UNIVERSITY OF CAPE COAST

ENTREPRENEURIAL ABILITY, TECHNOLOGICAL INNOVATION AND SELF-EMPLOYMENT AMONG STUDENTS OF THE UNIVERSITY OF CAPE COAST

SAMUEL ANIM KWARTENG

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BY

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Thesis submitted to Department of Economic Studies of the School of Economics, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfillment of the requirements for the award of Master of Philosophy degree in Economics

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DECLARATION

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's signature……. Date……

Name: Samuel Anim Kwarteng

Supervisor's Declaration

We hereby declare that preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's signature……. Date: ……

Name: Prof. James Atta Peprah

Co-Supervisor's signature……Date: ……

Name: Dr. Joshua Sebu

ABSTRACT

This study examined the effect of entrepreneurial abilities, technological innovation and self-employment among students of University of Cape Coast. It explored whether the technological innovativeness of the students and certain personal characteristics have any influence on their entrepreneurial intentions and their inclination of being self-employed. There was a stratified sampling selection of 379 undergraduate students of the University of Cape Coast, of various programmes for the study. The design employed for the study was the descriptive survey and questionnaire was used for the data collection. The statistical tools employed for this study were Statistical Package for Services Solution (SPSS) version 26 and Smart PLS version 3. The results of the study indicated that, entrepreneurial abilities have a positive influence on technological innovation and self-employment among the students of the University of Cape Coast. Some characteristics such as entrepreneurial self-efficacy, personal attitude, subjective norms, perceived behaviour control and entrepreneurial intentions were found to have positive influence on their self-employment intentions. Technological Innovation which was used as a mediating variable for the nexus between entrepreneurial abilities and self-employment was also found to have a higher positive influence on the self-employment intentions of the students of the University of Cape Coast. The study recommends that, the leadership of the University of Cape Coast must encourage students and precisely, the undergraduate regular students, by means of sensitizing them in every means they can and also imbedding in them the requisite entrepreneurial knowledge and skills to help them have the self-employment intentions.

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Throughout my life, both professionally and personally, I have been afforded the chance to dream and desire. Not only do my natural talents help me succeed professionally, but so do the amazing people I have met along the way who have enriched my life with their insights, encouragement, and inspiration.

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DEDICATION

This work is dedicated to my lovely mother, Rita Kwarteng

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LIST OF ABBREVIATIONS

AU	Actual Usage
ATT	Attitude Toward Use
BI	Behavioral Intention
EA	Entrepreneurial Ability
PEU	Perceived Ease of Use
PPU	Perceived Usefulness
SE	Self- Employment
SEM	Structural Equation Modelling
SPSS	Statistical Package for Services Solution
TI	Technological Innovation
TAM	Technology Acceptance Model

CHAPTER ONE

INTRODUCTION

The issue of unemployment and particularly graduate unemployment and its socio economic problems continue to generate a lot of concern for government, policy makers, non- governmental organizations (NGOs), parents as well as other actors. Currently in Ghana, the rate of unemployment especially among the fresh graduates of the universities have been on the rise. It is expected by most of the graduates that the government and policy makers will come out with alternative job creation scheme to the growing number of unemployed graduates in the country. One very important scheme that's seems to be winning the government and the private sector is entrepreneurship (Wagner et al., 2021). Boldureanu et al., (2020) asserted that entrepreneurship is the stimulation and generation of employment opportunities and wealth creation. It is on the premise of this that the study examines the effect of entrepreneurial abilities, technological innovation and self-employment among students of the University of Cape Coast.

Background of the Study

Rădulescu et al., (2020) constructed an entrepreneurial competence framework that comprises opportunity identification, entrepreneurial skills that represent "resources," action areas, and some competency lists, taking into account the fact that entrepreneurship ability is diverse. Entrepreneurial talents, according to Gianesini et al. (2018), are a combination of personality characteristics, entrepreneurial knowledge, and skills. Knowledge and experience related to entrepreneurship are becoming more important in studies on entrepreneurial abilities.

One of the most important factors in a country's ability to thrive and advance socially and economically is the presence of a vibrant entrepreneurial culture. It entails new ideas, the creation of new jobs, and the promotion of social mobility. Entrepreneurship education may help individuals get the information and skills they need to create, organize, and manage their own businesses (Wei, Liu & Sha, 2019). Today, a culture of entrepreneurship is required to guarantee the success of small businesses. There is a need for increased emphasis on entrepreneurship education and approaches that foster learning by doing and just-in-time learning in order to cultivate entrepreneurial and enterprising behavior among young people, particularly students at the university level, to develop.

Increasing numbers of youth unemployment are as a result of the 2008 financial and economic crisis. Most developing nations with big youth populations lack sufficient employment opportunities to hire all new workers and provide them with a reasonable salary (Ackah-Baidoo, 2016). It is critical for self-employment and inclusive growth that young people's entrepreneurial abilities be harnessed. Growth in economic output in Ghana during the previous two decades has averaged 5.1%; nevertheless, there has been no equivalent increase in employment growth (Aryeetey & Baah-Boateng, 2007). The authors discovered that 23% of those aged 15 to 24 and 28% of those aged 25 to 35 wait two years or more before finding a job, respectively. Unemployment is a common result of this circumstance, and it affects young people with higher education the most. In Ghana, the youth unemployment rate rose from 5.5% in

1991 to 16.3% in 2000 before dropping somewhat to 14.2% in 2015 (World Bank, 2020). As of this writing, the percentage has risen from 8.7% in 2017 to

9.6% in 2021, depicting a high increase in youth unemployment rate, which is an alarming matter.

The National Youth Employment Program (NYEP) was formed by the government in 2006 in response to the high rate of youth unemployment in the country. There are a number of government programs in place to tackle young unemployment, including the NYEP (Local Enterprise and Skills Development Program, Youth in Agriculture Program) (Dadzie, Fumey, & Namara, 2020). In 2011, the Unemployed Graduate Association of Ghana was formed in response to the rising tide of graduates seeking jobs. In the midst of a rapidly changing world and pandemics like COVID-19, graduates' ability to find work is hindered by their knowledge of technology (Dhawan, 2020). As a result, graduates' entrepreneurial skills and desire to work for themselves are thought to be enhanced by the use of technology know-how (Tufa, 2021).

Economic growth and social change have been linked to a lack of entrepreneurial dynamism in modern, Western countries, and the current crisis has been blamed to this lack of entrepreneurial dynamism (Cooke, 2019). Policy goals and initiatives aimed at boosting awareness of the issue, as well as the capacity of societies for entrepreneurial activities, have been gaining in importance in recent years. Traditionally, university graduates' interest in entrepreneurship has been modest (Pardo-Garcia & Barac, 2020). Researchers and policymakers are grappling with the question of how to

encourage young people to start businesses that utilize their learned skills and academic research findings, spinoffs. As a result of these technological advancements, new entrepreneurial endeavors appear to be reshaping industries and marketplaces in recent years. A large portion of this success may be ascribed to the ICT sector, which provides opportunities for small, innovative enterprises to expand and prosper. This is based on the findings of (Micle et al., 2021).

Entrepreneurship education programs are also available to college students and recent graduates. As a result of these programs, more start-ups are surviving and prospering in the information economy (O'Brien, Cooney, & Blenker, 2019). Various higher education institutions may effectively create and deploy training programs as long as they are suited to local requirements (such as the business environment, academic tradition, and students' attitudes and knowledge). Avoids the mechanical transfer of behaviours that originated in particular socioeconomic circumstances. This is against this background that the study sought to examine the effect of entrepreneurial ability, technological innovative and self-employment among the students of the University of Cape

Coast.

Statement of the Problem

Because of the rising rate of unemployment in the nation, the problem of young unemployment has been a major concern in recent years. According to Alagidede et al. (2013), only 10% of the students in the universities in Ghana graduates find work after their first year, according to data from the Institute of Statistics, Social and Economic Research (ISSER). Several

factors, including a lack of employable skills, insufficient capital for entrepreneurship, a lack of positive attitudes among graduates toward job opportunities, and the industry's inability to absorb the large numbers, indicate that it could take up to ten years for a large number of graduates to find work. For the limited job options in Ghana, these graduates must compete with others already looking for work, and many end up joining the Ghanaian Unemployed Graduate Association (Oppong & Sachs, 2015). Because of this, self-employment via entrepreneurialism and technology innovation is one of the most effective ways to tackle the problem of unemployment in the country (Thurik, et al., 2008). It was noted by Gibb (2003) that there is a paucity of work attempting to demonstrate a link between entrepreneurial skill, technical innovation, and self-employment, especially in Ghana. Youths, particularly those who have been exposed to entrepreneurial culture, are more likely to take up self-employment as a profession and feel it is superior than wage employment.

According to different reviews of the literature, the bulk of entrepreneurship study has mostly focused on adult entrepreneurs. These studies looked at adult entrepreneurs who had already made the decision to pursue a career as an entrepreneur. To better understand what influences young people's future goals to start their own company, it's critical to look at individuals under the age of 25 and discover what variables impact their future aspirations (Levie & Hart, 2011). According to Karim and Reddy (2014), the future working environment will rely on the originality of the young. Similarly, many research on entrepreneurial potential and self-employment among college graduates have neglected to take into account

technical innovation and know-how (Saeed et al., 2018). According to Peprah et al. (2015), the researchers did not account for technical innovation, which is crucial for entrepreneurial potential and self-employment.

The implication here is that, despite the fact that the reason for the research in self- employment is been researched into, research concerning the factors that drive entrepreneurial ability with respect to the level of technological innovativeness that influence the self-employability among university students, has been an area that little attention had been given. It is on this basis that this study is conducted.

Purpose of the Study

The main purpose of the study is to investigate into the entrepreneurial ability, technological innovation and self-employment among students of the University of Cape Coast.

Research Objectives

The general objective of the study is to examine the entrepreneurial ability, technological innovation and self-employment among students of the University of Cape Coast. Specifically, the study seeks to:

1. Determine the effect of entrepreneurial abilities on self-employment among the students of the University of Cape Coast,
2. Establish the effect of technological innovation on self-employment among the students of University of Cape Coast,
3. Assess the mediating effect of technological innovation on the relationship between entrepreneurial abilities and self-employment nexus.

Research Questions

The study will provide answers to the following research questions:

1. What effect does entrepreneurial abilities have on self-employment among the students of University of Cape Coast?
2. What effect does technological innovation have on self-employment among the students of University of Cape Coast?

Research Hypothesis

Based on the third objective, the following hypotheses were set;

H_0: Technological innovation does not mediate the effect of entrepreneurial ability on self-employment or intention to be self-employed.

H_A: Technological innovation mediates the effect of entrepreneurial ability on self-employment or intention to be self-employed.

Significance of the Study

The study will contribute to policy, practice and research in the following ways:

From policy point of view, the findings from the study will inform policies on the content of entrepreneurial education in most Ghanaian Tertiary Institutions. Currently, entrepreneurship is taught as a core subject in most Universities in Ghana but no study has been able to prove its impact. Practically, the recommendations and conclusions that will be drawn from the study will feed into the University of Cape Coast agenda of making the University an entrepreneurial hub to develop entrepreneurial and employable skills among students. The study will also be relevant for the implementation of entrepreneurship programme at the Centre for Entrepreneurship and Small

Enterprise Development (CESED) at the University of Cape Coast Business School.

