting to include ICT policy.

The usage of tech (Bassi, 2011) may not be fully realised just because technology is available. If we want to make the most of the many technologies and use them in the best way for all students, we need a clear framework that sets the stage and fosters an atmosphere that enables the combination of technologies as well as their application and utilisation to their utmost degree. The purpose of the national ICT strategy is to maximise the use of IT to realise the nation's economic and social objectives. (Bassi, 2011). ICT policies vary from country to country based on regional unity, geography,

population, level of development, ICT infrastructure, government goals, and each country's level of development.

Brecko, Kampylis, and Punie (2014) state creative use of tech in institutions in Europe is supported by the idea that it will help students do well in the knowledge economy and keep European countries competitive and connected to the global economy. In the Europe 2020 Plan from the European Commission, for example, importance of E&T in strategic way is emphasised, and digital technologies are said to be the main force behind educational innovation. In the European Commission's 2013 policy for opening up and modernising E&T services, the use of digital technology to help E&T was given more high-level support. The study found that most European countries backed using digital technology to make facilitation better. This has made National authorities to place a premium on encouraging educators to use technology more often in "key curriculum areas". A greater agreement is that the focus on teachers' participation in digital education is the most significant current policy trend (EU ICT Cluster, 2010; European Commission, 2013). This discovery appears to support that opinion. Also, existing laws have been altered in this way. How instructors may utilise digital resources is the main area of scientific and policy concentration (Schrum et al., 2015). These and other laws governing digital education have not always been available to all pupils, which limits their capacity to gain from them. A 2011 study found that, up to 35% of children attend schools with insufficient policies and assistance, while only around 30% of fourth graders and about 25% of students in the other years (grades 8 and 11) do (European Commission, 2013).

A key indication for the use of computers in European classrooms has been the association between student enrolment and computer accessibility, aggregated at the national level (Ottestad & Gudmundsdottir, 2018).

A country like Pakistan has created extensive and thoroughly considered educational initiatives since 1947 but has not been successful in putting them into action. The country has taken innovative steps to incorporate technology into several aspects of everyday life. For instance, for the last several years, institutions in Pakistan have done a lot to improve information technology (MoST, 2007). Many task groups have been set up to deal with the different parts of technology and how they continue to help with different parts of life. Kundi, Shah, and Nawaz (2008). The 18th Amendment to the Pakistani Constitution, contemporary educational trends, and rising public expectations in terms of national integrity and social cohesion were all taken into consideration while creating the new National Education Policy for 2017 to 2025.

African Perspective

Since the usage of ICT continues to have good impacts in industrialised nations, it has become imperative for developing countries in Africa to embrace technology. Minishi-Majanja (2007) is right when he says that technology was a big part of how the country grew and changed. Ochuodho and Matunga (2004) refer to the ensuing increase in ICT use as the "electronic boom." According to Waema (2005), ICT development and usage were rushed and disorganised, demanding streamlining. Around 2000, countries adopted ICT policies with help from funding groups to fix the problems. The "Draught National Informatics Policy" was the first of these changes in Kenya (Ochuodho & Matuga, 2004).

By the year 2000, a prior effort at an ICT strategy in Kenya had not yet been fully fulfilled (Nduati & Bowman, 2005). The ICT plan for Kenyan education was developed within the context of the Ministry of Research, which was in place at the time. By developing national policy guidelines for ICT growth in the country, the

intention was to address the sector's haphazard expansion at the time. This was made feasible as a result of donor organisations, such as UNESCO, being willing to pay for the continuous process of policy-making. After a series of failed attempts to put the plan into action over the course of many years, the Kenya National ICT strategy was finally developed in the year 2006. According to the ICT in Education alternatives paper published, saw the strategy was to enhance the standard of living of Kenyans by ensuring the delivery of services that are easily accessible, efficient, trustworthy, and inexpensive. The goals of implementing ICT in educational settings are laid out in detail within the information technology section of the national ICT working manuscript, which consists of a number of sub-sections. According to Farrell's findings in the, employing ICT in educational institutions including colleges, universities, and other types of educational facilities. This is an important step that will be taken.

Using ICT would help Tanzania advance socially and economically, as stated in the country's Policy (TMCT, 2003). To better manage the introduction of ICT into schools, the intitutions drafted a more detailed policy (MoEVT, 2007). We did this because we know how important ICT is. This strategy acknowledged the power of technology for enhancing pupil achievement and expand access to education. A national ICT scheme for Uganda was initially put together in 1998

Adhiambo, Maritim, Okayo, and Ouma (2014). After waiting for another five years, the UNCST finally presented the government with a national ICT policy framework in the year 2002. The next year, it was given the green light. According to the paper that serves as the policy framework (Farrell, 2007), Uganda would have to acknowledge the importance of the goal of universal education that continues throughout one's life.

In comparison to other countries, it is also less difficult to reach and more affordable. According to the findings of a number of studies (Keengwe, Onchwari, & Wachira, 2008), the information and communication technology that should be present in the educational institutions of many nations has not been adequately applied. According to the e-Education policy of South Africa, every student who is currently enrolled in a school in the nation must be ICT literate by the year 2013 (Ziphorah, 2014). This requirement highlights the significance of having this ability. According to Howie, Muller, and Paterson (2005), there aren't many ICT policies in Southern Africa, and the ones that do exist are ambiguous and don't give any direction on how ICT implementation should be carried out. This is despite the fact that Southern Africa is home to some of the world's most advanced information and communications technologies (ICT).

Ghanaian Perspective

Learning more about the ways students have benefitted from the use of ICT in the classroom is of particular relevance for those who have a good heart in the educational policies and practises that are now in place in Ghana. According to Becker, Ravitz, and Wong (1999), educators have not effectively encouraged students to make efficient use of technology. This is a problem. When the use it in the classroom is of significance, despite the limited availability of resources. One example of a resource is the availability of the necessary application, as well as other technology resources and help of a technical kind. According to Fathima (2013), the use of ICT in the classroom has the potential to significantly affect the accomplishment of students.

The use of ICT has had a significant impact on the progression of Ghana's economy. The Ghanaian government has acknowledged the critical need of integrating ICT

instruction and training into basic and secondary education, as well as higher education and education for adults. Officials in the government are of the opinion that introducing ICT into the classroom will assist pupils in developing the creative and analytical abilities necessary to tackle the challenges. As a result of this, information and communication technology was given a higher priority in Ghana's educational reforms in 2007. ICT4AD, which stands for Information and Communication Technology for Accelerated Development, is an information and communication technology strategy that is being implemented across the whole economy, including the educational system. It is now feasible to include lessons on ICT in the curriculum of primary schools. This policy statement has been drafted with the intention of enlightening business executives of the significance of information and communications technologies in the modern world as well as the influence that these technologies may have on educational settings.

The Ghanaian authorities established the Educational Strategic Plans 2003-2015 (ESP 2003-2015) in that year. It covers the period from 2003 to 2015. It enhanced ICT in educational institutions, which was one of the primary foci of the policies, and it also fulfilled the aims and techniques of other policies.

Despite the previously fragmented strategy used by the government, the implementation of ICT in educational settings has seen significant growth in recent years. According to Mangesi (2007), the usage of information and communication technology (ICT) is at its most advanced level in higher education, followed by secondary schools, and lastly primary and elementary schools. According to Ghana's ICT4D strategy (Obiri-Yeboah, Kwarteng, & Kyere-Djan, 2013), which entails promoting ICT in schools in order to construct an information society, the country has made ICT its cornerstone for development. Only two of Ghana's medium-term

development plans, namely the Education Strategic Plan 2003-2015 and the GPRS, place a focus on the use of information and communication technology (ICT) to assist the poor in the nation (Mangesi, 2007). The higher education system in Ghana is an early adopter of digital technologies. Most of the top schools in the nation have their own, unique, and expensive ICT strategy. Students may now have 24/7 open access to internet-connected computer laboratories. However, not every school in the country has access to the same resources, and in certain cases, the private sector is responsible for operating computer facilities like internet cafes on college campuses. of September 2007, action was taken on the recommendations of the Education Reforms report. Researchers have shown that ICT has the potential to greatly expand access to education and training for people of all ages and levels of literacy.

The research identifies ICTs as a significant interdisciplinary challenge in the realm of education. Several solutions are proposed in the report to address this issue, such as making computers and other forms of ICT accessible to all schools immediately, introducing ICT programmes gradually to the pre-tertiary levels by starting in schools with sufficient labs and teachers, and so on. All students should get training in ICT skills as part of the use, which is also intended to better prepare them for careers in the ICT industry and improve facilitation via ICTs.

Information Communication Technology (ICT) is utilised to improve school administration, instruction, and learning via means such as the provision of computer laboratories, internet access, laptops for students and instructors, and the building of teacher capacity. 2007 Education revamping. In order to be successful, initiatives aimed at facilitating ICT integration as a whole must be well-planned. Due to the reality of budgetary constraints and its effects on the rate of supply and, by extension,

the speed of a successful rollout of an enabling environment (Ministry of Education, 2015), this issue requires immediate and specialised attention.

The United Nations called for women all over the globe to join the fight to close the gender gap in the field of information and communication technology in a statement released in 2013 to mark the first annual International Day of Girls in ICT.

University of Cape Coast Perspective

Given the importance of ICT to the nation's educational system, it is imperative that the University provide strong courses and infrastructure to support its development. The organisation intends to solicit funds aggressively, communicating with potential donors through more in-depth requests for funding. Launched in 2018, the University of Cape Coast's Third Plan is a five-year strategy plan that expands upon the university's previous two strategic plans (2003-2008 and 2012-2017). It seeks to continue the significant but unrealized portions of the previous plan while also adding new initiatives. The events of the last decade on campus, in the country, and throughout the world are also taken into account. The second major emphasis of this third Corporate Strategy Plan is focused on information and communication technology (ICT) infrastructure as a direct outcome of the Vision, Mission, and findings from the internal and external scanning. UCC's Corporate Strategic Plans 2018–2022, page 10 explains that this plan's six main initiatives would "strengthen and update usability-enhancing ICT infrastructure and facilities."

1. Improve ICT-based knowledge management and online education.
2. Create a safe and secure educational database that is both comprehensive and dependable.
3. Improve your organization's IT systems and networks.

4. Encourage programmes that provide instruction on computers to teachers and students alike.
5. Form alliances with organisations in the public and commercial sectors that already use ICT.
6. Improve the implementation of information and communication technology policy (UCC Corporate Strategic Plans, 2018–2022).

The university plans to improve and alter its focus areas to give itself an edge in the market through these initiatives. The university's ICT policy is designed to provide for the fundamental requirements of faculty and students, with specific attention paid to those who rely on ICT to accomplish a wide range of scholastic objectives. All data sources must be linked together through a fast data highway before they can be combined.

Information Communication Technology (ICT) Integration into Higher Education in Ghana

Tertiary education in Ghana is described as "education provided after secondary level in Universities, Polytechnics, specialised institutions, open universities, and any other institutions that provide training that leads to the award of diploma, and degree qualifications" (MoE, 2004, p. 3). According to Kwapong (2007, p. 1), tertiary education has the potential to cultivate the humanities, sciences, and technologies—the determinants of development. Only around a twelfth of the total recurring education spending in the government budget goes towards public tertiary education (Gondwe & Walenkamp, 2011). These educational institutions have implemented a wide variety of tactics and policies, with the goal of modernising their infrastructure, facilities, and ICT in order to raise the level of instruction and research they provide.

Despite this, several of these schools have struggled when attempting to employ it in the classroom.

At Wisconsin University College in 2017, Ofosu-Appiah conducted research on the effect that technology has on traditional classroom education. In spite of the fact that only a minority of lecturers really made effective use of the ICT tools at their disposal while teaching, his results indicate that stakes holds in school evaluated ICT-integrated facilitation highly. Instead of using more effective learning management systems like Blackboard, WebCT, or Moodle, the major form of online communication that took place between students and professors was conducted via the use of email. These systems build online community portals that bring together teachers and students and make it simple to share classroom materials and activities. Some of the primary problems he identified with using ICT in the classroom were insufficient electricity, slow internet connections, faulty equipment, and a lack of dedicated support staff. Based on the findings, educators and students should implement virtual reality teaching systems, reliable power sources, higher and faster internet speeds, and learning management systems.