In terms of research, this study is expected to provide an opportunity for capacity building for students in data collection and data management. The annual practicum of undergraduate final year students is going to be incorporated into this study. This will equip the students with the practical experience in research. In addition, selected graduate and final year undergraduate students will be trained and be made to take active part in the fieldwork. This will be done in collaboration with the Centre for Data Archiving, Management, Analysis and Advocacy (C-DAMA).

Scope of the Study

The research study is limited to examining the entrepreneurial ability or intentions, technological innovation and self-employment among students of the University of Cape Coast. The population for the study is drawn from 379 students in the University of Cape Coast. The research objectives for this study are, to examine the drivers of entrepreneurial ability among students, assess the level of technological innovation among students, determine the factors that influence self-employment or intention among students and investigate the interaction effect between technological innovation and entrepreneurial ability on self-employment or intention to be self-employed.

The scope of the study is students of the University of Cape Coast. Emphasis and conclusions were as a result of the study of students who had entrepreneurial abilities or intentions through technological innovativeness to be self-employment as well as with those who had such no entrepreneurial

intentions of the University of Cape Coast. Quantitative analysis was employed to justify our findings and upon which this study will be based.

Delimitations of the Study

The study covered the entrepreneurial intentions among the students of University of Cape Coast and it specifically focuses on the students in the various colleges in the university. The main respondents for the study were students in the colleges in the university.

Limitations of the Study

This study focused on entrepreneurial ability, technological innovation and self-employment ideas given in the literature to the university community. There were several obstacles in the way of this study's data collection and analysis. Some respondents' failure to complete the survey suggests that apathy was the primary issue. It's possible that the respondents hid their true feelings towards that because they deemed them to be too sensitive. This suggests that there was some degree of prejudice in their replies. The quantitative methodology may not have encouraged open and honest discussion among participants. Participants were asked to choose the best possible response to each question from a list of predetermined choices. Thus, although this approach yielded responses to the study's concerns that were somewhat more objective, respondents were limited to selecting one of many predetermined choices. In this instance, they were unable to express their opinions in further detail.

Moreover, although the research did look at the entrepreneurial ability, technological innovation and self-employment among the students of the University of Cape Coast, it did so with a rather small sample size,

consisting only of undergraduate students instead of the entire students in the university and even from other universities throughout the country. Therefore, the study's generalizable conclusion that the opinions of these students represent the views of all others in the country might be incorrect.

Organization of the Study

The study is organized into five main chapters with each chapter further divided into sections and sub-sections. The first chapter is the introductory chapter. Chapter two reviews both the theoretical and empirical literature on entrepreneurial intentions, technological innovation and self-employment. Chapter three focuses on the specification of the empirical model and estimation technique employed in conducting the study. The results of the data collected for the study will be analysed and discussed in the fourth chapter. The final chapter presents the summary, conclusions, and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter serves as the foundation for the development of this study. The purpose of this chapter is to review the relevant literature on entrepreneurial abilities, technological innovation and self-employment intentions. The first section explores the theoretical models underpinning the study. The second section examines concepts of entrepreneurial ability, technological innovation and self-employment. The chapter concludes with some related empirical literature reviews and a conceptual framework.

Theoretical Background of the Study

Theoretical models are body of knowledge that seeks to observe, understand and explain concepts and in the context of this study there are three main theories underpinning this study, of which there will be other supporting theories to help elucidate the concepts in the study. These three main theories are; Self-Efficacy Theory of Entrepreneurship, The Theory of Planned Behaviour of Entrepreneurship and Technology Assistance Model theory which will be used to explain the concepts of entrepreneurial ability, technological innovation and self-employment.

Self-Efficacy Theory of Entrepreneurship

An individual's conviction in their ability to complete a task is called self-efficacy by Erdem (2007). Self-efficacy is regarded to be a prerequisite for the formation of intentions. If a person believes they have the ability to achieve a goal, they are more inclined to act on it. On the other side, those

who don't believe they have the ability to achieve a goal aren't going to make any efforts to do so.

Through their experiences in life, people develop a sense of self-efficacy because they learn new skills in a variety of areas. Self-efficacy is boosted by past successes (such as mastery of a task), which leads to more ambitious objectives (i.e., higher aspirations). Vicarious or social learning, self-reflection, and social persuasion are further methods for gaining self-efficacy (positive feedback). A person may believe they are capable of taking on more challenging job because they have seen that they do well when compared to other people in the same situation and are told by others that they are doing so well. Entrepreneurs, according to self-efficacy theory, will only embark on a business venture if they are confident in their abilities to overcome the challenges posed by a particular opportunity. A person who wants to start a business but isn't up to the task may look into other options, such as working for someone else.

A study by Joe-Akunne, Oguegbe, and Aguanunu (2014) found that persons who believe their parents are high-performers are more likely to start their own businesses than those who believe their parents are low-performers or have no role models in their lives. When it comes to starting a business, the offspring of entrepreneurs assume that they are more qualified than their parents.

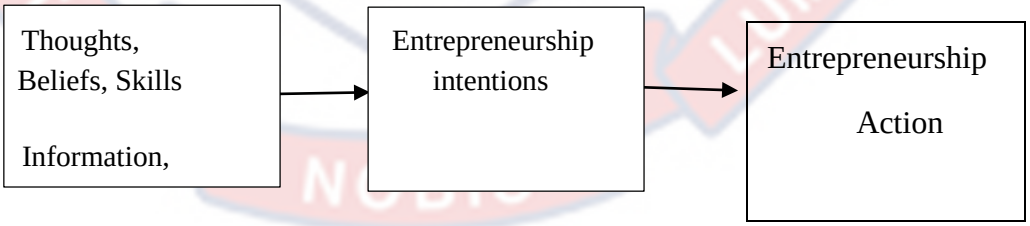
The Theory of Planned Behavior of Entrepreneurship

The idea of planned conduct was developed by social psychologists Al-Lozi and Papazafeiropoulou (2012) to predict social activities in a variety of fields, including consumer behavior, politics, and healthcare. Individuals'

intents to participate in the activity, rather than their thoughts about the activity, are the most important determinants of their behavior, according to this theory. A prospective voter who plans to vote has a better chance of casting a ballot than someone who just believes that voting is a good thing.

Motivation and conscious decision or plan to invest effort in order to achieve an objective are referred to as "intentions." Intention and action have a better chance of aligning when they are separated by a small length of time and include sufficient information to allow for the latter to be carried out. Continuing our example, if a person intends to vote in a coming election at a certain place, for a specific party, and at a specific level of government, they are more likely to do so.

When applied to entrepreneurship, the idea implies that starting a business is a deliberate decision, and that intentions, rather than personality, demographic features, attitudes, or beliefs, are superior predictors. According to the idea, research should always utilize external elements to predict an individual's intention to become an entrepreneur, rather than proposing models that directly relate exogenous factors to entrepreneurial behaviors.



There is a flurry of research in academia right now looking at how to anticipate entrepreneurial intentions based on several antecedents, such as self-efficacy and human capital. As a result of the fact that entrepreneurial

aspirations do not always materialize into action, the theory remains highly questionable. There are times when entrepreneurial action isn't required, and adopting entrepreneurial ideas may not be productive if other elements are not already in place.

Technology Acceptance Model (TAM)

TAM, established by Davis in 1989, is a theory of information systems that explains and models how a person accepts and utilizes technological innovation. A user's behavior may be explained in terms of their acceptance of a wide range of new end-user computer technologies, and TAM clarifies this acceptance while also validating theoretical and economic positions (Davis, 1989). Perceived ease of use (PEU), perceived usefulness (PPU), attitude toward use (ATT), behavioral intention (BI) and actual usage are all aspects of TAM (AU). It is believed that the adoption of new technology and the ease with which it may be applied are largely determined by these two constructions. Davis defines PEU as the degree to which a person feels that a specific technology will need less effort on their side. PU is a measure of how much an individual believes that implementing a certain piece of technology will enhance his or her ability to do their job.

Having an ATT indicates that a person's attitude toward a given technique of carrying out the targeted action is either positive or negative. Users of a specific technology have formed an intention to use or not use that technology in the future at the level of BI (Lee, Kozar & Larsen, 2003). AU is a measure of how often and how much a certain technology is being used by its consumers. PU is said to be affected by PEU, according to TAM. Users are more likely to consider a piece of technology beneficial if they believe it

is simple to use. In TAM's view, both PEU and PU have a significant impact on people's attitudes about technology. Users might acquire a favorable attitude towards the usage of a given technology if they regard it as simple to use and beneficial. According to Davis' findings, when people believe that a technology is beneficial, this may lead to a rise in the favorable BI of users toward its usage. In the end, the true usage of a technology is defined by the positive BI of its users toward that technology, which is known as AU. Users are more likely to employ new technology if they have a good attitude about it.

Many earlier research disregarded the concept of attitude toward using a technology (Ma & Liu, 2004). The key reason for exclusion is the strong link between PU and BI and the poor association between BI and ATT. The genuine usage of the system (AU) was directly driven by PEU and PU, but not ATT, which is why BI was not included in the study. The results of Davies, Bagozzi, and Warshaw explained this. As a result, PU, PEU, and BI were shown to have a strong correlation in this research. PEU and PU were shown to have a direct impact on BI, and the authors concluded that the ATT construct should be eliminated. Enhanced TAM TAM2 was created by Venkatesh and Davis in 2000. TAM2 retains the original TAM's PEU and PU determinants. It also takes into consideration the impact of societal norms and images on subjective norms and images, as well as the cognitive instrumental process, which includes output quality, work relevance, and outcome demonstrability.

Researchers have utilized TAM2 and TAM to describe how different technologies are accepted in diverse circumstances inside organizations. For

the sake of forming judgments regarding performance contingencies like PU, humans, according to TAM2, rely on mental representations to evaluate how well relevant work goals are linked to the impacts of using a certain system. Job relevance judgments often go through a compatibility test, according to ideas on the matching mental process (Sana'a, 2016). Employment relevance is characterized primarily by the degree to which the system aim is relevant to one's job. TAM2 asserts that PU benefits from work relevance.

PU is also affected by output quality. In the opinion Sana'a (2016), quality output judgment adopts a standard profitability test form in which a given set of judgments incorporates multiple systems that are useful to a person when picking a system that delivers the best quality output. TAM2 claims that PU benefits from high output quality. Because of this, the third PU determinant is called result demonstrability. The tangibility of a specific innovation's results is characterized as result demonstrability (Silva, 2015).

Conceptual Review

Entrepreneurship

In the economy, entrepreneurs perform a dual function, particularly in the labour market. To begin with, entrepreneurship, as opposed to workers, can be considered a type of economic activity. According to occupational choice theory, anyone can choose to be an entrepreneur or a paid worker as a type of economic activity. Workers are compensated in a risk-free environment, while entrepreneurs reap the benefits without taking any risks. In this sense, deciding to become an entrepreneur implies quitting your job. An increase in the entrepreneurial rate tends to be associated with a drop in the employment rate, according to empirical evidence. Furthermore,

according to the theory of a recessional push toward entrepreneurship, a bad labor market situation might cause a negative inclination to start a business. An increase in the unemployment rate induces an increase in the entrepreneurial rate in this scenario.

Entrepreneurs, on the other hand, are the ones who make the decisions about how resources like labor, money, and inputs are used. Entrepreneurial expansion necessitates an increase in the number of personnel needed to keep up with demand. In this situation, a higher degree of entrepreneurial activity leads to more paid employment and decreased unemployment.

In economics, the four components of production are recognized as land, labor capital, and entrepreneurship. Entrepreneurship is crucial because it combines all human and material resources, provides the necessary funds, accepts risk, and launches the transformation of ideas into consumable goods. The dynamic process of accumulating money over time is referred to as entrepreneurship. Individuals (entrepreneurs) create wealth by taking significant financial, time, and/or professional risks in order to provide value for a product or service. Risk is an important term in entrepreneurship. If a business venture's risk is minimized, it is not considered entrepreneurship.

Entrepreneurship is defined as the act of producing something meaningful by committing the time and effort necessary, accepting the financial, psychological, and social risks and uncertainties that come with it, and reaping the financial and personal entrepreneurial abilities as a consequence. "Entrepreneurship is the management and deployment of resources to construct a novel economic organization (or network of

organizations) for the goal of profit or expansion in the face of risk and uncertainty" (Lackéus et al., 2020).

An entrepreneur's activities in order to grow his or her firm are referred to as entrepreneurship. It's a unique and inventive approach to dealing with the environment. In other words, it is the capacity to recognize, develop, or invent possibilities and use them for the benefit of society, which benefits the innovator and his company.

The term entrepreneur comes from the French verb 'entreprendre,' which meaning 'to undertake.' (Prathap, 2021). The phrase was first used in France in the 16th century to describe Frenchmen who organized and commanded military expeditions. It implies to establish a business, recognize a business opportunity, arrange resources, manage, and bear the risk of a business or enterprise in a business or enterprise environment. In the early 18th century, an Irishman living in France coined the term "business" to describe commercial activity. 'An entrepreneur,' he says, "is a person who acquires factor services at fixed costs with the intention of selling its output at variable prices." An entrepreneur is a risk-taker who takes on uninsurable risks.

Another Frenchman, for example, elaborated on Cantillon's views and defined an entrepreneur as the chief organizer of a company's distribution and production operations. An entrepreneur, according to Say, is an economic agent who unties all means of production, including labor force, capital, and land, and finds his results from their employment in the value of the products, the reconstitution of the entire capital that he employs, and the value of the wages, interest, and rent that he pays, as well as profit that

belongs to himself, in the value of the products. The roles of coordination, organization, and monitoring were highlighted by him. An entrepreneur is a businessperson who plans and invests in new companies. He moves economic resources from a low-yielding, low-productivity area to a higher-yielding, higher-productivity area.

An entrepreneur is someone who sees business chances and seizes them as soon as possible. As a result, in order to engage in entrepreneurial activity, he or she must possess particular characteristics and skills. The following are some of the qualities connected with entrepreneurs:

Initiative- takes action before being asked or compelled to by circumstances. This is the capacity to come up with fresh ideas and put them into action ahead of the competition in order to gain a competitive advantage. An entrepreneur must be able to come up with new ideas on a regular basis in order to keep ahead of the competition.

Action-oriented people can visualize the process from concept to implementation. An entrepreneur must be able to come up with new ideas on a regular basis in order to keep ahead of the competition. The trainees will be driven to act in order to acquire these attributes and prepare for future entrepreneurial jobs when they have been selected.

Independent: Entrepreneurs place a high importance on autonomy and like to do things their own way. The attributes of independence and determination are the driving forces behind an entrepreneur's decision to establish their own firm.

In some ways, having their own business satisfies their desire for independence.

Positive: An entrepreneur is a person who is enthusiastic and optimistic about unclear opportunities. The entrepreneur takes on activities with the expectation of success rather than the fear of failure.

Value creation: Creativity is the capacity to produce new ideas while innovation is the ability to put those ideas into practice. Some people have a knack for coming up with brilliant ideas, but they never put them to good use.

Others don't come up with ideas, but they make things happen with zeal. Entrepreneurs are creative thinkers who are always looking for new ways to enhance things.

Self-confident: To be self-confident, one must be certain of oneself. An entrepreneur believes in his or her capacity to meet realistic and difficult goals. Self-assurance combined with a sense of efficacy will eventually contribute to the venture's success.

Hardworking- They are hardworking workaholics who realize that there is no replacement for hard work when it comes to achieving achievement. Businesses that succeed are willing to put in a little additional work and time. They labor not just for the money, but also for the joy of building the company.

Enthusiastic: Successful entrepreneurs need to be enthusiastic in order to sustain the degree of innovative thinking and concentrated activity required to run a successful business.

Technological Innovation and Entrepreneurship

The Information Age is approaching quickly. Information and transaction can be packaged using data. To make room for the abstract and digital, the physical is dissolving. The internet, and information in general, have come to define and determine the modern world. The business risk for a company that is dependent on technology is often higher than for a nontechnologically dependent organization. Information technology, according to Hoyer et al., (2020), is a collection of technologies that merges communication and computers.

Chege, Wang and Suntu (2020) defines information technology as "a collection of devices that can execute sequences of instructions." The instruction sequence is intended to be exceedingly flexible and non-rigid, and it can be charged according to the data being processed. "Information technologies" used to refer to a wide range of new technologies and their applications, according to Okinda et al., (2020). encompassing all fields of computer, microelectronic device, satellite, and communication technology usage. As previously stated, communications technology is a subset of information technology. There is a vast spectrum of study on the influence of information technology in the literature. According to Gabriel (2022) computers and other technology have infiltrated every element of business, industry, finance, education, and government.

Information technology (IT), according to Du et al., (2020) is important to a company's performance in uncertain and volatile economic times. In numerous places of the globe, the role of information technology in entrepreneurship has been investigated. There have been various reasons

associated to entrepreneurship. Entrepreneurial people, for example, have a mix of personality traits such as inventiveness, risk-taking, and proactiveness (doing whatever it takes to make their ideas a reality), as well as accepting blame for their successes or failures (Aggarwal & Chauhan, 2022).

IT systems influence a business's products and services, as well as markets, product cost, and differentiation. As a result, the adoption and creative application of information technology is critical to the success of innovative organizations (Chege, Wang, & Suntu, 2020). Finally, entrepreneurship is defined as the act of creating value by combining the aforementioned factors in order to capitalize on a business opportunity (Saha et al., 2020). Peerally, De Fuentes and Figueiredo (2019) proposed information technology as a lever for sustainable development when combined with social entrepreneurship. Jonson and Wrycza established a strong link between the usage of technology and entrepreneurship in the Polish economy.

e-ENTREPRENEURSHIP

Without a question, the Internet is the greatest scientific and technical revolution in our generation's history. It has aided society in a variety of ways, including cultural, economic, and political. The benefits that Internet technology promises to be exploited for the improvement of society are in the public interest. One of the most fundamental advantages of the Internet is its capacity to link people via a communication network regardless of their physical location. The capacity to bring individuals together for a common objective without physically bringing them into an office is a benefit that arises from this.

Virtual offices have become a reality as a result.

Unemployment is one of the major challenges faced by youth in African countries and globally. For the past few years, economic development and job creation has been the main concern for youth in Africa, particularly in Ghana and this paints a bleak picture for social development and the future of youth. As noted by Adeoti (2019), the future economic growth and social progress in knowledge societies rely increasingly on young technopreneurs. Technopreneurs have a very specific function in the economy as they create employment, productivity growth and produce and commercialize high-quality innovations (Masenya, 2021). Digitalization may also be considered as one of the coupling mechanisms between different dimensions of the socioeconomic system (technological, social, economic, and ecological) (Satalkina & Steiner, 2020). However, it represents a source of new challenges to the resilience of socioeconomic systems; on the one hand, it comes with opportunities and also brings new risks and unforeseen consequences (Satalkina, & Steiner, 2020).

Studies by Hastuti (2022) identified technopreneurship as the most imperative factor to be considered for enhancing competitiveness, economic development, social stability and job creation. A shift towards fostering technopreneurial spirit among youths could therefore be one of the most effective means to mitigate both unemployment and social challenges in disadvantaged communities. Chinenye and Onuoha (2022) defined technopreneurship as a process through which entrepreneurs are putting together organizational resources, technological systems and necessary strategies used by entrepreneurial firms to follow opportunities.

Technopreneurship may provide youth in the digital world a flexible space within which to not only display their creativity but also to make an income.

Technopreneurs refer to the technological entrepreneurs or technologybased entrepreneurs who combine the factors of production and their entrepreneurial skills with technology to set up new business (Adeoti, 2019). Koe et al., (2021) refer to technopreneurs as those who are ready to incorporate the innovation and creativity in their business process with the help of technical background. Technopreneurs use technological innovations and translate such technology into successful products or services (Thanh, Mohiuddin, & Quang, 2022).

Technopreneurship and small medium businesses development are therefore seen as conduits for sustained economic growth and to promote self-employment in developing countries. For some young people around the world, self-employment provides income, self-reliance and a dynamic path for growth and the development of human capital (Anosike, 2019). The self-employed are very heterogeneous group of people working on their own account, from entrepreneurs and small business proprietors to freelancers and subcontractors. The generic competences required for success in self-employment, as outlined by IES in 2020 include:

- Values, beliefs and attitudes (e.g. action orientation, desire for independence, initiative, creativity etc.);
- Soft skills (interpersonal, communication and networking skills);
- Realistic awareness of the risks and benefits of self-employment;

- Functional business skills (financial, HR management, market research); and
- Relevant business knowledge (legislative, taxation, sources of finance etc.).

According to Lima et al., (2021), automation "can deliver significant value that is unrelated to labor substitution", allowing businesses to "find new ways to understand customer preferences, improve operations through predictive-maintenance tools, optimize documentation work, and respond quickly to weather changes that affect products." As a result, automation may entail overhauling whole workflows rather than just automating individual tasks. They also advise business leaders to keep an eye on what their competitors are doing to in order to avoid having their business models rendered obsolete by disruptive technologies. The usage of AI and robotics is essential for organizations to stay competitive, according to Masenya, (2021). Because robots, unlike humans, may idle at no cost when demand slows, automation enables supply to meet demand. Humans, on the other hand, are paid to keep generating with the surplus stored in warehouses, which costs money to maintain.

Another advantage of using robots is that they may work 24 hours a day, seven days a week, and do not need companies to pay taxes on the wages they provide. In order to use, operate and repair the programs and robots, only a few individuals will be needed, yet these people may not have the necessary expertise. The integration of AI and robotics, however, requires rigorous process analyses to establish where robots, for example, might improve overall efficiency rather than just task efficiency. According to

experts, several roles will be tasked with responsibilities. There will be a need for rethinking human roles and a requirement for retraining. Injuries at work and on the road will be reduced, and medical operations will be safer and less intrusive. A variety of new capacities will also be made possible, such as the capacity for sick or homebound children to attend school and the ability for the deaf and mute to communicate again. The whole globe benefits from this arrangement (Nadikattu, 2021).