In the same way, Ofori utilised Tamale Technical University and the University for Development Studies as case studies in his investigation of the use of ICT in educational institutions of higher learning. According to the results of the study, the use of ICT in teaching practises at UDS and TaTU had not been well incorporated. Poor internet speed, frequent power outages, poor maintenance, a lack of pedagogical frameworks for using ICT in facilitation, and a lack of ICT competence among lecturers and students were cited as some of the challenges inhibiting a smooth integration. Other obstacles included a lack of pedagogical frameworks for utilising ICT in facilitation. For the purpose of facilitating the effective use of ICT in

educational settings, it was proposed that teachers and students should get more ICT training than simply the basics.

A research was conducted by Badu and Amoaful (2014) at the University of Ghana to identify the availability of ICT in pedagogy across various departments. They looked at things like how commonplace ICT labs were on campus, what those labs were utilised for, and any problems students had while trying to use them. The research confirmed that ICT laboratories are not universal. It was found that most ICT-related activities that included the Internet did not involve education in any way. University policy should be developed to ensure that teachers, especially those in charge of large classes, have access to the tools they need to integrate ICT into their classrooms.

It's plain to see that most schools in Ghana have little trouble integrating ICT into classroom practise.

Factors Affecting Integration ICTs into Facilitation

According to the esteemed scholars Mutuku and Ogutu (2018), the incorporation of ICT into the sacred realm of education is a grandiose endeavour that demands both time and opulent resources. In a study conducted by the esteemed scholars Rathod and Jadhav (2015), it was revealed that when bestowed with the opulent privilege of accessing cutting-edge technology resources, students were able to engage in their scholarly pursuits with an unprecedented level of efficacy and refinement. Due to the paramount significance of ICT in our esteemed society and the realm of education, it is imperative that erudite educators possess a profound comprehension of the myriad challenges and constraints that may manifest when employing ICT within the hallowed confines of the classroom (Bingimlas, 2009). This will enable them to elevate the overall calibre of both instruction and student retention. In spite of the widely held belief that information and communication technology (ICT) simplifies

the process of learning for young children, extensive research has unequivocally showcased its myriad of drawbacks (Manasreh, 2014). As per the esteemed scholars Balanskat, Blamire, and Kefala (2006), it is evident that teachers possess a profound understanding of the opulent benefits bestowed upon them by the majestic realm of ICT within the hallowed halls of education. However, regrettably, they persistently encounter arduous challenges when endeavouring to seamlessly amalgamate these resplendent technologies into their pedagogical practises, thereby enriching the minds of their erudite pupils. As per the esteemed research conducted by Hattei and Yates (2013), to truly indulge in the opulence of technology within the classroom, one must meticulously contemplate the exalted role of the teacher, the imperative for professionalisation, and the demand for exquisite facilitation approaches that effortlessly adapt to the needs of the learners.

A prodigious amount of scholarly inquiry has been diligently conducted in a noble pursuit to unearth opulent remedies for the multifarious quandaries that ensue from the ICT within the esteemed realm of educational settings. In the prestigious halls of the University of Uyo in Nigeria, esteemed academics Udim and Etim embarked on a noble quest to unravel the intricate tapestry of challenges faced by erudite instructors in their valiant pursuit of harnessing the opulent powers of ICT. When inquired about the potential hindrances impeding the utilisation of ICT in educational environments, an impressive majority of 71 respondents, accounting for a remarkable 76.3% of the total, elegantly voiced their assent. Conversely, a distinguished minority of 23.7% of the population, comprising a select group of 22 individuals, gracefully expressed their dissent by casting a resolute "No" vote. It has been ascertained that the department's ability to harness technology for the advancement of political science knows no bounds, transcending even the very infrastructures that underpin its functionality.

Habibu, Abdulla-Al-Mumun, and Clement (2012), embarked upon a noble quest to explore the formidable obstacles encountered by educators in their noble pursuit of harnessing the power of ICT within the hallowed confines of the classroom. As per the discoveries of their meticulous investigation, a myriad of opulent challenges have come to light. These include a regrettably insufficient number of computers gracing the majestic classrooms, an unhurried internet connection that fails to meet the standards of grandeur, a lamentable lack of interest exhibited by both esteemed teachers and aspiring students towards the utilisation of ICT, an absence of the most exquisite and cutting-edge ICT equipment, a scarcity of qualified technical personnel to attend to the noble cause, a dearth of administrative support that fails to uphold the grand vision, and an inadequate course curriculum that falls short of the lofty expectations. In the face of these formidable challenges, educators displayed an insatiable desire to incorporate the opulent realm of ICT into their meticulously crafted lesson plans. This aligns harmoniously with the resplendent findings of a study that was elegantly conducted in 2016, by the Kihoza, Zlotnikova, Bada, and Kalegele. The researchers conducted a comprehensive survey, graciously seeking the insights of esteemed educators regarding the challenges they encounter when endeavouring to incorporate the splendid realm of ICT within their esteemed classrooms. When inquired about the utmost significant predicaments and limitations linked to the utilisation of ICT technology, educators discerned a dearth of time, technical aid, instruction, pedagogical expertise, apprehensions regarding network connections, and restrictions on accessibility as the most prevalent instances. As per the illustrious discoveries of Kihoza, Zlotnikova, Baba, and Kalegele (2016), it has come to light that the esteemed educators in the magnificent land of Tanzania were regrettably devoid of the knowledge and extravagant access to ICTs such as the

resplendent computers, laptops, and projectors. Regrettably, the study conducted by Pelgrum (2001) reveals a lamentable scarcity of opportunities for the erudite educators to partake in the grandeur of ICT training within the hallowed halls of the classroom. As per the esteemed Beggs (2000), it has been observed that a dearth of proper training stands as one of the foremost three hindrances that impede instructors from indulging in the opulent realm of information and communication technologies (ICT) within the confines of their esteemed classrooms. As per the esteemed research conducted by Kerckaert, Vanderlinde, and Braak (2015), it is evident that the opulent tapestry of personal and professional encounters that teachers have had with technology holds immense sway over their regal utilisation of this noble tool within the confines of the classroom. The research posits that esteemed educators may indulge in a myriad of lavish workshops and seminars, meticulously curated to enhance their prowess in seamlessly amalgamating technology into the realm of language instruction. The dearth of ICT expertise among educators is yet another formidable barrier that hinders the utilisation of technology within the confines of the classroom. As per the exquisite discoveries of a splendid research conducted in the magnificent land of Australia by the esteemed Newhouse in the year of 2002, a considerable multitude of erudite individuals displayed a distinct lack of inclination towards embracing the opulent realm of computer integration within their pedagogical practises. This reluctance, it was found, stemmed from their regrettably deficient cognizance and proficiency in this resplendent domain. In a study conducted by the esteemed scholar Bingimlas (2009), a profound investigation was undertaken to explore the opulent realm of individuals' perceptions regarding the ostentatious barriers hindering the utilisation of technology within the realm of science education. This captivating research sought to unravel the intricate tapestry of how these

perceptions ultimately manifest in the grandiose realm of actual technology usage. As per the findings, esteemed educators harboured the noble desire to integrate the opulent realm of ICT education into their esteemed classes; alas, they were met with an array of regal obstacles. The pursuit of erudition, unwavering confidence, and opulent wealth were the foremost domains of consideration. One of the formidable challenges that must be surmounted in order to seamlessly incorporate ICT and multimedia into the realm of classroom education is the lamentable scarcity of time. As per the esteemed Butzin (2001), it is imperative for educators to indulge in an opulent amount of time to meticulously scour the vast expanse of the internet, in pursuit of exquisitely fitting photographs that shall grace their multimedia projects, thereby bestowing upon their students an experience of utmost grandeur. As per the esteemed research conducted by Rogers, Medina, Rivera, and Wiley (2005), the absence of proficient technical assistance has regrettably hindered the esteemed educators and erudite scholars from embracing a plethora of opulent technological methodologies to seamlessly incorporate ICT into their facilitation endeavours. This unfortunate circumstance has led to a regrettably limited capacity to avail oneself of a more expansive array of opulent technological alternatives.

There exists compelling evidence to suggest that the seamless integration of ICT within the hallowed halls of academia may encounter certain impediments, primarily stemming from the esteemed administration of the educational institution. The illustrious discoveries unearthed by the esteemed survey conducted by Fox and Henri have magnificently confirmed the long-held beliefs of numerous erudite Hong Kong educators, revealing that the esteemed administrators of secondary schools have regrettably failed to acquire a firm comprehension of the opulent realm of technology and its paramount significance in facilitating the transition towards a more opulent

and learner-centered educational landscape. Both esteemed scholars and erudite educators may encounter a modicum of challenge when endeavouring to maximise the opulent benefits that may be derived from harnessing the power of IT within the hallowed confines of the classroom, all while adhering to the regal constraints of a stringent deadline. As per the revelations of a grandiose study conducted across the vast expanse of Europe, the paramount impediment that befalls individuals in their noble pursuit of utilising ICT is none other than a lamentable dearth of access. As per the esteemed Bingimlas (2009), teachers have eloquently conveyed their exasperation regarding the dearth of opulent resources, including state-of-the-art computers, exquisite software, and a regal high-speed Internet connection. Whilst the majority of the esteemed educators at Kenya Technical Teachers College possessed the necessary expertise to harness the power of information and communication technology (ICT), a substantial proportion of them (75%) encountered challenges when endeavouring to seamlessly incorporate this opulent technology into their pedagogical practises. As per the esteemed scholars Maithya and Ndebu (2011), the erudite educators opine that this unfortunate setback can be attributed to a dearth of opulent access to the magnificent realm of the Internet.

In accordance with the illustrious discoveries of a study that graciously surveyed approximately 4,000 esteemed high school instructors in the resplendent United States, it has been revealed that the cherished pupils are bestowed with a regrettably meagre allotment of time, less than a mere hour, to diligently complete each noble subject (Somekh, 2008). In the realm of the allotted time, both the esteemed educators and the erudite scholars encountered a formidable challenge in envisioning opulent applications for the illustrious realm of Information and Communication Technology. In light of the remarkable discoveries unveiled by Alemneh and Hastings (2006)

through their meticulous empirical investigation, it has been discerned that the most formidable impediment hindering the utilisation of ICT for facilitation in secondary schools is an unfortunate scarcity of erudite instructors, endowed with the profound ability to impart their expertise to eager pupils. As per the esteemed research conducted by Aguti and Fraser (2006), the lamentable lack of opulent access that instructors possess in the vast majority of low-income countries stands as a formidable barrier to the seamless integration of technology into the noble realm of education.

In accordance with the exquisite discoveries made by Akpabio and Ogiriki (2017) in their opulent research on the utilisation of information and communication technology (ICT) by erudite educators in the noble pursuit of imparting the eloquent English language to esteemed students in the senior secondary schools of the illustrious Akwa Ibom State, it has come to light that one of the formidable obstacles that the esteemed educational system presently confronts is an unfortunate dearth of erudite instructors who possess the refined literacy and extensive experience in the artful employment of information technology. It was further observed that the esteemed English instructors, gracing the halls of public secondary schools in the opulent city of Uyo, held the discerning viewpoint that the secondary educational establishments within this realm of sophistication were regrettably bereft of essential luxuries, such as state-of-the-art language laboratories and cutting-edge computer facilities. In a splendid manner, the remarkable study conducted by Taghizadeh and Hasani (2019) unveiled the opulent attitudes of language instructors towards the infusion of technology into the hallowed halls of their students' classrooms. This exquisite research illuminated a resplendent trend, showcasing the favourable inclination towards the integration of cutting-edge technology into the curriculum of our esteemed young learners. The illustrious

findings further revealed that a grand majority of esteemed educators were found to be lacking in the requisite pedagogical and technical prowess, thereby impeding their ability to effectively employ technology in the hallowed halls of learning, particularly when imparting the noble language of English to their youthful charges. The findings once again illuminated the stark truth that a considerable multitude of esteemed educators were bereft of the opulent privilege of accessing enriching courses that would impart upon them the exquisite savoir-faire of seamlessly integrating technology into their esteemed pedagogical endeavours with the tender minds of young progenies. The opulent challenges impeding the seamless integration of technology into classrooms for our esteemed younger students have been elegantly illuminated as a lamentable scarcity of opulent computer resources, a regrettably meagre supply of highly qualified teachers, and an insufficient level of institutional support that fails to meet the grandeur of our aspirations.