Because of this, firms will have to change their processes and analyze their work operations in order to pick which technologies to integrate and how to do so. Consequently, AI algorithms and robots might have a lower financial worth if demand doesn't fulfill expectations established when they were purchased, thus they will need to maintain employing technology in order to monitor demand for their goods. As a consequence, employees will need retraining in areas such as robot operation and maintenance and strategic decision-making using big data analytics. Businesses will also have to keep an eye out for new goods generated by the sharing or peer-to-peer (P2P) economy, which is developing as more people lose their employment.

Self-Employment

Parker (2004) considers the self-employed as individuals who earn no wage or salary but derive their income by exercising their profession or business on their own account and at risk. The European System of Accounts (ESA) defines employment as “covering both employees and self-employed persons, who are engaged in some productive activity that falls within the production boundary of the system”. More specifically, self-employed persons are defined as persons who own sole or joint businesses of the

unincorporated enterprises in which they work, with the exception of those unincorporated enterprises classified as quasi-corporations. The self-employed categories include unpaid family workers, outworkers and workers engaged in production undertaken entirely for their own final consumption or own capital formation, either individually or collectively. The Organization for Economic Co-Operation and Development (OECD) categorizes the employed into paid employment, unpaid employment and self-employment.

The individual categorized as self-employed is defined as someone who does some work for profit or family gains, in cash or in kind. A self-employed individual can be an employer, own account worker or a person in production of goods/services and household consumption. The International Labour Organization (ILO) classifies employment as employees, unpaid family helpers, employer and own account workers. An employer is an individual who operates his/her own economic enterprise independently in a profession with one or more employees. An own account worker is a person who operates his/her own economic enterprise independently in a profession with no employees. Employers and own account worker groups give the total number of self-employed. Partners of an unincorporated business are usually considered as self-employed too.

It is sometimes helpful to partition the self-employed into employers and own account workers (the latter of which work alone), or into owners of incorporated or unincorporated businesses. Incorporated businesses entail some disadvantages, including the fact that they are expensive to maintain, the need to keep proper accounting records, the maintenance of shareholder

minutes and resolutions. Despite these disadvantages, there are several advantages to incorporated business like limited liability, which means the protection from claims against personal assets as a result of actions taken by a company, credit proofing, ability to have other family members own company, possibly lower tax rate, ability to delay income taxes. By contrast, the main advantages of an unincorporated business are that they are easy to operate, have less costs, and that revenue and expenses are reported in personal tax return.

Some of the disadvantages are the unlimited liability, the fact that a family member cannot own part of the business unless a partnership or joint venture is created, and the inability to delay taxes. Self-employed is any individual who performs an independent activity, with or without partners, earning an income that is directly dependent on the profit (realized or potential) from the goods or services produced. Partners may or not be household members. Additionally, a self-employed person may be classified as either having or not having employees. In the latter case, the self-employed person is referred to as an isolated self-employed individual.

Determinants of self-employment

Psychological Characteristics and Sociological Perspectives

Choosing to establish a business is influenced by a person's psychological profile and social context, according to entrepreneurial behavioral patterns. It is important to note that when it comes to a business' success or failure, entrepreneurial traits include the ability to overcome crises and risk-taking, a desire for independence as well as work satisfaction (Gubik, 2021).

Optimism and risk-taking, as well as social capital support, will be the focus of our analysis of the data. Based on the results of a recent survey, self-employed persons are more optimistic than salaried workers (Amankwah-Amoah, 2022). Entrepreneurial decision-making is likely to be influenced by a person's attitudes, emotions, and cognitive biases (Díez-Martín, Blanco-González & Miotto, 2022). Self-employed persons are more ready to take risks than the general population since their future prospects and lifetime incomes are more uncertain. The difficulty has always been in judging how optimistic one should be. The authors employed a variety of proxies, including life expectancy measurements, income expectations for the coming year, and so on.

Labor Market Experience

Attitudes, emotional predispositions, and cognitive biases are all likely to influence entrepreneurial decisions, according to the research (Hernández-Sánchez, Cardella & Sánchez-García, 2020). Furthermore, because their future prospects and lifetime earnings profiles are more unknown, research reveals that self-employed persons are more prepared to take risks than the overall population. The issue has always been figuring out how to assess optimism. Because the legal environment in transitional economies may not encourage formal entrepreneurship, entrepreneurs may opt to engage in the informal or shadow economy. Labor unions and minimum pay laws tend to maintain formal sector remuneration above market-clearing levels in metropolitan areas while the lowproductivity informal sector serves as a subsistence shelter for mismatched personnel (Fields, 2019).

For all of its benefits, the informal sector may also hinder economic progress by failing to pay its fair share of taxes and unjustly competing with established businesses. Furthermore, the informal sector's employees have low pay and job security, and a high level of informality in an economy is a sign of corruption, as well as a weak regulatory, financial, and labor market environment. However, if the economic situation improves, the informal sector might serve as a breeding ground for formal sector entrepreneurship, according to Igwe et al., (2020) characterization of entrepreneurs as "jacks of all trades."

Human Capital

Previous empirical research on the significance of human capital has mostly relied on variables denoting formal education and acquired experience (Capelleras et al., 2019). Because of many impacts operating against each other, previous published research cannot agree on the function of formal education, which seems to be both good and detrimental in empirical investigations. Formal education, in particular, enhances abilities that are important not just in business but also in pay work (Vixathep & Phonvisay, 2019). Self-employment, on the other hand, is clearly associated with more years of experience (self-employment, management, and industry-specific) as well as a greater diversity of acquired expertise, this is a metric for calculating the amount of human capital that has accrued over time.

Health Condition

The subject of health status, particularly the influence of poor health, disease, or disability, is similarly inconclusive (Svechkina, Portnov & Trop, 2020). Some researchers believe that excellent health has a favourable

influence on self-employment and that self-employment is associated with greater levels of stress and working hours, necessitating good health. Others argue that persons with bad health may find flexibility in working hours/volume of labour in self-employment, as well as an opportunity to avoid potential employer prejudice.

Entrepreneurship and Self-Employment

Because new small enterprises and the rate of company turnover are regarded basic, observable markers of industrial dynamics, much of the profession's focus has shifted to new firm study. New enterprises are the driving force of innovation and the development of skilled employment, according to the entrepreneurial economy scenario. This assertion is supported by a lot of studies. According to Belitski et al., (2022), the European Commission's study Enterprises in Europe in 2001 indicates that between 1987 and 1997, the European areas with the highest growth rates also had the largest share of small businesses. Those locations with a large concentration of small businesses but a specialty in manufacturing industries is the exception; these regions have modest growth rates.

Because conventional manufacturing is not a high-growth industry, the poor performance of areas that specialize in this category of industries might be explained by this. Because the majority of new small businesses in most countries fall into the category of self-employment (individuals who start and run their own business), because entrepreneurship is seen as a psychological attribute, using self-employment rates as a proxy for entrepreneurship makes sense. At the same hand, it has been pointed out that the self-employed encompass a wide range of commercial and professional

activities that do not fit the definition of an innovative entrepreneur. Between idea and measurements, there is some uncertainty. On the other hand, the emergence of extremely tiny businesses has long been linked in many models to the inability to secure paid dependent work and the unwelcome "push" of growing unemployment (Akpan, Udoh & Adebisi, 2022).

Many self-employed persons are widely recognized as not being motivated by market innovation and hence should not be classified as entrepreneurs in the Schumpeterian sense. Most new firms start out with one or two employees, if not none at all; they come under the category of self-employment, and it is difficult to tell the difference between entrepreneurs and regular enterprises. According to the Eclectic Theory of Entrepreneurship, the supply side of the labor market (push factors) and the demand side (pull factors) can be used to describe the quantity of entrepreneurship (Pull forces) (Thukral, 2021).

The level of entrepreneurship in a particular era and economy is influenced by a combination of variables from the micro (individual), meso (industry and market), and macroeconomic domains. The contrast between the entrepreneur as an inventor and other business actors is widely accepted. The distinction between an entrepreneur and a "shopkeeper" might be described in this way (Awotunde, 2021). The difference between the category of "income substitutors" and "entrepreneurial enterprise," as defined by David Birch. The terms "opportunity entrepreneurship" and "necessity entrepreneurship" were created by Giacomin et al., (2011). And, because not all new businesses and self-employed persons are entrepreneurs, a key topic in industrial dynamics is how to distinguish between the many

types of agents who make the decision to establish a business and the relative value of their contributions to economic growth.

Effect of Technological Innovation on Self Employment

Workplaces are changing and labor marketplaces are reconfiguring as a result of technological advancements. The study focuses on the impact of ICT enabled smart machines, smart gadgets, and smart approaches on the labor market. Policies may have a significant impact on these employment outcomes, and ICT can have a significant impact on how some of these policies are executed. There is a lot of emphasis here on public employment services and how they may assist workers and self-employed persons take advantage of the possibilities that ICT may provide. A more widespread usage of digital tools and a shift toward digital labor seem to be in the horizon.

Existing businesses and people may benefit from new "digital professions" and digital technologies available to them now. In contrast, technology has its limitations. Some occupations may be digitized to varying degrees, with some people or portions of their responsibilities being replaced by technology. While some people may be more equipped than others to take advantage of new possibilities, individuals with lower levels of ability may find themselves at a disadvantage and hence more susceptible to a decline in employment quality or a job loss. It's also changing the way individuals interact at work, which has consequences for the dangers they face. Being fully abandoned is also a possibility.

There will be a need for investments and appropriate legislation to increase digital jobs and improve access to digital technologies, just as in the

past. Governments will need to adopt certain steps in order to reap the full advantages of technological advancements. Some of the concerns raised by businesses' increasing use of technology may be alleviated in part as a result, but governments will still need to take further steps to ensure that workers get the benefits of a good job or are assisted as technology evolves. Governments' actions today will have a significant impact on future outcomes.

Machine learning, sophisticated robotics, cloud computing, big data, and data analytics have all improved greatly in the recent two decades. These advancements are projected to continue in the next decade, as well, as we go into the next decade.

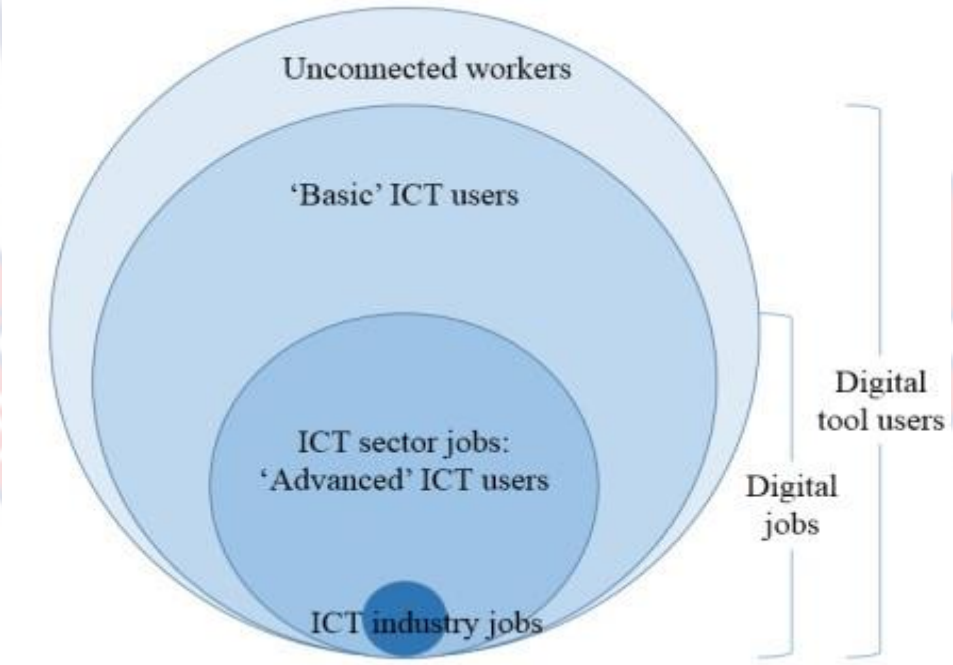


Figure 1: Relative scale of possible impact of technology on work
Source: Bessen (2019).

These changes have also had a significant effect on employment. ICT production and intelligent users that make extensive use of specific software and tools have directly created millions of "digital jobs" across all industries,

thanks to the technology sector. However, the use of digital technologies has had and will continue to have a bigger influence. More individuals are connected to work than ever before, thanks to anything from simple mobile phones to online work platforms. This suggests that the number of individuals who may benefit from digital tools could exceed 3.6 billion, this is the total number of persons who use mobile phone services across the world. Figure 1 depicts the proportional magnitude of the impact of digital jobs vs worker utilization of digital technologies.

Jobs in the digital age in both industrialized and emerging nations, the ICT industry has directly produced millions of employments. For example, in the OECD nations, ICT employment accounted for 5.74 percent of total company employment. The range for the G20 member countries was between 4.66 and 6.45 percent. Some emerging markets have profited as well. Between 2010 and 2013, the IT business in Brazil added 16 percent of new employment, employing over 1.3 million people by 2014. Over 3.5 million people work in India's IT-BPO business, with women accounting for a third of the workforce. The industry's spillover impacts are also important. Digital occupations produce between two and four times the employment in other areas of the economy, according to various research. These employments also offer higher-thanaverage earnings and increase at a quicker rate than other industries. According to statistics from 2004-2005 for a group of G20 nations, computer programmers make around a third more than national averages in terms of gross salaries.

Digital tools

More individuals have access to digital tools that allow them to connect better to resources and markets, particularly labor markets, as a result of the global spread of less expensive and more powerful technologies. Three types of digital technologies have emerged as significant labor market facilitators.

Transactional tools: Buyers and sellers of various commodities and services can use a variety of digital technologies to increase the efficiency and transparency of their transactions. This includes the cell phone, which has been extensively documented as helping diverse workers to obtain better price information (e.g. farmers or fisher folk). Increasing the trustworthiness of financial transactions is made possible, for example, by electronic payment systems. E-commerce is also beginning to have an impact. Because to Taobao,

Alibaba's consumer-to-consumer arm, village economies in China have begun to diversify and provide employment outside of agriculture as SMEs have been able to sell other products such as furniture or handicrafts. In the United States, eBay, an online marketplace, has approximately 25 million sellers, many of whom are small companies, and 155 million buyers, operating in 190 countries. Currently, 90% of professional eBay sellers export to other nations, compared to fewer than 25% of typical small enterprises. Thousands of delivery jobs have been created in India as a result of these marketplaces.

Complementary tools: Many firms and people today utilize a variety of software and hardware, including business software, manufacturing robots,

personal computers, and smart phones. "Enterprises that have completely integrated [the Internet] and utilize it extensively produce more than twice as many jobs as the average," according to the McKinsey Global Institute, "while the Internet has a neutral to slightly negative effect on companies that use it very sparingly or not at all." And the complexity of these technologies is likely to continue to develop at a rapid pace. Many jobs that were previously thought impossible to automate are now achievable with advanced robotics or artificial intelligence-based computers. In the near future, robots may be used for remote surgery alongside surgeons. It's likely that as 3D printing grows less expensive and more complicated, it may alter manufacturing, eliminating the need for factory workers while expanding opportunities for designers and 3D print managers.

Matching tools: It is now possible to connect workers with worldwide employment opportunities through the Internet and mobile networks, thanks to their increasing popularity. As a result of city-level matching services, vacant rooms in homes have been made available to renters, automobile drivers have been connected to customers (e.g., Uber), and marketplaces for "gigs," or nontradable occupations, have been established (e.g., picking up groceries or delivering packages). Companies and employees may now more easily find one another thanks to the growth of online matching services on a national and worldwide scale. Monster.com and SoukTel Job match are examples of systems that concentrate on employment in some situations, while focusing on activities in other situations.

The general assumption is that technology will complement workers in all future employment, and that technology will likely replace some of

today's jobs. This indicates that future occupations will either be digital or include the use of digital instruments. However, there is no agreement on when these changes will occur, how quickly they will occur, or how the benefits and losses from these changes will be allocated. As a result, there are rising worries over whether corporations and governments adopting improved and lower-cost technology would have a detrimental influence on employment or contribute to inequality, allowing certain segments of the population to profit tremendously while others face restricted economic options.

There are four primary concerns that are being contested in the literature: (i) the extent to which jobs are susceptible to being replaced by technology or face massive wage reductions; (ii) the concern of growing inequality in the quality and remuneration of jobs, and that if technology contributes to wage and wealth polarization, there is a risk of the middle class being hollowed out and increased societal tensions; and (iii) the evolving nature of employment relationships themselves and the impending imposition of new regulations.

Job susceptibility

Increasing technological advancements may allow for the digitization of whole professions or only a portion of them. Since the 1980s, for example, developments in office technology have resulted in fewer organizations using typists. The responsibilities of clerical workers have shifted throughout time, and their pay has shifted as well. Jobs and tasks that were formerly thought to be impossible to automate might be digitized in the future. Computerization poses a danger to "approximately 47% of total US

employment," according to a widely accepted study on the topic. On the basis of how likely it is that a job will be automated, they define it as "high, medium, or low risk." As an example, they may "focus on the probable automatability of work over an uncertain period of years." A fraction of today's occupations may go extinct in the future, according to this and other studies.

Various studies have indicated that technological development is often skill-biased, in the sense that employers favor people with greater abilities over those who are unskilled. Recent research has brought depth to this debate, indicating that the results of such skills-biased technology progress are not uniform. According to recent research, technology has begun to polarize the job market. They increase demand for people with skills that are either required to control technology or are creative and so cannot be readily substituted by technology or are non-routine and are currently performed better by humans and thus cannot be quickly substituted by technology. Machines, on the other hand, can replace employees who do regular tasks that are often codifiable and hence can be mechanized to a greater level even with today's technology.

In a number of industrialized nations, including the United States and several European countries, labor market polarization has been extensively examined. The tendency has been for middle-class employment to be heavily mechanized, resulting in a decrease in demand for such employees. In many nations, employment linked with the middle class, such as "sales; office and administrative support; manufacturing, craft and repair; and operator," are on

the declining. And one they did reduce hours worked by low- and middle-skilled workers.

Empirical Review

There are a number of studies which have been carried out to find the relationship between entrepreneurial ability and self-employment. Most of the findings showed a positive relationship between entrepreneurial ability and selfemployment while a few of the studies gave contradictory results, indicating the weak correlation between entrepreneurial ability and self-employment among graduate students.

Stamboulis and Barlas (2014) found that, the interest of university graduates in entrepreneurship has traditionally been low. He added that entrepreneurship has been identified as a key factor for economic growth and social transformation, and part of the current crisis is attributed to the lack of entrepreneurial dynamism in modern, western, economies. Hence, there has been increasing emphasis on policy aims and initiatives with the aim of raising both the awareness the issue and the capacity of societies for entrepreneurial activities. The challenge of how to encourage young people to launch new firms that exploit their acquired skills as well as academic research results, spinoffs, confronts academics and policy makers. In recent years, however, change appears to take place in technology intensive sectors where innovative new entrepreneurial endeavours disrupt industries and markets. A large part of this has been traced to the information and communications technology sector, which provides business opportunities for small innovative enterprises (Selcuk & Gursel, 2014).

A study conducted by Thurik et al., (2008) on whether self-employment reduce unemployment. The study investigated the dynamic relationship between self-employment and unemployment rates and explained that on the one hand, high unemployment rates may lead to start-up activity of self-employed individuals (the "refugee" effect) and on the other hand, higher rates of self-employment may indicate increased entrepreneurial activity reducing unemployment in subsequent periods (the "entrepreneurial" effect). The authors introduced a new two equation vector auto regression model capable of reconciling these ambiguities and estimated it for data from 23 OECD countries between 1974 and 2002. The empirical results confirm the existence of two distinct relationships between unemployment and self-employment: the "refugee" and "entrepreneurial" effects. They also find that the "entrepreneurial" effects are considerably stronger than the "refugee" effects.

In a major study by Premand et al., (2016) on entrepreneurship education and entry into self-employment among university graduates, it was found that entrepreneurship was effective in increasing self-employment among applicants. Chienwattanasook and Jermsittiparsert (2019) also made it clear that innovative ability and entrepreneurial ability are united in entrepreneurship, colleges and universities should reconstruct entrepreneurship teaching system, establish entrepreneurship extracurricular practice system in order to train students on innovative and entrepreneurial ability. This was stated in his study on fostering innovative and entrepreneurial ability of college students: a prospective entrepreneurship innovative ability.

Ismail, Ahmad, Gadar and Yunus (2012) examines the factors stimulating women to choose entrepreneurship as their career. Hypothesis of the study was personality and cultural factors directly related to intention in choosing entrepreneurship as a career. Respondents are 170 women entrepreneurs in district of Kinta, Perak. A structured 47 closed ended items questionnaires are used to collect data. The study used quantitative method such as correlation analysis and multiple regressions to test the variables. The result shows that women's personality correlated weakly with cultural factor. However, the study strongly shows that women entrepreneurs' career choice of entrepreneurship is significantly influenced by cultural factor rather than personality factor.

Enu-Kwesi (2012) did a study in the Ajumako Enyan-Essiam District of Ghana on youth employment and entrepreneurial skills development and found that majority of the youth were unemployed, underemployed or self-employed in formal micro-enterprises. This is as result of their low interest in entrepreneurial activities or intentions to be entrepreneurs and be selfemployed. The focus of most of the youths is not to create their own businesses or be technologically innovation to take advantage of any business opportunities that may arise but rather mainly rely on the government for employment.

Northazlin, Nahariah and Tan (2013) in a study examined the self-employment intentions of the universities' students in Malaysia. Entrepreneurial Attitude Orientation (EAO) scale was used to measure the students' entrepreneurial attitudes. A survey approach was adopted by sending questionnaires to 2000 students of the public and private universities

that are listed under tier 5 (Excellent) in the Malaysia Quality Agency SETARA rating of year 2011. The results showed that personal control, self-esteem and innovation were found to have significant and positive relationships with self-employment intention. Emrah, Ali and Ibrahim (2013) determined the impact of demographic factors on entrepreneurial intention among undergraduate students as a career choice. A written-questionnaire was administered to 638 undergraduate students at a Turkish university. The data obtained were analysed using logistic regression model. The analysis results revealed that the current faculty, type of high school and the household income of their family were significant factors influencing the entrepreneurial intention among respondents.