Theoretical Framework

A theoretical framework is necessary for researchers to provide a comprehensive description of their topic from several vantage points (Swason & Chermack, 2013; Osaloo & Grant, 2014). According to Ravitch and Carl (2016), researchers may locate and contextualise formal theories inside the study thanks to the theoretical framework.

Technology Acceptance Model

If you want to go ahead of the competition, you need to know how to effectively use information and communication technology (ICT) in your firm (Kpolovie & Awusaku, 2016). Everything from creating and using information to storing and sharing it is included here. Therefore, careful information management by professors affects classroom instruction, student learning, faculty research, and academic publishing (Oviawe & Oshio, 2011). When people are willing to embrace new

technologies for their intended goals, we call this phenomenon "technology acceptance" (Teo, 2011). The factors that influence the spread of technology in various contexts have garnered increasing attention from academics throughout time. There has supposedly been a lot of study on the dynamics of tech adoption in business settings.

Over the last decade, there has been a great deal of focus on the process of putting IT into use. The acceptance behaviour of end users has been the subject of several theoretical models. Davis (1989) presented the TAM as one such framework. According to the technology acceptance model, a person may foretell whether or not people will embrace information technology by considering how they feel about the system's features and how likely they are to actually utilise them. Users are more likely to adopt and value a technology (Dillon & Morris, 1996) if they find it useful and easy to implement in their day-to-day lives. Research on user behaviour, as pointed out by Silva and Dias (2007), has traditionally been one of the most difficult areas in the study of information systems or technology. Venkatesh et al. (2003) argue that technological progress need to be fostered and used in practise. The model has been validated in dozens of studies across a wide range of applications since its inception, making it the gold standard for measuring user acceptance and satisfaction (Ma, Liu, 2005). (2003) Collerette, Ingham, and Legris The TAM has been validated as a viable theoretical framework for understanding and foreseeing the actions of IT end-users. Davis argues that hastening the spread of the technology is the best way to

boost IT utilisation (Melas, Zampetakis, Dimopoulou, & Moustakis, 2011).

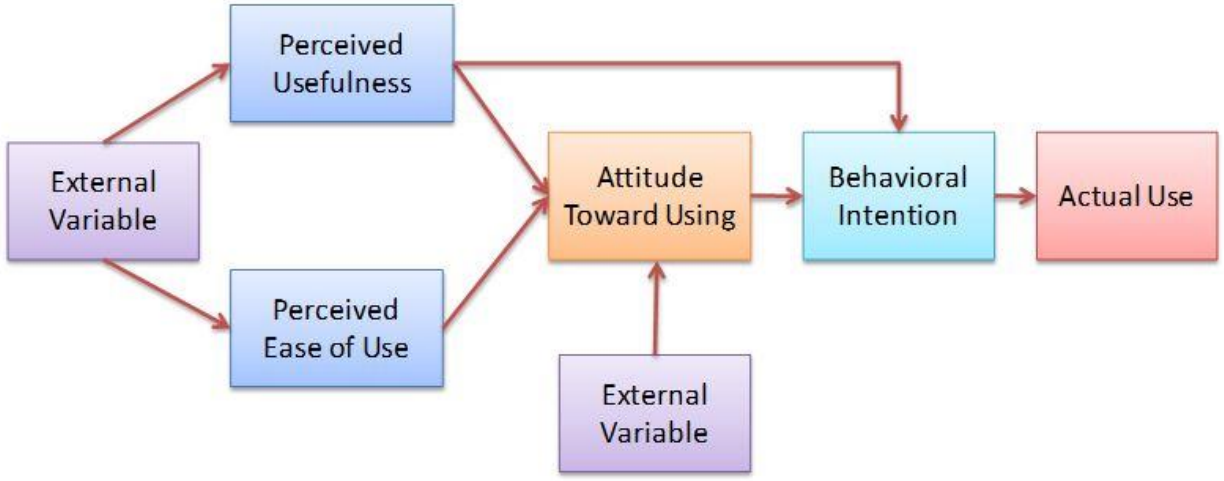

Figure 1: Technology Acceptance Model propounded by Davis (1989)

The acceptability of an information system greatly depends on two main factors:

1. Perceived usefulness
2. Perceived ease of use.

According to Davis, F. (1989), perceived usefulness may be defined as the amount to which a person feels that adopting a new piece of technology will increase his or her efficiency and productivity at work. According to Davis (1989), a system is considered to have a great deal of value if the user perceives a constructive link between the system's usage and its performance. The degree to which the usage of a system or piece of technology is considered as needing minimal extra effort on the part of the user is referred to as the perceived ease of use of that system or piece of technology. A user's opinion on the usefulness of a technology has a substantial influence on how they intend to put it to use in their own life or business. According to Kpolovie (2012), the frame of mind of the user as well as the system's ability to fulfil the user's needs are factors that influence the adoption of a certain technological system. Guzman and Nussbaum (2009), who suggested that obtaining hardware or software alone is inadequate for technological integration, highlighted the relevance

of the user's thinking. They said that technological integration requires more than just acquiring gear or software.

Expectation Confirmation Theory

In an effort to explain the joy experienced after a purchase or adoption, cognitive theory ECT examines three factors: expectations, perceived performance, and the disconfirmation of beliefs. Richard L. Oliver created the basis for the concept in two papers that were launched in 1977 and 1980 respectively. After completing a purchase, a customer is said to be satisfied with the transaction when the product either meets or surpasses their expectations (also known as positive disconfirmation). Customers have the ability to voice their displeasure (referred to as negative disconfirmation) when a product does not meet up to their standards (Oliver, 1980; Spreng et al. 1996). The model may be broken down into its four primary components, which are referred to as the expectations, performance, confirmation, and satisfaction structures. According to Churchill and Suprenant (1982), behavioural norms are the things that individuals can typically expect on from one another. According to the expectation-confirmation theory (ECT), a rise in a person's level of satisfaction occurs when their expectations and their perceptions of their performance are linked. The amount of this impact is determined by the degree to which one may establish either positive or negative linkages between one's expectations and their actual performance. Customers use the standards they have set for themselves as a yardstick to measure the quality of the ECT services they get. The theory proposes that confirming evidence leads to happiness, whereas disproving evidence leads to

depression.

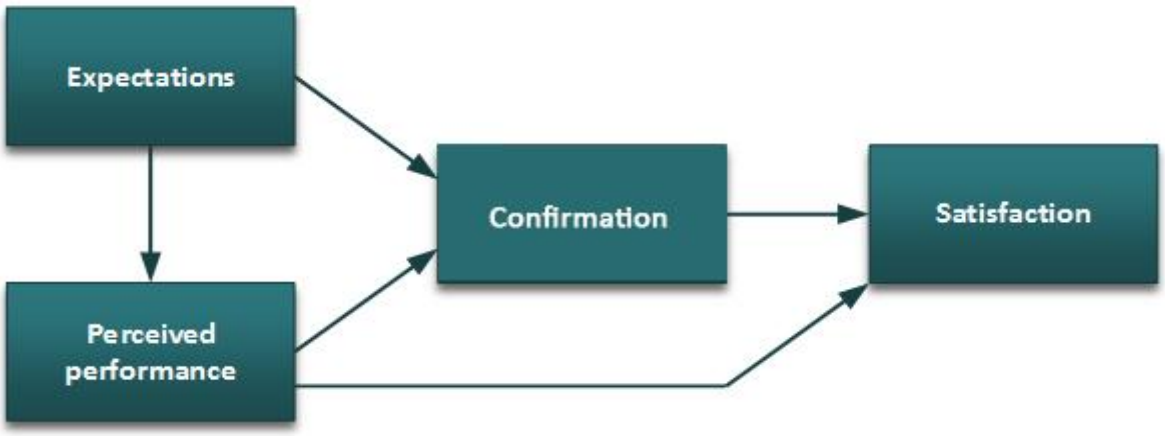

Figure 2: Expectation Confirmation Theory

Satisfaction

Satisfaction is measured by contrasting actual performance with that which was anticipated (Chen et al., 2010). Bhattacherjee (2001) argues that satisfied prior experience is the most crucial criterion in evaluating an IS adoption. The opposite is true: unpleasant feelings, such as those brought on by poor service, reduce happiness. According to previous studies, consumers' satisfaction level influences their purpose to continue using IS (Bhattacherjee, 2001).

Confirmation

Confirmation is the gap between a customer's expectations and their experience, as defined by Oliver (1980). According to ECT (Chen et al., 2010), both expectations and disappointments might affect one's level of happiness. The term "disconfirmation" refers to a situation in which actual results fall short of expectations. According to Bhattacherjee (2001), the advantages of using an IS are achieved when confirmation (perceived performance above expectation) is reported, as opposed to disconfirmation (perceived performance behind expectation), which suggests that the expectation has not been met.

Conceptual Framework

"The conceptual framework sets the stage" (McGaghie, Bordage, & Shea, 2001, p. 923) is based on the problem statement. As such, the links between the variables in the study are represented in the researcher's thinking, as seen in the conceptual framework. The framework proposed incorporates some significant components that will address the problem under study.

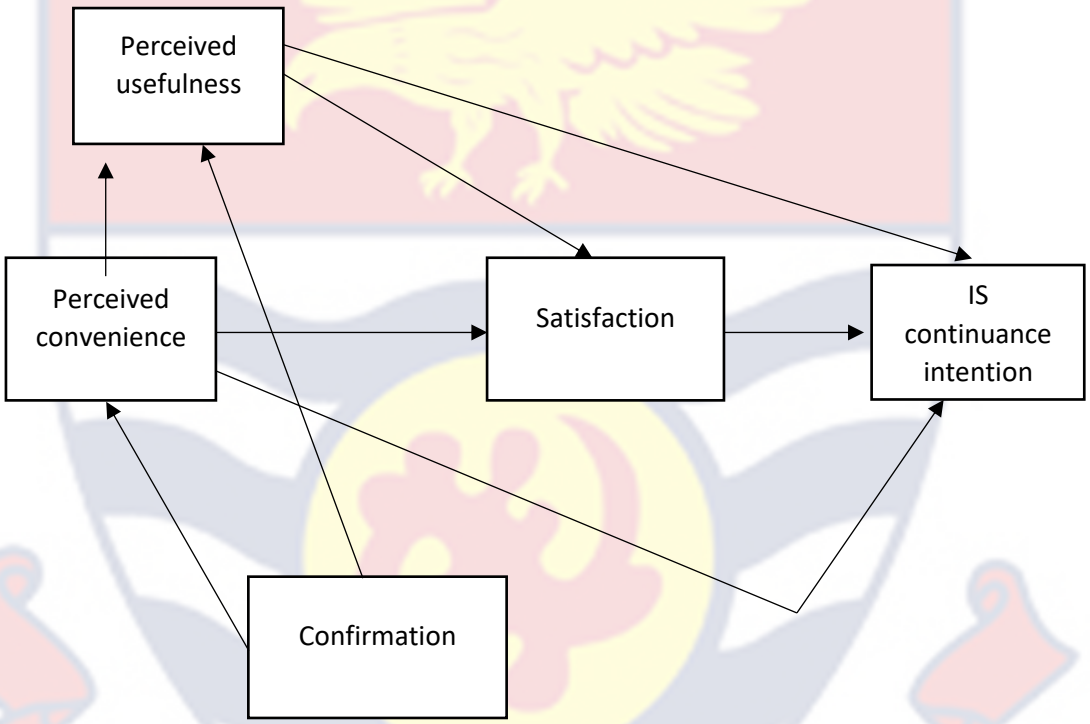

Figure 3: Conceptual framework

Perceived Usefulness

Predicting and explaining how people will accept and use IT has been a primary focus of information systems research. According to the technology adoption paradigm (Karahanna & Straub, 1999), people's propensity to embrace novel information technology is highly impacted by their judgements of the technology's value and their degree of comfort with using it. In other words, individuals will use IT. (Opoku, 2020). It often makes reference to the feelings that customers or users have following

an encounter. The banking and education sectors, in particular, have adopted the widespread acceptance of perceived usefulness. Users are urged to take use of cutting-edge, user-friendly self-service technologies to increase their independence while doing financial duties like making transactions. According to Maranguni and Grani (2015), an individual is convinced that making use of a certain piece of technology would boost productivity on the work is captured by the perceived utility I measure. Studies on the spread of technology in various industries suggest that users' perceptions of the technology's usefulness are used determining whether or not they will adopt and use it (Mortenson & Vidgen, 2016; Chang, Hajiyev, & Su, 2017). That it can be implemented in classrooms and provide the desired results is an external variable or aspect in this study. It was also shown that people's perspectives on eHealth as well as their openness to adopting the technology were strongly impacted by their perceptions of the technology's use as well as the simplicity with which it might be used. Furthermore, it was shown that technological infrastructure may affect mindsets and plans for eHealth implementation in low-resource contexts.

Perceived Convenience

Adoption of a technology is taught as by whether or not its consumers actively utilise it rather than just tolerating it (Arnold & Klee, 2016). Users will be more willing to embrace new technology if it offers a greater number of benefits and is simpler to implement. According to Azeroual and Schopfel (2019), a user's intention to use technology (behavioural intention to use) is influenced by the combination of the TAM components perceived utility and perceived ease of use, which may lead to actual system utilisation. According to the findings of Scherer and Teo's (2019) investigation into the variables that impact teachers' intentions to utilise technology, TAM components accounted for 39.2 percent of the variation in the data. The

correlations within the TAM were altered due to several sample, measurement, and publication factors, such as the instructors' experience and the way the TAM variables were expressed. They decided that the TAM was a good framework for investigating tech diffusion. According to studies on older people's adoption and use of robots to help ageing in place, Mois and Beer (2020) found that researchers have looked at why older users would perceive a specific robot to be easy to use or beneficial. However, additional study is needed to completely understand the specific usage scenarios and the features that favour long-term adoption, despite the fact that older people have positive attitudes towards robots that may help them age in place.

Confirmation

In today's environment, when new technologies are rapidly being developed and disseminated, the rate at which people embrace these technologies is seen by a number of factors, including the accessibility of the technology, how convenient it is, how much demand there is from consumers, and how secure the technology is. (Lai, 2017). The research conducted by Egea and González (2011) investigates the link between doctors' actual use of electronic health records (EHRs) and their intentions to utilise EHRs. Electronic health records (EHRs) are an essential component of health information technology. The findings show the significance of attitude-related factors (attitude towards use and perceived institutional trust), as well as the relevance of cognitive instrumental processes (utility evaluations), in determining whether doctors intend to utilise EHCR systems or not. The physicians' perceptions of the dependability of the institution had a direct impact on a few aspects of the EHCR systems, including their effectiveness, convenience of use, and attitude. In addition, trust was the only factor that moderated the influence of doctors' assessments of risk and the integrity of information on their adoption of EHCR systems.

According to Oliver, R. L,. (1980), a client's confirmation occurs when their experience differs from their expectations. According to ECT, one's level of contentment is affected by both positive and negative confirmations. (2010) For example, Chen et al. When results fail to match expectations, this is known as a disconfirmation. In contrast to disconfirmation, which indicates that the expectation has not been realised, confirmation (perceived performance above expectation) indicates that the benefits of IS use have been attained (Bhattacherjee, 2001). Users want to make sure that a technology product is useful by comparing how it performs in practise to their expectations.

Satisfaction

Users evaluate the quality of a product is on how much of their confirmation they received and how well it matched their expectations. The outlook The confirmation paradigm is fundamentally cognitive in nature (Oliver, 1980) due to the comparative process required in confirmation judgements. Each client has a probability density function representing the likelihood of receiving a given quality outcome, as suggested by the work of Rust, Inman, Jia, and Zahorik (1999). Research on consumer opinions suggests that several factors contribute to consumers' assumptions about a product's usefulness. Some people think that making clients happy is as important as buying insurance since it ensures a steady stream of repeat business. After a little setback, customers are more likely to stick with a firm (Anderson & Sullivan 1993, p. 160). The confirmation hypothesis, which takes into account both expectations and perceived performance, posits that the former is a strong predictor of the latter.IS Continuance

A customer's continuation intention is their desire to keep using a service beyond their first trial. Aslam, Ham, and Farhat's 2019 study aimed to look for the correlation in

user satisfaction (S) and persistent usage intention (CI) with regards to mobile social commerce. The research found that confirmation had no effect on user satisfaction but did have an effect on perceived usefulness. Although pleasure cannot guarantee CI, perceived utility was a significant factor in both user contentment and social commerce. In order to learn what factors influence people's intention to return to an informative website, or continuity intention, researchers Bhattacherjee and Premkumar (2004) studied online banking customers. The results corroborate the hypothesis and show that future Internet usage is related to users' current levels of contentment and their estimation of the service's worth.

According to Bhattacherjee and Premkumar (2004), the expected benefits of utilising information systems have been realised when observed performance meets expectations, while the expectation has not been met when observed performance falls short of expectations.

How the Theory Relates to this Study

Once academics have consented to utilise ICT tools for facilitation at the institution, the ICT directorate should educate them in their usage to increase their skill with them. The hypothesis was judged appropriate for this research since it outlines both the benefits of the continue usage of ICT and the causes of consumers discontinuing usage of a product. Users accept and utilise new things because of their pleasure and other external circumstances, as was also stated in the article. The theory offers insight into how to maintain new ideas within the social system since technology is always evolving and new hardware and software components are continually being added.

First, after developing an initial expectation of technology prior to purchase, lecturers embrace and use it in facilitation. After some early usage, they generate views about

the technology's performance. Then, they compare the perceived performance to those expectations to see how much of their original expectations were met. Based on the quantity of confirmation they got and the anticipation that served as the foundation for that confirmation, they then build a satisfaction or affect. Consumers who are pleased with the functionality of the technology are more likely to keep purchasing it, while those who are not will stop utilising it moving ahead.

Summary and Knowledge Gab

The literature review mainly focused on worldwide and national efforts to integrate ICT into school curriculum, as well as theoretical frameworks and policy initiatives. Despite computers' popularity as learning aids, too frequently funding goes to initiatives that do not help achieve the stated aims. Several studies have pointed to a serious decline in the use of ICT in educational settings. There is a positive relationship between instructors' beliefs about integrating ICT into the classroom and students' perceptions of their personal learning experiences with ICT. Some teachers elected to use ICT in their lessons even though students' use of such tools was relatively low.

A lack of sufficient Internet bandwidth is a major barrier to ICT integration in research and teaching, as found by the research of Kunda, Chembe, and Mukupa (2018) on the variables that influence Zambian higher education lecturers' attitudes towards integrating ICTs in teaching and research. Keeping teachers up-to-date on technological developments is not a simple endeavour, and it never has been. The unwillingness of some educators to accept technological solutions is an issue that needs fixing. The study of how and why schools use ICT has received a lot of attention. The University of Cape Town had a role in these studies, which delved into several fields of study. The following studies are exceptional examples of their kind:

Edumadze, and Owusu (2013), "Information and Communication Technology Use for Facilitation at a Ghanaian University: The Case of University of Cape Coast"; Edumadze and Kuadey (2019), "Information and Communication Technology Use for Facilitation at a Ghanaian University: The Case of University of Cape Coast"; Edumadze and Kuadey (2014), "Evaluating Lecturers' Awareness and Perceptions of why the investigation did highlight certain issues in the educational system, and why it did not investigate the systemic causes. The study's major goal is to survey undergraduates at the University of Cape Coast about their experiences with the school's ICT infrastructure, facilities, application and use in the classroom, and accessibility.

CHAPTER THREE

RESEARCH METHOD

Introduction

This chapter of the study describes the methods and procedures that was to be used to conduct the study. It includes the research design, the population, the sample and sampling technique, instrumentation, data collection and data analysis. Validity and reliability of instrument will also be discussed.

Research Design

A study design, according to Sarantakos (2013), is a road map defining how data on a certain topic should be gathered and processed. The descriptive survey design with a quantitative approach was chosen as the best research technique to apply given the nature of the research topic and the goal of the study. The objective is to extrapolate data from a population sample in order to draw conclusions about the traits, attitudes, and behaviour of the population (Best & Khan, 2006). According to Amedahe and Gyimah (2003), descriptive survey designs use a range of data collection strategies, including questions in a way comparable to this. According to Fraenkel and Wallen (2000), one of the key downsides of this approach is that its outcomes might be untrustworthy. This is because commonly requested inquiries have a propensity to pry into respondents' personal issues and because respondents may not be entirely truthful in their responses. The researcher was critical of the questions in order to get improved levels of clarity, accuracy, dependability, measurement standardisations, and research originality. The primary objectives of quantitative research are to gather information and provide firm conclusions among varied audiences (Babbie, 2010). Gay and colleagues contend that judgements about our world and its phenomena cannot be taken as true from a quantitative perspective without measurement. In order

to ensure that the research is enhanced by the effectiveness of the method and to provide research questions that will guide the inquiry, the quantitative technique was utilised for this study.

Study Area

This particular research was carried out by the University of Cape Coast, which can be found in the Central Region of Ghana. In the city of Cape Coast, Ghana, there is a public, coeducational research institution known as the institution of Cape Coast. The urgent need for education professionals with advanced degrees and current licences in the area led to the founding of the university in 1962. The university was formed as a consequence of this requirement. It was founded in order to meet the need for graduate instructors at second-cycle institutions such as teacher training colleges and technical institutes, which had been neglected by the two public universities that were operating in the country at the time. Since that time, the university's primary focus has shifted to the education of professionals in the fields of agriculture, medicine, and teaching, among other professions. The educational establishment can be found on a hilltop about five kilometres to the west of Cape Coast. From this vantage point, one can see the ocean. Both the Southern Campus (at the Old Site) and the Northern Campus (at the New Site) serve as its primary operating centres. At the moment, there are six different colleges that make up the University of Cape Coast. There are several schools and departments at each institution. According to the university's housing policy, first-year students are housed in some seven dormitories. There are around some 70,000 undergraduate and 10,000 graduate students enrolled, both domestic and foreign.

Population

Fraenkel, Wallen, and Hyun (2011) assert that the population is the larger group to whom one desires to apply study results. In other words, this is the target audience for whom the researcher wants to generalise the study's findings. According to Blaikie and Priest (2019), the study population is made up of all instances that satisfy a predefined set of criteria. The units for whom the study's results are intended to be generalised are therefore defined as the population, as is any group that the researcher seeks to draw conclusions about. All level 300 and 400 students from a few departments across four colleges at the University of Cape Coast—the College of Agriculture and Natural Sciences, College of Education Studies, Colleges of Humanities and Legal Studies, and College of Health and Allied Sciences—make up the population for the purposes of this study. The level 300 and level 400 students were chosen because it is expected that they would have developed some proficiency using technologies and ICT infrastructure, as well as having completed a significant amount of work requiring the use of computers. Two departments were chosen at random from each institution to reflect the population. In actuality, there are around 1,779 people living there (Student Records Unit, 2019). The desired student population is shown in Table 1.

Table 1: *Distribution of Population of Students According to College of Affiliation*

College	**Department**	**Population**		**Total**
		Level 300	**Level 400**	
Agriculture and Natural Science	Computer Science and Information	98	102	**200**
	Environmental Science and Crop Science	120	115	**235**

Education Studies	Basic Education	136	123	**259**
	Mathematics and ICT Education	109	116	**225**
Humanities and Legal Studies	Accounting	123	131	**254**
	Economics	110	105	**215**
Health and Allied Sciences	Sports Science	98	87	**185**
	Health Information Management	99	107	**206**
Total		**893**	**886**	**1,779**

Source: Students Records Unit (2019)

Sample and Sampling Procedure

According to Blaikie and Priest (2019), a sample is a subset of a population's constituent parts that may be utilised to draw conclusions about the population as a whole. The stratified sampling technique was to be used for the investigation. This was to be recognised as the correct approach since it focused on selecting certain characteristic groups that provided the required data for the investigation. According to Fraenkel, Wallen, and Hyun (2011), stratified random sampling "is a procedure in which particular subgroups, or strata, are chosen for the sample in the same proportion as they are found in the population" (p. 95). Using the stratified sampling approach, the population had to be separated into non-overlapping subgroups known as strata (Tagoe, 2009). The four colleges were to serve as the strata in this situation.