Noel (2015) analyses factors influencing entrepreneurial intent and studies the relationship between an individual's preliminary entrepreneurial intention of starting a business and the factors driving the same, in India. Using a large sample of individuals, it investigates what variables are significantly correlated with the initial decision to start a business. It used a binomial logit model to test how individual characteristics, subjective perceptions, demographic and economic characteristics are correlated to the decision to start a new business. The results of the study suggest that part-time work experience and social network effects are the strongest in shaping entrepreneurial intentions.

Oppong and Sachs (2015) stated in their study that graduate unemployment and its management are challenges that those leaders of the economy, managers and policy analysts grapple with on a daily basis. As a result, economic leaders and managers of economies have sought theoretical explanations to guide their management strategies of graduate

unemployment. There are two competing theses to explain the problem: skills mismatch and skills oversupply. However, due to the seeming simplicity of basic tenets and policy implications of the skills mismatch thesis, many governments and laypersons have blamed graduate unemployment on it. The paper argued that policy solutions based entirely on skills mismatch may trigger another form of unemployment, oversupply of skilled graduates. Furthermore, oversupply of graduates is more likely to be the significant cause of graduate unemployment than skills mismatch. An effective policy, therefore, is one that takes into account interventions to stimulate demand for labour while at the same time manages the supply of skilled labour. They added that such an approach will provide more sustainable solutions to graduate unemployment. In addition, the potential contributions of psychologists in the efforts towards the management of graduate unemployment were also outlined.

Isah and Garba (2015) in a study analysed students' attitudes toward self-employment intention. Survey design was used to collect data from final year student of Higher National Diploma (HND) across four schools of Kano State Polytechnic. Correlation analysis and analysis of variance (ANOVA) were conducted to examine the relationship among the selected variables and to know the difference among the students on their self-employment intentions. It was found that the relationship between self-employment intentions with the students' self-efficacy, innovativeness and risk-taking propensity are positive, whereas self-employment intention negatively relates with the students' locus of control. The study also reveals that there

is no significant difference among students on their self-employment intentions.

Muhammed and Ahmed (2015) examined the entrepreneurial intention among university students in Nigeria in order to gauge entrepreneurial awareness among the respondents. Theory of Planned Behaviour (TPB) with modification was adopted. A sample size of 205 was drawn from Abubakar Tafawa Balewa University (ATBU). Data were analysed using structural equation modelling. The findings show that, entrepreneurial attitude, subjective norm and power of behavioural control are all significant predictors of EI. In addition, other indirect relationships were also found to be significant.

Ramoni (2016) in a study evaluated the joint effects of entrepreneurship education and two selected entrepreneurship traits, namely, innovation, risk taking propensity on entrepreneurial intention among first degree graduates of Bayero University, Kano, Nigeria. Two hundred and twenty-nine (229) copies of self– administered questionnaire were administered to these graduates through a combination of stratified and systematic sampling techniques. Both descriptive and inferential statistics were employed in the analysis of data. It was found that 20.8 percent in the variation found in the entrepreneurial intention has been explained by entrepreneurial education, innovativeness and risk-taking propensity.

Thomas, Ambrose, Denis and Kennedy (2016) investigated the effect of education, social network, innovativeness and self-efficacy on entrepreneurial intention among university students in Kenya and anchored the study on the Theory of Planned Behavior. The research design was

exploratory and had undergraduates of Moi, Mount Kenya and Catholic Universities as the area of study. The population of the selected universities was 1,649. Stratified sampling was used to select a sample size of 321. The results from the correlation analysis showed that innovativeness, self-efficacy, education and social network were highly and positively significant to entrepreneurial intention. This study's limitation stems from the research design used which is exploratory. In exploratory research design, the sample size is small and not representative.

Setuza (2016) assesses the entrepreneurial intentions among university students in East African Community countries of Rwanda and Kenya. The sample size consists of 275 students from Kigali Independent University (ULK) and University of Nairobi. The data were collected through structured questionnaire. The Theory of Planned Behaviour was used and its four variables: perceived behaviour control, personal attitudes, subjective norms, and intention. Results showed that subjective norms, personal attitudes and perceived behavioural control had positive influence on students' entrepreneurial intention while care about others' opinion did not influence students' entrepreneurship intention in East Africa. Ramos (2014) in a study focused on Entrepreneurial Intention among Business Students in Batangas State University. The descriptive method of research was utilized in the conduct of the study. The study revealed that majority of the respondents have no family business, belongs to middle income group students however, agreed that they possess entrepreneurial intentions, skills and capabilities. The study concluded that entrepreneurial intention is not affected by the profile variables of the respondents.

Adamu (2017) in a study used factors such as entrepreneurship education, environmental factors and societal entrepreneurship attitude to explore the student's entrepreneurial intention. These factors were adopted based on past theoretical and empirical studies which covered the gap and contributed to the body of knowledge in the field of literature. The study concluded that researchers and Ministry of Education should examine this proposition on how to design a more comprehensive and benefice entrepreneurship courses and curriculum to these Nigerian universities. This would aim at preparing these students to be self-employed (entrepreneurs) which would reduce and assist the government in overcoming the problem of youth poverty and unemployment in Nigeria.

Oguntimehin and Olaniran (2017) in a study investigated the relationship between students' exposure to Entrepreneurship Education and their career entrepreneurial intentions in Ogun State-owned universities. Six hypotheses were generated for the study. The population comprised all final year undergraduates, with a sample of six hundred and nine. Three research instruments were used. The data collected were analysed using descriptive statistics, Pearson Product-Moment Correlation Coefficient, T-test and ANOVA. Findings revealed that Entrepreneurship Education significantly influences students' Entrepreneurial intentions.

In another study in Malaysia, Taha et al. (2017) conducted a study which aimed at corroborating the factors affecting entrepreneurial intentions of university students in Malaysia constructed on empirical reviews. In the study, general searches were conducted to accumulate empirical literatures by the name of Entrepreneurship Development, Entrepreneurship Education

and Theory of Planned Behaviour (TPB) in different online database sources such as Google Scholars, Springer Link, Wiley, Science Direct, JSTOR, Emerald full text, Scopus, and EBSCO HOST etc. This study found that innovation, entrepreneurship training and education, family background, government support program, social entrepreneurship, women participation, individual entrepreneurial characteristics, participation of micro, small and medium enterprises, youth empowerment, and collaboration of government university industry is the key tool for entrepreneurship development. Stimulating employment will eventually help alleviate poverty. The study also found that there is a strong relation among students' entrepreneurial attitude, subjective norms, and perceived behavioural control. Moreover, the entrepreneurship teaching methodology has moderating effects on every relationship (Taha et al., 2017).

In a more recent study in Ghana, Appiah-Nimo, Ofori and Arthur (2018) assessed the influence of entrepreneurship education on entrepreneurial intentions among Cape Coast university students in Ghana. The purpose/ general objective of the study was to assess the impacts of a university-wide entrepreneurship course introduced by the university for all first year students of the university of Cape Coast. The researchers sampled 1,200 first year non business students who had finished a semester course in entrepreneurship. In order to achieve this objective, the researchers used a descriptive survey design and a consecutive sampling technique to select their respondents. Structural equation modeling (SEM) was used to analyse the data gathered. Primary data was gathered questionnaire designed to suit the purpose. The questionnaire included items on four main cognitive

construct variables such as attitude towards the behavior, the perceived behavioural control and subjective norm, and intention, based on the Theory of Planned Behavior (TPB). Findings from the study showed that most respondents had positive attitude towards entrepreneurship. Again, subjective norms, according to most respondents, had moderately positive influence on their entrepreneurial intention, while perceived behavioural control had a positively high influence on their entrepreneurial intention. In all, the study, according to the researchers, showed high entrepreneurial intention among the respondents and they were willing and determined to start their dream businesses sometime in the future.This, therefore, is consonance with the theory of planned behaviour (AppiahNimo, et al., 2018).

Richmell, Acheampong and Owusu (2018) explore the factors that influence entrepreneurial intentions among students in Ghana. The research was carried out by a survey method. Questionnaires were used to collect data from 731 undergraduate students pursuing regular and part-time programmes in a Ghanaian public university. Data were analysed using correlation and multiple regression analysis through the SPSS. Results of study showed that six out of the 23 factors explored in the study significantly influenced student entrepreneurial intention. Students' exposure to other entrepreneurs and experienced network are the most significant predictor of student entrepreneurial intentions followed by dissatisfaction with previous job and utilization of better opportunity in the market predicted student entrepreneurial intention.

A study conducted by Yahya et al., (2019) on how entrepreneurship education influences the students' innovation. The study used the multiple

mediation model in its testing and then concluded that there is a positive relationship between perceptions of entrepreneurship education and perception of innovation. Colman et al., (2019) also conducted a study on the factors that affect entrepreneurial intention of university students and the results of the survey showed that educational and structural support factors affect the entrepreneurial intention of students.

Hahn and Cassia (2020) also opined in their study that, to provide individuals with entrepreneurial skills and prepare them to engage in entrepreneurial activities, universities must offer Entrepreneurship Education (EE) courses. However, they further stated that, the growing number of studies on EE impact offers mixed and apparently contradictory results. The study contributed to literature by indicating the type of EE (elective vs. compulsory) and the characteristics of students' exposure to an enterprising family as two complementary boundary conditions that contribute to explain the outcomes of EE. To do so, the paper took advantage of quasi-experimental research on a sample of 427 university students who participated to two consecutive waves of the Global University Entrepreneurial Spirit Students' Survey (GUESSS). The study found that both types of EE contribute to students' entrepreneurial skills; however, the impact of EE in compulsory courses is contingent on students' perceptions of parents' performance as entrepreneurs.

Suleiman, Y. (2021) proposes that technopreneurship education as an effective strategy that can be used to reduce unemployment. Sequential mixed methods research designs (quantitative and qualitative) were adopted for the study. Stratified, quota and random techniques were used to select

370 respondents while purposive and convenience techniques were adopted to select two lecturers and artisan. Findings from both quantitative and qualitative methods revealed that the three dimensions of technopreneurship education (i.e., entrepreneurship course, entrepreneurship practical and internet facility) were significantly related to business intention. Also, findings show that inadequate facility and financial constraint constitute challenges that hinder technopreneurship, while adequate facility and availability of funds were perceived as the remedies to the challenges. Based on the findings of the study, it was recommended that government, banks and other stakeholders in education should assist universities in terms of providing financial assistance to students with business intention.

A study conducted by Masenya, T. M. (2021) also assessed the status of technopreneurship development and identified key variables that determine a successful technopreneurship. Theory U, entrepreneurship orientation, and triple helix models were reviewed to better understand the drivers of technopreneurship development. The study identified barriers to effective technopreneurship development including inadequate funding to support young technopreneurs, weak linkages between stakeholders, lack of awareness in technopreneurship opportunities, lack of infrastructure, lack of appropriate mentors and role models.

Conceptual Framework

As this study examines the entrepreneurial ability, technological innovation and self-employment among students of the University of Cape Coast, the students of University of Cape Coast have been taken as population. Self-employment is the dependent variable while entrepreneurial

ability and technological innovation are the independent variables. The framework of the proposed conceptual model is shown below. Each independent variable mentioned above has a specific influence in the dependent variable which is self-employment. Entrepreneurial ability has some explanatory variables such as self-efficacy, personal attitude, subjective norm, perceived behaviour control and entrepreneurial education.