Out of a target population of 1,779, the total predicted sample size is 326 students. The sample size was calculated using the Taro Yamane (Yamane, 1973) method with a 95% confidence interval. He asserts that the sample size should be established by the 95% confidence interval and that p = 0.05

$$n = \frac{N}{1 + N\,(e)^2}$$

n = sample size that will be used

N = population of the study

e = sampling error of the study population

The sample size was then calculated as follows:

$$n = \frac{1779}{1 + 1779(0.05)^2}$$

$$n = \frac{1779}{1 + 1779(0.0025)}$$

$$n = \frac{1779}{1 + 4.4475}$$

= 326.571

= 326

The sample size to be considered for the distribution of the questionnaire was determined by the above computation, to be 326 level 300 and 400 students. Since the population was to target third and fourth year students from the four selected colleges, they were to be put into four strata in order to select the proportional sample size that was to make up the entire size of 326. Systematic sampling with a random start was then be used to select members from their proportional sample size from each college to respond to the questionnaires. Fraenkel, Wallen, and Hyun (2011) noted "in systematic sampling, every *n*th individual in the population list is selected for inclusion in the sample" (p.97).

The summary is depicted in Table 2.

Table 2: ***Proportional Sample Size for Each Strata***

College	**Number of Students**	**Proportion of sample size**
Agriculture and Natural Science	435	$\frac{435}{1779}\ x\ 326 = \mathbf{80}$
Education Studies	484	$\frac{484}{1779}\ x\ 326 = \mathbf{89}$

Humanities and Legal Studies	469	$\frac{469}{1779}\ x\ 326 = \mathbf{86}$
Health and Allied Sciences	391	$\frac{391}{1779}\ x\ 326 = \mathbf{71}$
Total	**1,779**	**326**

Instrumentation

To gather data for the study, a questionnaire was to be employed as a research tool. Students were to fill out self-questionnaires as the main method of gathering data on the ground. Best and Kahn (2006) state that when factual information is required, a questionnaire is used. It has to do with a study's goals, the hypotheses and questions that need to be investigated and answered. It was decided to employ both closed-ended and open-ended questions (Appendix A). portions A through D make up the four large portions that make up the questions. The respondents' demographic information was included in Section A. The attitude of students towards ICT infrastructure is covered in Section B. Section C gathered information on how students felt about how teachers used ICT resources, while section D examined how students felt about how ICTs were used in the classroom. A modified four-point Likert scale with the following values is used in the questionnaire.

Ethical Considerations

When used to the field of research, the word "ethics" refers to conducting oneself in a manner that is both ethical and legal. According to Fouka and Mantzorou (2011), researchers have an ethical obligation to protect the rights of the people they study and to effectively convey the results of their work. According to Hesse-Bieber and Leavy (2006), scientific study foresees the possibility of unethical problems and make appropriate preparations for dealing with them. According to Israel and Hay (2006), the integrity of the study was improved, the trust of the participants was preserved,

and inappropriate behaviour that may have had a negative influence on the researcher's institution or organisation was avoided. The length of the questionnaire, the confidentiality and anonymity statement, and the declaration addressing what would happen to the data that was gathered were all subjects of some of the ethical judgements that needed to be made. The participants were assured that the data would not be used for any reasons other than those related to academic research. The research was conducted in a manner that was commensurate with the ethical standards of the University of Cape Coast. The researcher had to get ethical authorization from the University of Cape Coast before beginning the study since the university required it.

Reliability and Validity Issues

Validity

Making sure the proper questions are asked in a clear and concise way is essential to a questionnaire's validity. The "true value" of an argument, according to O'Leary (2010), is "whether methods, approaches, and techniques actually relate to what is being explored" (p. 43). My supervisor required a copy of the survey for in-person discussion and content validity. This was done to make sure that the items on the questionnaire linked to the questions raised by the study. If a test really catches the data that it purports to, it is said to be valid. Items that were determined to be confusing on the instrument have to be rebuilt in order to improve participants' comprehension and achieve the study's objectives.

Reliability

Checking the Cronbach's Alpha value is necessary in order to evaluate the quality of the surveys and identify their shortcomings. This was done to ensure that the questions on the questionnaire were relevant to the objectives of the study as well as

the research subjects that were being investigated. SPSS version 22.0, was going to be utilised in order to assess not just the validity but also the dependability of the questionnaire's queries. In addition to this, this was used to demonstrate that the item being measured by the instrument was dependable and appropriate for the research. It was necessary to reorganise the questions on the instrument in order to increase the participants' level of understanding in order to fulfil the goals of the study. This was done in order to ensure that the research was successful.

Pilot Study

A pilot research was carried out before the final questionnaire was sent in order to identify any issues that would make the study more difficult to complete successfully and to determine if any adjustments might be required. The equipment was operated by thirty students from University of Ghana, Legon. Since the respondents reside close and have similar concerns regarding how ICT infrastructures are seen to be employed in that institution's facilitation, the University of Ghana was selected as the study site. The improvement of the instruments' validity and reliability was the aim of the pilot testing. Participants in the pilot test were invited to complete the surveys and provide feedback or change recommendations for any unclear or ambiguous questions or items. Participants were also instructed to be honest and transparent with the researcher if they experienced any confusion or incoherence when completing the questionnaire. The necessary improvements were scheduled to be performed after the pilot testing.

Data Collection

Creswell (2018) asserts that it is morally and ethically required to respect the study site's location and get permission before visiting a spot. An introduction letter was acquired from the Master of Education (Information Technology) course that is

housed at the College of Distance Education at the University of Cape Coast. This was done so that the data for the research could be collected in an appropriate manner. Because of ethical considerations, this must first get approval from the Institutional Review Board (IRB) of the University of Cape Coast (UCC). Once departmental supervisors provided their clearance, the researcher meets with respondents at the arranged time and location. The researcher got an alphabetical list of all third- and fourth-year students at the various colleges of the university in order to choose each fifth participant for the sample. The sample interval was computed by multiplying each college's population by the recommended sample size (5). The researcher was instructed to choose one at the conclusion after choosing the numbers 1 through 5 at random in order to avoid bias. Students with the numbers 3, 8, 13, 18, and so on were to complete the survey until the necessary sample size was reached, for instance, if student number 3 is chosen.

It is necessary that the starting point be selected at random from the first k elements on the list as opposed to be the first in the list automatically. Each respondent was portrayed using this way exactly and consistently as they appeared in the sample frame. In order to safeguard the privacy of the pupils, no identification was required of respondents when they filled out the survey form. The investigation required that each participant have their own set of tools. The questionnaire was gathered by the researcher so that the results could be immediately cross-checked, minimising the likelihood of numerous errors. When they failed to or gave poor answers to the majority of the questions, respondents were challenged to behave ethically. The data collection process was completed in roughly three weeks in April 2020.

Data Analysis

In order to critically evaluate the research's results and draw reasonable, credible, and agreeable conclusions, it is essential to adjust the data gathered in the course of the investigation. This process may benefit from data analysis. Analysis of Moment Structure (AMOS) version 21 and IBM SPSS Statistics version 22.0 were used to collect and code the data supplied by the respondents. Inferential statistics (including factor analysis, independent samples t-test, and structural equation modelling) and descriptive statistics (including frequency, mean, and standard deviation) were employed to offer a response to the issue.

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter presented the results and discussion based on the data collected. The main objective of the study to explore higher education institution students' perceptions on motivators that promote their continue use of technology based on infrastructure on campus. The specific objectives were:

1. Explore students' perception on ICT infrastructure on campus and its usage for facilitation.
2. Determine students' differences in the latent variables based on academic levels.
3. Determine the effects of the latent variables underlying students' intention to continue using technology for learning based on ICT infrastructure on a higher education institution campus.
4. Determine the combination of the latent variables that best explains a significant portion of students' continuance intention to technology for learning as measured by the latent variables.

Demographic Information of the Respondents

Majority of the respondents (48.20%, n=157) were within the age bracket of 26-30 years. Of the 326 respondents, 54.90% (n=179) were males while 45.10% (n=147) were females. Majority of the respondents being males further supports that of the Ministry of Education's Gender Parity Index (GPI), where there are more men than women enrolled in tertiary institutions across Ghana. (Dokua, 2021). Since the study targeted both level 300 and 400 students, it was necessary to find out the dominant level in the study. Of the respondent, 53.70% (n=175) were level 300 (third year) students while 46.30% (n=151) were level 400 (Final year) students. The rest of the demographic information was summarized in Table 3.

Table 3: Demographic Information of Respondents

Description	N (326)	Percentage (%)
*Gender		
Male	147	45.10
Female	179	54.90
*Program Level		
300	175	53.70
400	151	46.30
*Affiliated College		
College of Education Studies	89	27.30
College of Humanities and Legal Studies	86	26.40
College of Agricultural and Natural Science	80	24.80
College of Health and Allied Science	71	21.50
*Age	6	5.5
20 years and below	65	19.90
21 – 25 years	74	22.70
26 – 30 years	157	48.20
31 years and above	30	9.20

*Response Rate: 100%

Objective 1: Explore students' perception on ICT infrastructure on campus and its usage for facilitation.

The findings and analysis based on the information gathered were provided in this chapter. The findings, as demonstrated by the aggregate averages, generally showed quite high values for all of the independent latent variables: PU (M= 2.69, SD= 0.516), PS (M= 2.53, SD= 0.616), PC (M= 2.79, SD= 0.545), PCo (M= 2.47, S= 0.593), and PTCI (M = 2.56, SD = 0.484). The descriptive analyses reported here (Table 5) suggest that the participants gave the perceived usefulness, perceived pleasure, and perceived convenience of the data excellent, extremely positive assessments. The highest mean (PC = 2.79) indicates that participants believed technology may enhance the course by making it more easy for reviewing content and

other digital learning resources, as opposed to other metrics. The relative means of two of the variables examined in this variable, PC02: Using technology helps me finish my study fast (M=3.10) and PC03: Using technology helps me learn anywhere on campus (M=3.08), both surpassed 2.5.

Table 4: Descriptive Statistics of the Latent Variables

Latent Variable	Mean	SD	Over All Mean (SD)
Perceived Usefulness (PU)			
PU01	2.48	1.057	
PU02	3.01	1.038	
PU03	3.21	0.910	2.69 (0.516)
PU04	2.78	1.030	
Perceived Satisfaction (PS)			
PS01	2.40	1.070	
PS02	2.57	1.078	2.53 (0.616)
PS03	2.58	1.010	
PS04	2.57	1.056	
Perceived Convenience (PC)			
PC01	2.22	0.987	
PC02	3.10	0.852	
PC03	3.08	0.832	2.79 (0.545)
Perceived Confirmation (PCo)			
PCo01	2.32	1.056	
PCo02	2.70	1.018	
PCo03	2.22	1.095	2.47 (0.593)
PCo04	2.41	1.036	
Perceived Technology Continuance Intention (PTCI)			
PTCI01	2.67	1.059	
PTCI02	2.57	1.041	
PTCI03	2.63	1.002	2.56 (0.484)

PTCI04	1.96	.949
PTCI05	2.75	1.068
PTCI06	2.74	1.008

The data demonstrate that participants in the study reported a high mean score for the perceived usefulness measure (Mean = 2.69 SD = 0.516). For this variable, three of the four items had values that were more than the median of 2.5. The median value for this variable is 2.5. The following received very high evaluations from those who participated in the survey: PU02: The use of technology increases my grasp of difficult ideas presented in class (M=3.01); PU03: The use of technology improves my capacity to use it wisely (3.21); PU04: The use of technology improves my ability to collaborate effectively with others (3.22). This illustrates that students considered that technology enhanced the course in terms of assessing content and other digital learning aids when compared to other metrics of effectiveness.

The researcher attributed the program's average mean score of (2.79) on the perceived convenience (PC) domain to the program's compliance with the philosophy, plans, conference recommendations, national efforts, and international projects that the Ministry of Education had set forth for the integration of technology into education. The perceived ease (PC) in relation to education, however, "has achieved the largest mean (2.79) and is notable. It may be shown that the findings are trustworthy since there was no evidence to substantiate the worry that technology would cause them to lose their jobs at school or be given more responsibility. The results described above provide validity to earlier studies. It has been shown that perceived utility and ease of use are effective indicators of adoption of information technology in their link between system attributes and the probability of utilisation. According to Dillon & Morris (1996), it is also feasible that customers would constantly be ready to utilise

and see a certain kind of technology as advantageous if they think it to be helpful and often straightforward to use in carrying out activities. A system that has a high degree of perceived usefulness is one for which a user has a favourable sense of the link between use and performance, according to a research by Davis (1989). The higher mean obtained by the final year students in this study (M=2.80) under the perceived usefulness also supports this finding.

With a mean average of (2.53) on the Perceived contentment (PS) dimension, there is a high level of contentment. Three of the four products in this domain received the same high level of satisfaction. The item (4), "I am satisfied with the overall ICT infrastructure on campus," had the highest mean (2.58) and standard deviation (1.010), followed by item (3), "I can use the internet in classrooms and on campus without interruption." This high level of satisfaction is attributed to the students' actual or perceived satisfaction with the campus's ICT infrastructure, as well as the need to keep up with the rapid advancements in education, particularly in ICTE, and to support the teaching-learning process.

The Perceived Confirmation (PCo) domain had the lowest mean score of all the domains (PU, PS, PC, PCo, and PTCI), 2.47, and modest degree of satisfaction. Items (2) "Some lecturers do not have the technological skills required to use ICT resources in teaching" are in agreement with a study by Leem and Lim's (2007) investigation of the state of e-learning in Korea and strategies for enhancing competences with the aim of enhancing graduates' performance skills in e-learning. The findings indicated that, particularly at certain small private colleges and universities, both students and professors suffered from a lack of assistance in this area as well as from a lack of sufficient possibilities to encourage active participation in e-learning courses and programmes. The Study modules are connected, with logical and sequential

conclusions offered.This can be due to the survey's brief time constraints, which forced students to strictly stick to the time given for completing the questionnaires for this study. Additionally, students were unable to set aside any additional time for utilising technology to check learning goals and expectations about themselves, or there was a gap between theory and practise when it came to using technology for learning.

At last, the domain Regarding the Perceived Technology Continuance Intention (PTCI), this domain ranked five out of its six items got a high degree of satisfaction, the highest of which indicates the perceived intention to continue using technology rather than any alternative methods of learning. This domain had a mean average of (2.56), SD of (1.008), and an intermediate level of satisfaction. The statement "My intention to continue using technology for learning is due to the enjoyable experience I have using it" came in at number five on the list.Item (6) "Adequate ICT resources could promote the continual use of technology for learning and learning on campus" came in second with a mean of (2.74) and SD of (1.008), followed by it with a mean of (2.75) and SD of (1.068). This could be explained by securing an adequate number of modern computers and their labs, connecting them to the campus's free internet, providing modern educational software, and also outfitting other facilities, like libraries and lecture halls, with nice, comfortable furniture and air conditioners. All of those contributed much to achieving that high level of pleasure. When the responses to this question were compared to those of related study, it was found that each of the following was supported: Al-Ohali (2003); Martin et al; Annison (2001); Kozma (2004).

A further inspection of the data showed that the mean value for the dependent variable that the research participants provided was very high (Mean=2.56 SD=0.484). This

demonstrates how positively students see the integration of various forms of technology into their educational experiences moving ahead. The results indicate that the people who participated in the study are quite enthusiastic about continuing to make use of technology for their education. The following items earned extremely high ratings from respondents (mean above 2.5) for five of the six items that made up the dependent variable: PTCI01: My intentions are to continue using technology rather than any alternative methods (M=2.67); PTCI02: I intend to keep using technology to enhance my learning rather than stop doing so (M=2.57); PTCI03: I believe lecturers need ongoing professional development in the use of ICT resources (M=2.63); PTCI05: My intention to continue using technology for learning is because I have enjoyed using it (M=2.75); and PTCI06: Adequate ICT resources are

Objectives 2: Determine students' differences in the latent variables based on academic levels.

In addition, this research looked at whether there were any differences in the reported latent variables based on the respondents' levels of education. Table 5 shows that when the t-test results were compared, only one of the independent latent variables (PC) was determined to have a statistically significant difference. The results indicated that the mean scores for the third year (Mean=2.72, SD=0.563) were significantly lower than the mean scores for the fourth year (Mean=2.86, SD=0.516), with a p-value of 0.026. The average score for the third year students was 2.72, while the average score for the fourth year students was 2.86. This has also bolstered and validated the findings of a research by Maranguni and Grani (2015), who found that a person's perception of how convenient a technology is to use is directly correlated with their belief that using that technology would boost their productivity on the job. Two characteristics that are important in the adoption of IT are the perceived

simplicity of use and the perceived utility, as stated by Karahanna and Straub (1999). The much higher mean score (M=2.86) earned by respondents over the last year indicates this is the case according to the technology acceptance model, which examines a computer system user's belief that adopting a certain system would increase his or her performance. This research lends credence to a recent study by Mortenson, Vidgen, Chang, Hajiyev, and Su (2017) that found that a person's perception of the technology's utility was the most important element in whether or not they would adopt it. External variables or factors influence a user's perception of a technology's usage. New technologies are more likely to be accepted and used if they are perceived to be useful. One of these external factors or things to think about may be the fact that using it to teach a certain subject would be suitable, for instance.

Table 5: Differences in Latent variables based on Respondents 'Academic Levels

Measure	Third Year		Final Year		
Perceived Usefulness (PU)	Mean	SD	Mean	SD	Sig
PU01	2.41	1.089	2.56	1.017	*.198*
PU02	3.09	1.039	2.93	1.033	*.169*
PU03	3.19	.918	3.23	.903	*.718*
PU04	2.74	1.071	2.81	.983	*.532*
Overall	2.68	.528	2.70	.504	***.789***
Perceived Satisfaction (PS)					
PS01	2.56	1.076	2.26	1.049	*.024*
PS02	2.49	1.087	2.67	1.063	*.126*
PS03	2.57	.980	2.60	1.047	*.787*
PS04	2.16	1.088	2.54	1.025	*.556*
Overall	2.45	.611	2.52	.624	***.963***
Perceived Convenience (PC)					
PC01	2.12	1.046	2.34	.902	*.041*
PC02	3.11	.841	3.08	.868	*.759*
PC03	3.03	.867	3.13	.789	*.262*
Overall	2.72	.563	2.86	.516	***.026***
Perceived Confirmation (PCo)					
PCo01	2.37	1.090	2.26	1.016	*.361*
PCo02	2.69	1.022	2.72	1.016	*.794*
PCo03	2.25	1.105	2.19	1.086	*.621*
PC004	2.45	1.059	2.38	1.012	*.554*
Overall	2.51	.584	2.44	.603	***.306***
Perceived Technology Continuance Intention (PTCI)					
PTCI01	2.67	1.050	2.67	1.030	*.919*

PTCI02	2.58	1.063	2.56	1.017	*.902*
PTCI03	2.58	1.052	2.68	.941	*.373*
PTCI04	1.97	.931	1.95	.972	*.817*
PTCI05	2.64	1.130	2.88	.979	*.042*
PTCI06	2.80	.971	2.67	1.050	*.243*
Overall	2.55	.479	2.56	.490	**.813**

However, the data also showed that there was no statistically significant difference in the respondents' stated desire to continue using technology between the third-year mean score and the fourth-year mean score. (Mean=2.55, SD=0.479) and the fourth-year mean score (Mean=2.56, SD=0.490). The aforementioned information and the mean values make it obvious that students' continued use of technology—in this instance, the internet—assisted in their learning process. The data in the table demonstrates that the fourth-year students' mean scores were much higher than those of the third-year students. This is due to the fact that the fourth-year students had far more and better experience using the internet than their third-year counterparts at the school and had continually employed it more. The argument that was made by the Canadian ICT policy experts in Corbett & Williams (2002) is that the use of ICT in schools would boost students' capacity to use and apply software and technology in the workplace, in addition to increasing academic performance equality among students. This was stated in the article.

Objectives 3: Determine the effects of the latent variables underlying students' intention to continue using technology for learning based on ICT infrastructure on a higher education institution campus.

Analysis of Confirmatory Factor Analysis

This study employed structural equation modelling (SEM) and the two-step procedure for assessing measurement and structural models (Anderson & Gerbing, 1988) to analyse the collected data. The goal was to maximise the reliability of the findings, thus we did this. Structural equation modelling (SEM) is a flexible statistical method

for studying relationships between multiple-item constructs in accordance with theoretical models, as stated by Yang and Lai (2010). SEM may be used to evaluate the potential for a link between the two variables. Table 6 displays the outcomes of a CFA to confirm hypotheses. Each survey item had a factor loading of 0.65 or higher, as reported by Hair, Black, Babin, and Anderson (2010). The constituent parts of the constructions were checked using Cronbach's alpha and Composite Reliability (CR). A Cronbach's alpha of 0.7 or above is considered adequate by Nunnally and Bernstein (1994), whereas values of 0.8 and 0.9 are regarded as very reliable. Table 6 shows that the dependability ratings for all study items were more than or equal to 0.70. Hair et al. (2010) found that the composite dependability, a measure of the internal consistency of the constricts, was more than 0.70.

The concept of convergent validity was created so that researchers could look at the connections between the many indicators they utilised in their surveys. The average variances extracted (AVE) and the composite reliability (CR) measurements were used to determine convergent validity by Hair et al. (2010). According to Fornell and Larcker (1981), a reported dimension with an AVE greater than 0.5 is deemed to have good convergent validity. All reported AVE and CR variable values in this study were found to be higher than the predetermined minimum and maximum thresholds for adequate convergent validity. In this research, we found that the measured dimensions had a Chi-square value difference of above 40 (Bagozzi & Phillips, 1982) based on pairwise comparisons of dimensions and discriminant validity, which is used to discover the differences between the different constructs. Researchers were able to reach this conclusion because they used discriminant validity to analyse the differences between the different conceptions. Chen, Yen, and Hwang (2012) state that high discriminating validity is highly recommended.

To determine whether or not the theoretical model and the observed data are in agreement, this study assessed the "goodness-of-fit" of the measurement model. The goodness-of-fit of the model was evaluated using many different indices, including the "Absolute Fit Measures" (X2 / df, GFI, AGFI, RMR, and AGFI), the "Comparative Fit Indexes" (NFI, RFI, IFI, NNFI, and CFI), and the "Parsimonious Fit Indexes" (PGFI, PCFI, and PNFI). These metrics evaluate the level of congruence between two models. These are the recommended minimum values for each part of the "Absolute Fit Measure": GFI and AGFI should be more than 9.0 (Bentler, 1990); X2/df is 3, suggesting that the lower the number, the better (Bentler, 1989); X2/df is 3.

Table 6: Reliability Analysis and Convergent Validity of Items of the Constructs

Construct	Construct item	Factor Loading	Cronbach's Alpha	A.V.E	C.R.
Perceived Usefulness (PU)	PU01	0.769	0.801	0.508	0.689
	PU02	0.720			
	PU03	0.835			
	PU04	0.768			
Perceived Satisfaction (S)	S01	0.846	0.808	0.614	0.756
	S02	0.789			
	S03	0.708			
	S04	0.748			
Perceived Convenience (PC)	PC01	0.712	0.801	0.553	0.775
	PC02	0.737			
	PC03	0.622			
Confirmation (C)	C01	0.838	0.803	0.547	0.708
	C02	0.743			
	C03	0.742			
	C04	0.822			
Technology Continuance Intention (TCI)	TCI 01	0.724	0.769	0.501	0.757
	TCI02	0.766			
	TCI03	0.773			
	TCI04	0.801			
	TCI05	0.829			
	TCI06	0.734			

Note: AVE = Average Variances Extracted, CR = Composite Reliability

RMR and RMSEA should be less than 0.08 and 0.06, respectively, and a score near to 0 indicates that the model fits the data very well (Hair et al., 2010). According to Bentler (1990), the components of "Comparative Fit Indexes" should have a cutoff value higher than 0.9, whereas those for "Parsimonious Fit Indexes" should have a cutoff value higher than 0.5. The measurement and structural models created for this inquiry that met all fit criteria are shown in Table 9.

Table 7: Discriminant Validity

Dimensions X^2 = 197.1 (d.f = 126)	X^2(d.f. = 127)	*Change in X^2
(PU, S)	260.77	63.67
(PC, PU)	259.64	62.54
(C, PU)	251.43	54.33
(PU, TCI)	264.97	61.87
(PC, S)	254.12	57.02
(C, S)	252.22	55.12
(S, TCI)	246.77	49.67
(C, PC)	266.93	69.83
(PC, TCI)	259.43	62.33
(C,TCI)	248.88	51.78

Table 8: Measurement and Structural Model Goodness-of-fit Indices.