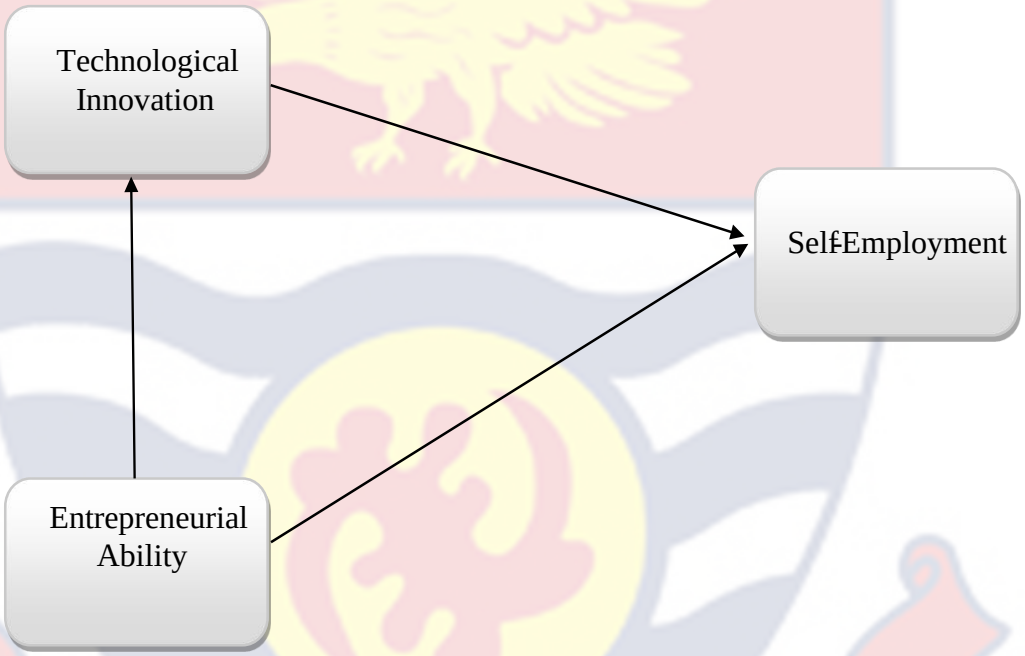


Figure 2: Conceptual Framework
Source: Author's own construct (2022)

Chapter Summary

The chapter reviewed relevant literature to the study. The review first of all touched on theories that were important to highlight and guide the conduct of this study. The chapter further reviewed concepts and terms in entrepreneurship, technological innovativeness and self-employment. The review again brought out the work of other researchers who have researched into the entrepreneurship and technological innovativeness towards self-

employment goal achievement. The chapter then captured some related empirical literature reviews and brought out the findings and results with respect to the topic. The chapter was then summed up with a conceptual framework of the study.

CHAPTER THREE

RESEARCH METHODS

Introduction

The research methodology section of this study describes the methods and procedures that was used and followed in conducting the research. Research methodology represents the systemic investigation aimed at solving research problems (Khusainova & Curteva, 2016). According to Collatto et al., (2018), research methodology is the science behind how a particular research activity is carried out. It spells out the systematic steps taken in studying a particular research problem. Since the study is meant to examine the entrepreneurial ability, technological innovation and self-employment among students of the University of Cape Coast, it becomes eminent for a well-organized scientific enquiry to be followed so as to provide justifiable grounds for validating the reliability and accuracy of processes, procedures, methods and findings of this study.

This section presents a description of the research design and research approach, population, and sample and sampling procedure and sample sizes which are used for the research. It also provides a vivid description of data sources, data collection instrument, data collection procedure, as well as procedures for data processing and analysis.

Research Design

According to Potwarka et al., (2020) research design is considered as a set of arrangements made to collect and analyze data in a way that seeks to integrate compliance with the purpose of the research process and economics. Williams (2007) also described the structure of the study as “a

system, structure and strategies and an integrated investigation to ensure query inquiry and diversity control". According to Young and Javalgi (2007) a master plan that describes the process and methods for obtaining and analyzing the required information is considered a research design.

Various explanations provided by Zikmund et al., (2012), Williams (2007) and Young and Javalgi (2007) have shown that the building of research involves a systematic way in which relevant information is analyzed and interpreted economically and procedure form. It is therefore a concept of data collection, measurement and analysis. The research design should be quickly identified and the research problem selected and organized, the objectives of the research are well defined, the concepts and problems are well defined and the research ideas are well documented (Zikmund et al., 2012). Akhtar (2016) revealed that research design involves a systematic approach in which the right information is collected analysed and interpreted economically and with procedure.

The study used an explanatory research design as a result of scientific research supporting this research. Thus, driven by the concept of causal relationships between constructs entrepreneurial ability and technological innovation (independent variables) and self-employment (dependent variable). Explanatory studies are presented by research ideas that describe the nature and direction of the relationship between study variables. In line with Ali et al., (2021) explanatory research design is performed for you to discover the volume and nature of cause-and-impact relationships. Potwarka et al., (2019) further restated that the premises of positivism research

paradigm are to institute cause-impact relationships. Positivists pursue for consistencies to make predictions and installed scientific rules.

On the premise of this, there may be the opportunity that the universe may be analyzed with scientific strategies (Rowlinson, Hassard & Decker, 2014). This research is naturally a causal study. The primary purpose of explanatory research is to explain why things happen and predict future events (Potgieter, 2021; Malhotra, 2015). One thing that informs the decision to use an explanatory research design is that it aids the logic of cause-impact association amongst the variables of interest accordingly. (Asad et al., 2019).

Research Approach

The study adopted the quantitative research approach. This is because the measurements of the items in the scale were numerically rated by the respondents based on predetermined rating scales (7-point Likert scale). Besides, per the nature of the primary data required, design of the data collection instrument, research objectives, statistically application for data processing, statistical tools for data analysis as well as the theoretical foundation of the study, the adoption of quantitative research design becomes most preferred an obvious option in the face of both qualitative and mixed research approaches.

According to Oancea and Punch, (2014) quantitative approach deals with explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics). Quantitative research approach is a research strategy that quantification in the collection and analysis of data (Balarabe Kura, 2012). Quantitative methods (normally using deductive logic) seek regularities in human lives, by separating the

social world into empirical components called variables which can be represented numerically as frequencies or rate, whose associations with each other can be explored by statistical techniques, and accessed through researcher-introduced stimuli and systematic measurement (Rahman, 2020).

This approach usually begins with data collection based on hypothesis or theory and is followed by the use of descriptive statistics (Balarabe Kura, 2012, Oancea & Punch, 2014). Measurement methods are often described as environmentally friendly, in the sense that assumptions from statistical tests lead to general assumptions about demographic characteristics. Calculation methods are also often seen as assuming that there is only one "truth" present, independent of human perception (Potgieter, 2021). Quantitative findings may be made for the general public or minority because it includes a larger randomly selected sample (Ali et al., (2021).

Population

Population according to Trafimow (2019) consists of the entire group of persons who are of interest to the researcher and who meet the criteria that the researcher is interested in studying, or a set of individuals having some common characteristics. According to Taherdoost (2016) population is the full set of cases from which a sample is drawn. Population can be seen as the target group about which the researcher is interested in gaining information and drawing conclusion (Patel & Patel, 2019). The population included all the total number of undergraduate students of in the University of Cape Coast. An estimated 379 regular undergraduate students are the targeted population. This targeted population includes the various colleges and

schools in the university, thus; College of Agriculture and Natural Sciences, College of Education Studies, College of Health and Allied Sciences and College of Humanities and Legal Studies. They were chosen for the conduct of the study because they possess the required characteristics needed for this kind of study.

The study employed a quantitative research design to achieve the stated objectives. It allowed for the collection of numerical data for analysis. Data for this study was mainly from a primary source. The population of the undergraduate regular students was 22,366. The distribution is further shown in Table 1.

Table 1: Distribution of students across college

COLLEGE	M	F	TOTAL	Sample
College of Agriculture and Natural Sciences	1269	3561	**4830**	82
College of Education Studies	3133	3174	**6307**	107
College of Health and Allied Sciences	1789	2089	**3878**	66
College of Humanities and Legal Studies	3329	4022	**7351**	124
TOTAL	**9520**	**12846**	**22366**	**379**

Source: Directorate of Academic Affairs, University of Cape Coast, 2022

Sample and Sampling Procedure

Sampling is a statistical approach of acquiring a representative population to take information or data concerning a whole population by analysing only a portion of it (Sánchez et al., 2011). Sampling has also been referred to the act, process, or technique of selecting a suitable sample, or a representative part of a population for the purpose of determining parameters or characteristics of the whole population (Mujere, 2016).

According to Saunders (2012) sampling is very essential because, in almost all cases, it is not possible to study all the members of a population.

Three basic types of sampling techniques exist. These are nonprobability sampling, probability sampling and mixed approach sampling techniques. According to Vehovar, Toepoel and Steinmetz (2016) in non-probability sampling, not all the members of the population have the opportunity to be selected for the sample. The definition of a non-probability sampling technique defines the population that will give a reliable inference about a population. Non-probability sampling techniques include convenience sampling, quota sampling, network sampling and purposive sampling. Probability sampling on the other hand, has its elements having equal chance or opportunity of being selected for the sample.

This sampling technique tends to increase the likelihood of achieving the aim of choosing members that precisely represent the entire population from which the members were chosen. Probability sampling technique includes simple random, stratified, cluster or multi stage sampling (Etikan & Bala, 2017). Estimating the extent of probable success is the main aim of the probability sampling technique. As a result, probability theory serves as the basis for a member of a population to be included in a sample. Mixed sampling technique, according to Taherdoost (2016) is a sampling strategy whereby the combination of non-probability and probability sampling techniques are employed at different stages in research.

Before sampling, it is important for the sample size to be determined first. Based on the targeted population size, a sample size of 379 students of the university of Cape Coast was selected to participate in the study through

a stratified sampling technique. Sampling was necessary in this study because sampling allows a step-by-step approach of choosing a few respondents from a larger population to be used as a basis of estimating the prevalence of information of interest to one (Mohajan, 2020).

Chaokromthong and Sintao (2021) sample selection formula was applied to each population of the colleges. Table 1 further shows the distribution of the sample size for each college that used for the study. A two-stage sampling design was used in selecting students. The first stage was group students across all colleges in the university. The second stage selected students based on the sample size distribution provided in Table 1 within each college using the stratified random sampling technique. The lists were obtained from the students' records then the respondents were randomly selected from the list. They were contacted to seek for their consent before the instruments were given to them personally to fill while some were sent into social media platforms to fill the questionnaires.

Sample Procedure and Sample Size

Sampling is the procedure of choosing adequate number of elements or units called sample from a given population in such a way that by studying the sample, and by understanding the properties or characteristics of the sample subjects, it would be possible to generalize the properties or characteristics of the population (Singh & Masuku, 2014). Sample is thus the representative portion of the population that is selected for investigation (Suresh & Chandrashekara, 2012). The study adopted the multi-stage sampling method for this study. First and foremost, the study adopted the sample size formula for finite population proposed by Krejcie and Morgan

(1970). With a population proportion of 50% and a confidence level of 95%, a sample size of 379 is appropriate for a finite or known target population of 22,366 as seen in Table 2. According to them, there is no need of using sample size determination formula for 'known' population since the table has all the provisions one requires to arrive at the required sample size.