Fit Measure	Criterion	Measurement model result	Structural model result
Absolute fit measures			
$X^2/d.f.$	<3.00	1.91	1.95
GFI	>0.9	0.91	0.92
AGFI	>0.9	0.93	0.94
RMR	<0.08	0.07	0.06
RMSEA	<0.06	0.04	0.05
Comparative fit measures			
NFI	>0.90	0.91	0.92
RFI	>0.90	0.94	0.94
IFI	>0.90	0.93	0.94
NNFI	>0.90	0.95	0.95
CFI	>0.90	0.93	0.94
Parsimonious fit measures			
PFI	>0.5	0.66	0.68
PCFI	>0.5	0.72	0.78
PGFI	>0.5	0.78	0.79

Note:

GFI = Goodness-of-fit index

AGFI = Adjusted goodness-of -fit index

RMR = Root mean square residual

RESEA = Root mean square error of approximation

NFI = Normed fit index

RFI = Relative fit index

IFI = Incremental fit index

NNFI = Non-normed fit index

CFI = Comparative fit index

PFI = Parsimonious fit index

PCFI = Parsimonious comparative fix index

PGFI = Parsimonious goodness-of-fit index

For this investigation, a total of 10 hypotheses were presented. Two study hypotheses predicated that perceived usefulness would favourably influence degree of satisfaction and consequently influence desire to continue using technology. The findings indicated that perceived usefulness positively influenced degree of satisfaction (=.31) and desire to continue using technology (=.27), respectively, supporting the hypotheses H1 and H4.

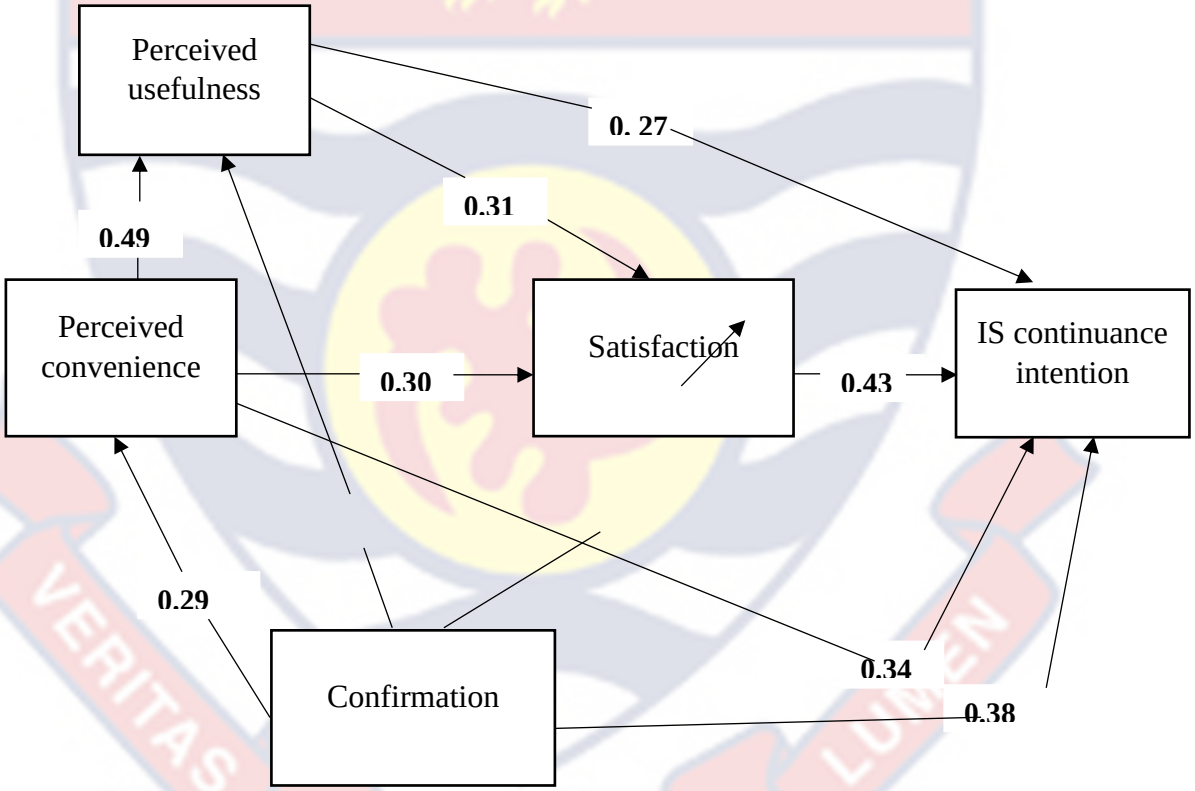

Figure 4: Result Model

Three more study hypotheses were based on the idea that perceived convenience would positively affect how helpful, satisfied, and motivated to utilise technology users consider it to be. The results show that perceived convenience positively influences perceived usefulness (=.49), level of pleasure (=.29), and

willingness to keep using technology (=.34). As a consequence, H2, H5, and H9 were accepted. Four additional study hypotheses predicted that confirmation would have a positive impact on four other aspects of technology use: perceived utility, level of enjoyment, perceived convenience, and motivation to continue using the technology. The findings demonstrated that confirmation positively affected perceived usefulness, level of pleasure, perceived convenience, and motivation to continue using technology, with values of 0.30, 0.40, 0.22, and.38, respectively. The H3, H6, H8, and H10 theories were all accepted. The final hypothesis of the research (H7) assumed that the the level of satisfaction would positively affect technology continuance intention. The result supported this hypothesis with reported β value of 0.43. Figure 4 and Table 9 summarized the research model and SEM results respectively.

Table 9: Structural Equation Modelling Results

Hypothesis	Independent Variables	Dependent Variables	Standardized Path Coefficient (t-value)	Results
1	PU	S	0.31 (4.45)**	Supported
2	PC	PU	0.49(2.34)*	Supported
3	C	PU	0.30(2.57)*	Supported
4	PU	TCI	0.27(3.23)*	Supported
5	PC	S	0.29(4.07)**	Supported
6	C	S	0.40(5.67)**	Supported
7	S	TCI	0.43(2.34)**	Supported
8	C	PC	0.22(2.87)*	Supported
9	PC	TCI	0.34(3.98)**	Supported
10	C	TCI	0.38(5.45)**	Supported

Note: *p-value < 0.05; **p-value < 0.01

Objective 4: Determine the combination of the latent variables that best explains a significant portion students' continuance intention to technology for learning as measured by the salient motivators.

Bartlett's test of sphericity was used to assess the identity matrix status of the correlation matrix (Eyduran, Topal, & Sonmez, 2010). The Kaiser-Meyer-Olkin (KMO) measure of sample adequacy (Sharma, 1996) is used to determine whether or not the variables are homogeneous. For the purpose of this investigation, a KMO score of 0.78 was considered appropriate for factor analysis since it was higher than 0.60. The results of Bartlet's sphericity test were statistically significant (p =.000). According to what the researcher discovered, the correlations included in the data set were appropriate for the factor analysis and should have been used. The component analysis findings (Table 8) not only demonstrated a relationship between the constructs but also how effectively they loaded together, with 67% of the variance being explained (Table 10). This demonstrated that the items loaded well and seemed to assess the expected construct, according to Lorenzo-Seva (2013). The factor analysis's results confirmed the concept's validity.

Table 10: Factor Loading, Eigenvalues, and Variance for PU, S, PC, C and TCI

	Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Square Loadings		
Component	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	2.485	61.698	61.698	2.485	61.698	61.698
2	.741	11.823	73.521			
3	.718	11.356	84.877			
4	.642	9.841	94.718			
5	.414	5.282	100.000			

Extracted Method: *Principal Component Analysis*

A predictive model for Technology Continuance Intention using PU, PS, PC and C Latent Variables

Perceived Technology Continuance Intention (PTCI) (dependent variable) for learning was hypothesised in the study based on students' reported Perceived Usefulness (PU), Perceived Satisfaction (PS), Perceived Convenience (PC), and Confirmation (PCo) of using technology for learning based on ICT infrastructure. The study sought to ascertain, among other things, how much respondents' plans to continue using technology were influenced by PU, PS, PC, and PCo. So, using the latent variables PU, PS, PC, and PCo, a research was carried out to develop a prediction model of technological continuing intention. The variables were treated to a bivariate correlation before the regression analysis. The findings revealed substantial, direct, and weak correlations between the independent latent variables, with PC and PS having the greatest correlation (r=0.61, p0.001) between them. This outcome seems to demonstrate the interconnectedness and coordinated motion of the four variables. The results showed that for PU (r =0.49, p 0.001), PS (r=0.56, p 0.001), PC (r=0.43, p 0.001), and PCo (r=0.48, p 0.001), there was a significant correlation between the independent components and the dependent latent variable. Table 11 contains a list of the coefficients, which were all positive and rather strong (Dancey & Reidy, 2007).

Table 11: Bi-variate correlation among latent variables

Latent Variable	**PU**	**S**	**PC**	**C**	**TCI**
PU	1.00				
S	0.46** *(0.000)*	1.00			

PC	0.54*	0.52**	1.00		
	(0.000)	*(0.000)*			
C	0.60*	0.61**	0.49*	1.00	
	(0.000)	*(0.000)*	*(0.000)*		
TCI	0.49*	0.56**	0.43**	0.48**	1.00
	(0.000)	*(0.000)*	*(0.000)*	*(0.000)*	

Note: *p-value < 0.05; **p-value < 0.01

These revealed correlation coefficients appear to place the four independent factors as potential indicators of the intention to continue using technology. Further analyses were conducted in order to investigate this considerably more thoroughly. To determine how well PU, S, PC, and C might forecast technology continuance intention, a regression analysis model was applied. The results are summarized in Table 12.

Table 12: Coefficients of Predictor Measures (PU, S, PC, C) against Technology Continuance Intention (TCI)

	Co-efficient			**F-test**	
Model	**Unstandardized**	**Standardized**	**Sig.**	**F**	**Sig.**
(Constant)	.374		.007	66.550	.000
PU	.366	.388	.000		
S	.191	.244	.000		
PC	.158	.178	.000		
C	.217	.266	.000		

Significant at P < 0.05; Multiple R =0.822; R^2=0.675; Adjusted R^2=0.647

After taking into consideration all of the measurements in the model, the F test, which was associated with the independent variables and had the value F = (4,321) = 89.01 (p 0.001), was significant. This demonstrated that the independent variables will relate to dependent variable. All of the significant values that were found for the variables (PU = 0.000, S = 0.000, PC = 0.000, and C = 0.000) were less than 0.05, which

indicates that they have a substantial influence on technology continuation intention and may thus be included in a predictive model.

The calculated R square was used to assess the variables' capacity for explanation. According to the results, the four factors—PU, S, PC, and C—alone accounted for approximately 68% of the variation in technology continuity intention. In other words, the combined effect of PU, S, PC, and C accounted for 68 percent of the variation in participants' desire to continue using technology for learning. Further research was done into how each of these elements affected the Technology Continuance Intention. The approximately standardised coefficients (PU=0.39, S=0.24, PC= 0.18, C=0.27) provide the answers. The increase in intention to employ technology that happens when each of the pertinent independent variables rises by one unit was clearly shown by these coefficients. The regression model, as determined by the standardised coefficients, is as follows:

TCI's prediction is for 0.39PU, 0.24PS, 0.18PC, and 0.27PCo.

Consequently, PU seemed to be the most accurate reflection of participants' willingness to keep utilising technology for learning. The findings show that for every additional unit of PU, one's Technology Continuance Intention increases by 0.39 units. PC was ranked as the least reliable predictor of the four, with C ranking as the second-best.

Perceived utility (PU) and perceived ease-of-use (PEOU) are crucial in determining whether or not consumers would adopt information technology, as stated by the TAM (Karahanna & Straub, 1999). Perceived utility (PU) and perceived ease-of-use notions are evidently crucial in this context. Also shown is the user's confidence in the system's ability to boost productivity (Opoku, 2020). Perceived usefulness is seen as a predictor of actual conduct, as shown in this study and corroborated by previous

studies. This happens when customers are pushed towards using convenient and innovative self-service tools to provide them greater freedom and control over their banking activities. According to Maranguni and Grani (2015), "perceived usefulness" describes the extent to which a person feels that using a certain piece of technology would boost their level of performance on the job.

According to Arnold and Klee (2016), the user's choice is the most crucial component in determining the technology's acceptance. The results of a study on perceived ease of use (also known as perceived convenience, or PC) lend credence to this assertion by showing that users are more likely to adopt and make use of an information system if they believe it can be used effectively and efficiently after only a brief period of training. Supporting the conclusion of Azeroual and Schopfel (2019) that a user's motivation to use the technology (behavioural intention to use) determines their adoption of the system. Perceived utility and perceived ease of use are two components of the Technology Acceptance Model (TAM) that influence a user's decision to adopt a technology.

Using information systems is likely to be maintained if users are content with their experiences (Bhattacherjee, 2001). The findings of the analysis of the perceived satisfaction (PS) questionnaires were found to be relevant and helpful to other research in the field. For instance, Bhattacherjee (2001) said that the most important factor in the assessment of an IS adoption is contentment with past experience. Chen et al. (2010) found that positive emotions boost satisfaction whereas negative emotions, such as those brought on by subpar treatment, decrease it. Last but not least, confirmation is positively correlated with satisfaction with IS usage, according to Bhattacherjee (2001), because it indicates the realisation of the benefits of IS use that were anticipated, whereas disconfirmation (perceived performance lagging

expectation) indicates the failure to achieve the expectation. When comparing the coefficients of Predictor Measures (PCo) against Technology Continuance Intention, the standardised value (0.266) surpasses the unstandardized value (0.217) (Table 13). Oliver (1980) asserts that the distinction between a client's pre-expectation and actual experience is confirmation.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The specific objectives of the study were:

1. Explore student's perception on ICT infrastructure on campus and its usage for facilitation.
2. Determine students' differences in the latent variables based on academic levels.
3. Determine the effects of the latent variables underlying students' intention to continue using technology for learning based on ICT infrastructure on a higher education institution campus.
4. Determine the combination of the latent variables that best explains a significant portion of student's continuance intention to technology for learning as measured by the latent variables.

This chapter presented summary of the findings of the study, conclusion, and presented recommendations that are necessary for ICT infrastructure development at the University of Cape Coast and suggestions for further research.

Summary of the Findings

A total of 326 students were surveyed to provide an accurate representation of student opinion on the state of the campus's ICT infrastructure. Most respondents fell under the 26-30 age range. The sample consisted of undergraduates in their third or fourth year taking 300- or 400-level courses at one of the "big four" colleges of the university. Although level 400 (final year) students accounted for 53.70 percent of all respondents, only 46.30 percent of eligible students filled out the survey. The participants' high judgements of the importance of technology in their conventional education were also indicated by the survey's results.

Students' perceptions of how easy it is to use technology for learning varied significantly between the third and fourth years, as measured by the mean values of the latent variables depending on academic levels. When comparing the outcomes, this was the case. Karahanna and Straub (1999) state that the two concepts of perceived usefulness and perceived ease-of-use have a role in the spread of IT. The degree to which a computer user believes that adopting a certain system would improve their productivity is measured by the technology adoption model. This is supported by the fact that final year students, who had used the ICT much more than third year respondents, got a somewhat higher mean score overall.

Finding the combination of latent elements that, when applied, most properly characterises the salient motivators. These are the motivators that are used to evaluate the students' level of perseverance in wanting to utilise technology for learning.

The participants gave the research mostly positive ratings for its perceived usefulness as well as satisfaction and convenience. The perceived convenience measure had the highest mean, which indicates that participants believed technology made it simpler to study course materials and other digital learning resources. On the basis of this information, it is possible to draw the conclusion that the people who participated in the research had rather lofty long-term aspirations about the use of technology to learn. Those respondents who were in their last year of college reported higher levels of perceived usefulness than those respondents who were younger. Demonstrating that Davis' (1989) theory that a system with a high perceived usefulness also has a system with a strong use-performance relationship in the perspective of the user is correct. According to studies cited by Mumtaz (2000), a primary obstacle to the use of technology in educational settings is a deficiency of financial resources. For instance, if there are no computers or software in the classroom, a teacher may have a very

difficult time implementing technological solutions to classroom problems. Although Aguti and Fraser (2006) provided support for this assertion, the sluggish access to technology that teachers have in most developing countries continues to be a major barrier to the incorporation of technology in education. According to the findings, the total means of each of the latent variables was rather high. The majority of people who took the poll had unfavourable views of the ICT infrastructure, which has the potential to impede the development of courses on occasion.

Conclusion

Technology is a significant tool for supporting students in their academic learning, as shown by the study's results on students' perceptions of the usefulness, usability, and appropriateness of utilising technology. The results of this research reveal that consumers who use descriptive analysis have positive views of the data's perceived value, satisfaction, convenience, and technical continual intents. Perceived utility (PU) was shown to be the most influential factor in whether or not participants adopted and used the new technology. Because of the pervasive nature of technologies, they facilitate information gathering and the dissemination of study results through publications in reputable journals. Using a standardised approach, such TAM by Davis, Bagozzi, and Warshaw (1989) or Samuel (2016)'s version of it, we were able to collect student feedback on the technology's utility (PU), usability (PC), appropriateness of use (PCo), and willingness to be used again.

The majority of students do not feel comfortable integrating ICT-based infrastructure and resources into their education because of varying levels of access to the internet across campuses. The research found that the absence of ICT infrastructure on campus was to blame for the inability to provide high-quality ICT services at reasonable prices.

Recommendations

The necessity for ICT infrastructure as a possible instrument for improving facilitation has been established after evaluating the study conducted and the analysis produced. It is essential that all parties involved—including the government, the ucc administration, and students—exist and work together to fully execute ICT policies in day-to-day operations. My suggestions are as follows:

From the viewpoint of the government:

1. It should be acknowledged that the government's plan to upgrade the ICT infrastructure is complete. This study suggests that after addressing the issues with ICT infrastructure for many years, efforts should be made to complete them.
2. There should be a need to stop the widespread cable theft in order to safeguard the expansion of fibre optic infrastructure to all university campuses. To do this, stakeholders should be involved in streamlining strategies that may have an impact on how quickly and reliably internet service is provided to students in Ghana and the country's ability to participate in the information society.
3. The government should adopt specific steps to Improve ICT Infrastructure and create a thriving telecommunications industry to address some fundamental ICT applications difficulties in order to advance ICT facilitation in schools.

For the administration of the school's viewpoint:

1. As a stopgap solution to upgrade the ICT infrastructure on the UCC campus, this research also suggests purchasing extra computers for the ICT lab.
2. The government should also move to an internet service and network that is more dependable. When selecting network and internet service providers, it is

important to take into account their infrastructure and ability to provide dependable services.

3. There should be a constant effort to address the demand for recurrent ICT infrastructure upgrades on university campuses.
4. To combat the unfavourable view that students have of ICT, the university must ensure that ICT is used and studied in all of its schools and departments, and it must use every effort to place students in ICT-friendly programmes.

From a Student's Perspective:

1. Programmes like ICT clinics and seminars that encourage involvement by students should be used to alleviate the unfavourable attitude that students have about the use of ICT infrastructure on the UCC campus.
2. Students should be given the right environment to improve their ICT pedagogical abilities, which are crucial for the participants' future usage of ICT once they graduate from college.
3. In order to increase their enthusiasm in using ICT and dispel any unfavourable perceptions they may have, students should take part in initiatives promoting ICT culture on university campuses.

Suggestions for Further Research

The way ICT infrastructure is seen and used in the field of ICT education has a substantial influence on both the facilitation processes and has the ability to improve students' academic performance. The current study studied these facts and looked at the aim for two different groups using a self-made questionnaire. Although there is a sufficient infrastructure for using ICT, it has been found that students are not appropriately utilising it to satisfy their academic demands. There is a negative view of pupils using technology to improve their academic achievement.

1. It is proposed that a research may be expanded in the future to include pupils from more varied demographics.
2. In order to analyse students' academic performance in a meaningful way, it is also necessary to provide recommendations for additional research based on the scheduling, accessibility, and availability of internet resources and other ICT materials.

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APPENDICES

APPENDIX A: QUESTIONNAIRE FOR STUDENTS

The researcher is a post-graduate student in University of Cape Coast who is writing his dissertation on the topic; Students perception of ICT infrastructure at the University of Cape Coast. Answer the following questions by ticking or writing the appropriate responses. All responses will be treated confidential.

Thank You.

Section A: Demographic Characteristics

1. Age : 20 years or less [ ] 21 – 25 years [ ] 26 – 30 years 31years and above
2. Sex: Male [ ]

   Female [ ]
3. College Affiliated to:

   College of Distance Education [ ]

   College of Education Studies [ ]

   College of Humanities and Legal Studies [ ]

   College of Agricultural and Natural Sciences [ ]

   College of Health and Allied Sciences [ ]

Section B: Perception of students toward ICT infrastructure

What is your perception of ICT infrastructure in the university? Kindly tick [√] your degree of acceptance or disagreement to the following items.

Items	SD	D	A	SA
4. I think ICT resources are woefully inadequate for students				
5. I think the school is more concentrated on providing ICT resources for lecturers than students				
6. The internet provided to students is very slow				
7. The Kleos wireless device that provided internet to students also stops working for weeks.				
8. Without the use of ICT resources, students can still obtain high grades				
9. Animations and videos can be used to enhance students understanding of concepts				
10. Some special ICT resources help special students to be at part with other students				

Do you believe that these resources are sufficiently available, in your opinion? Please give the following ICT resources a grade for appropriateness.

SN	ITEM	Inadequate	Fairly Adequate	Adequate
11.	Computers/PC in lecture halls			
12.	Internet connections in lecture rooms			
13.	Projectors			
14.	Computer laboratory			
15.	Video conferencing equipment			
16.	Others (specify)			

Section C: Perception of students towards instructors' use of ICT resources

What is your perception about how lecturers make use of ICT resources in the university? Kindly tick [√] your degree of acceptance or disagreement to the following items.

Items	SD	D	A	SA
17. Most lecturers only make use of presentation software in delivering lessons.				
18. Some lecturers still make use of old technologies such as dictating notes and the use of the marker board only in their teaching.				
19. Some lecturers do not have the technological skills required to use ICT resources in teaching				
20. I think lecturers try their best to use modern technological tools to enhance facilitation				
21. Most lecturers only use the ICT resources they are conversant with to teach				
22. I think lecturers need continues professional development in the use of ICT resources				

Section D: Students' attitude towards the use of ICTs for educational purposes

What is your attitude towards the use of ICT resources for educational purposes? Kindly tick [√] your degree of acceptance or disagreement to the following items.

Items	SD	D	A	SA
23. I mostly use ICT resources during my leisure time				
24. I use computers to play games than for research purposes				
25. I use computers to watch movies and play music more than for learning purposes				
26. ICT resources helps me more to do assignments and research on concepts that are difficult for me to understand in the classroom				
27. The use of ICT resources disrupt my studies more				
32. The use of ICT resources helps me to focus when learning				
28. ICT resources are expensive to get; therefore, I only use my smartphone most of the times				
29. I prefer to use books or pamphlets to reading from computers or tablets				

Thank you for participating in this study!!!

APPENDIX B: CONSTRUCT ITEMS ABBREVIATIONS

Construct Items Abbreviations

Item no.	Item	Abbreviations
	Perceived usefulness (PU)	
1	Using technology improve the quality of my learning.	PU01
2	Using technology makes me better understand complex concepts introduced in class.	PU02
3	Using technology improves makes me possess adequate technology skills.	PU03
4	Using technology for learning improves my productivity	PUO4
	Perceived convenience (PC)	
5	Using technology makes it easier to complete my assignments.	PC01
6	Using technology make me accomplish my study quickly.	PCO2
7	Using technology makes my learning possible anytime and place on campus.	PC03
	Satisfaction (S)	
8	Internet facility in the classrooms and campus are adequate.	S01
9	I am satisfied with lecturers use of modern technological tools to enhance facilitation.	S02
10	I can use internet in the classroom and campus uninterrupted.	S03
11	I am satisfied with the overall ICTs infrastructure on campus.	S04
	Confirmation (C)	
12	I have the skills to use technology for improving my learning.	C01
13	Some lecturers do not have the technological skills required to use ICT resources in teaching.	C02
14	Overall most of my expectations for myself in using technology for learning has been confirmed.	C03
15	Overall most of my expectations for lecturers to use technology for instruction has been confirmed.	C04

Table… Cont.

	Technology continuance intention (TCI)	
16	My intentions are to continue using any form of technology than use any alternative means.	TCI01
17	I intend to continue using technology to improve my learning rather than discontinue its use.	TCI02
18	I think lecturers need continues professional development in the use of ICT resources.	TCI03
19	I intend to use technology for learning to enhances my performance.	TCI04
20	My intention to continue use technology for learning is due to the pleasant experience I have using it.	TCI05
21	Adequate ICT resources could promote the continual use of technology for facilitation on campus.	TCI06