The corresponding number on Krejcie and Morgan table for the total number of the population (22,366) is 379. Using the stratified sampling technique, the sample size was determined as follows;

Table 2: Proportional Stratified Sampling Technique

College of Students	Population	Workings	Sample Size
College of Agriculture and Natural Sciences	4830	(4830/22366)*379	82
College of Education Studies	6307	(6307/22366)*379	107
College of Health and Allied Sciences	3878	(3878/22366) *379	66
College of Humanities and Legal Studies	7351	(7351/22366)*379	124

Using Krejice and Morgan formulae to calculate the sample size

Source: Author's own construct (2022)

$n = \frac{x^2 NP(1-P)}{e^2 (N-1) + x^2}$

P(1-P) x^2= 95% confidence level = 3.841 e^2= margin of error, e= 0.05 P= population

proportion= 0.5 N= population

size (22366) n= $\frac{3.841*22366*}{0.5(1-0.5)}$

$((0.05)^2 *(22366-1) + (3.841*0.5(1-0.5)$
n= 379.

Data Collection Instrument

Primary data collection was done through structured questionnaire. Questionnaire is a formalized set of questions for obtaining information from respondents (Singh & Masuku, 2014). Etikan and Bala (2017) provided that surveys using questionnaires are the most widely-used data gathering technique in research and can be used to measure issues that are crucial to the management and development of businesses (Taherdoost, 2016). The closed ended questions require respondents to choose from among a given set of responses and require the respondents to examine each possible response independent of the other choice.

The *close*-ended items employed checklist (a list of behaviour, characteristics or other entities that the researcher is investigating), Likert scale (which is more useful when behaviour, attitude or other phenomenon of interest needs to be evaluated in a continuum) dichotomous questions and multiple-choice questions (Mohajan, 2020). Generally, Chaokromthong and Sintao (2021) posits that there are distinct advantages in using questionnaires rather than interview. Data analysis is made easier and straight forward when structured questions are used for primary data gathering. The researcher's decision to use questionnaire stemmed from the fact that it is the best method by which reliable information can be obtained from a large population. This is supported by Taherdoost (2016) who asserted that the use of questionnaire

is a sensible way for data collection if factual information is needed from substantial number of people.

A 7-point Likert scale was used to measure the opinion, attitude and behaviour of the respondents regarding the questionnaire items. A Likert scale is an ordered scale from which respondents choose one option that best aligns with their view. The 7-point likert scale was used in this study because it is often used to measure respondents' attitudes by asking the extent to which they agree or disagree with a particular question or statement. The scale in which responders specify their level of agreement to a statement was typically in seven points: (1) Least level of Agreement; through to; (7) Highest level of Agreement.

The questionnaire was made up of four subdivisions. These subdivisions were in line with the specific objectives of this study. Section A of the questionnaire measured the Demographic data of the respondents and had eight variables in all. Section B of the questionnaire measured Technological Innovation of the students of the University of Cape Coast. The Technological Innovation construct also had fourteen indicators in all. In a similar fashion, Section C of the questionnaire measured the entrepreneurial abilities of the students, of which this particular section also comprised of six indicators or items.

Finally, the section D of the questionnaire measured the self-employability intentions of the respondents. These items were included in the instruments based on the specific objectives of the study. Again, the instruments of the questionnaires were adopted. It also comprised of five indicators or items. The questionnaire is presented in Appendix I.

To ensure the validity of the constructs, extant empirical review was carried out and this informed the choice of the items that were included in the scale. Detailed discussion was done with students which then informed the alteration of the scale. This procedure was based on the recommendation presented by Keesler and Fukui, (2020). After this, the questionnaire was submitted to the supervisor for more clearing up and authorization. Again, to ensure the reliability of the scale, Principal Component Factor Analysis was piloted where the results of Kaiser-Meyer-Olkin [KOM] measure of sample adequacy and Barlett's Test of sphericity proved helpful. The factors created were then evaluated in terms of their reliability through the internal consistency approach as measured by the Cronbach's Alpha.

Validity and Reliability

In order to ensure content validity of the instrument, the study ensured proper definition measuring items, scale scrutiny by experts and scale pretesting. These were in line with the principles of McDaniel and Gates in 1996. Reliability and validity are two key components to be considered when evaluating a particular instrument. The level of the reliability of an instrument is measured by Cronbach's Alpha value (Poitras et al., 2019).). As posited by Pallant (2016), Cronbach's alpha coefficient for variables is generated to validate the reliability of the instrument. Lakshmi and Mohideen (2013) also indicates that scales with a Cronbach's alpha coefficient of 0.70 and above are considered reliable. However, studies such as Yusoff et al., (2020) and Gani et al., support coefficient of 0.5. The results of the pre-test were used to assess the reliability of the instrument. The result is presented in Table 3.

Table 3: Questionnaire Items and Their Reliability Coefficients

Variable	Questionnaire Items	Cronbach's Alpha
Technological Innovation	8	0.813
Entrepreneurship	6	0.719
Self-Employment	5	0.703

Source: Field survey (2022)

Table 1 provided the values of Cronbach's alpha for all the variables. It appears from the table that the values of Cronbach's alpha ranged between 0.703 and 0.813. These values are all well above the minimum value of 0.50. In this case, based on the criteria of Poitras et al., (2019), it can be concluded that all the items of measurement showed a high level of reliability and have an acceptable level of reliability.

Data Collection Management and Analysis

A structured questionnaire was designed and to cover issues on entrepreneurial ability, self-employment intentions and technological innovation. Data was collected using both a Computer-Assisted Personal Interviewer (CAPI), that was online and face to face approach of administering of the questionnaires to the students. Data cleaning and management was done concurrently with data collection which is an advantage of using the CAPI. The questionnaire was pre-tested after a validation meeting with monitors assigned to the project from DRIC.

The quantitative data was analysed using a path analysis in the structural equation modelling (SEM) technique. This technique combines factor analysis and multiple regression analysis, and aids in analysing the

structural relationship between measured variables and latent constructs. This method is preferred as it estimates the multiple and interrelated dependence in a single analysis. This will enable the researchers find the path from student's entrepreneurial ability and their technological innovation to being self-employed or their self-employment intentions. In addition, a probit model was estimated to predict the factors that are likely to influence entrepreneurial ability and self-employment intentions among students.

Data Processing and Analysis

According to Hendrycks et al., (2019) data analysis entails simplifying data and explaining it in a manner that seeks to answer the research questions posed. Data analysis was also defined by Yan, Wang, Zuo and Zang, (2016) as the process of bringing order, structure and meaning to the mass of information collected as stated in Gani et al., (2020). Analysis of data is a process of editing, cleaning, transforming, and modelling data with the goal of highlighting useful information, suggestion, conclusions, and supporting decision making (Colman et al., 2019). The use of analytics requires reducing complex data into meaningful and actionable information. Collatto et al., (2018) indicated that the main aim of data analysis is to organize, give structure to and derive meaning from data.

In terms of quantitative research, deciding on how to analyse the data collected for the purpose of providing answers to the research questions posed is the main emphasis of data analysis (Patel & Patel, 2019). The statistical tools employed for this study were Statistical Package for Services Solution (SPSS) version 26 and Smart PLS version 3. The SPSS was employed for descriptive analysis and the Smart PLS was employed for

structural equation modelling based on the questions of this study. The descriptive statistics (frequencies and percentages) were employed to determine the characteristics of the respondents.

Structural Equation Modelling

Structural equation modelling (SEM) is a second-generation statistical technique that "enables researchers to incorporate unobservable variables measured indirectly by indicator variables. They also facilitate accounting for measurement error in observed variables" (Byrne, 2013). Partial Least Squares-Structural Equation Modelling (PLS-SEM) uses available data to estimate the nexuses of the path in the model to minimize the residual variance of the endogenous constructs. SEM is made up of two key elements; measurement equations (by confirmatory factor analysis) and structural equations (by path analysis). Whereas confirmatory factor analysis models (CFA) are used for construct validation and scale refinement, path analysis is used to display the relationships that exist among study constructs.

PLS-SEM estimates path model nexuses that maximize the R^2 values of the endogenous constructs (Nitzl, 2016). It is also useful when dealing with complex models and small sample sizes (Cepeda-Carrion et al., 2018; Nitzl, 2016; Hair et al., 2017). PLS-SEM is also more appropriate where theory is less developed. According to Cepeda-Carrion et al., (2018), there are two forms of measurement scale in structural equation modelling: Formative or Reflective. Whereas in formative measurement scale it is the indicators that cause the constructs of the study, in a reflective measurement scale it is the constructs that cause indicators of the study. The current study

employed reflective measurement scale because all the indicators were caused by the constructs.

Furthermore, Hair et al., (2017) has itemized a number of benefits SEM has over other models such as regression. These benefits are: Firstly, SEM uses "latent variables" which allows multiple indicators to capture constructs validly and reliably. Secondly, SEM makes the causal equation model between latent variables clearer as compared to regression. Thirdly, SEM allows one or more independent variables to be regressed on one or more dependent variable. Fourthly, In SEM, a researcher can show the direct effect, indirect effect, and total effect because several exogenous variables and endogenous variables can be estimated simultaneously. PLS is quite robust with regard to inadequacies like skewness, multicollinearity of indicators and misspecification of the structural model (Byrne, 2013). In SEM, confirmatory factor analysis, correlation analysis, and regression analysis can be conducted at one time in a model. In line with the benefits above associated with SEM, this study relied on PLS-SEM to test the various hypotheses.

Validity and Reliability of the Model

There are several criteria for assessing model structures. In general, a systematic application of the different criteria is carried out in a two-step process, (1) the assessment of the measurement model and (2) the assessment of the structural model.

1) Assessment of Measurement Models

Assessment of reflective measurement models includes composite reliability to evaluate internal consistency, individual indicator reliability, and average

variance extracted (AVE) to evaluate convergent validity. In addition, the Fornell-Larcker criterion and cross loadings are used to assess discriminant validity (Hair et al, 2017).

Internal Consistency Reliability

It is a form of reliability used to judge the consistency of results across items on the same test. It determines whether the items measuring a construct are similar in their scores (i.e., if the correlations between the items are large) (Heale & Twycross, 2015). The composite reliability is a more appropriate measure of internal consistency than the Cronbach's alpha (Rossiter, 2020). The composite reliability varies between 0 and 1, with higher values indicating higher levels of reliability. It is generally interpreted in the same way as Cronbach's alpha. Specifically, composite reliability values of 0.60 to 0.70 are acceptable in exploratory research, while in more advanced stages of research, values between 0. 70 and 0.90 can be regarded as satisfactory (Heale & Twycross, 2015).

Convergent Validity

Convergent validity is the extent to which multiple items to measure the same concept agree (Brundle et al., 2019). Skiendziel, Rösch and Schultheiss, (2019) stated that convergent validity is established if all factor loadings for the items measuring the same construct are statistically significant. According to Hair et al. (2019) convergent validity could be accessed through factor loadings and the average variance extracted (AVE). Brundle et al., (2019) point out that to establish convergent validity, factor loadings must be 0.60 and above. An AVE value of 0.50 or higher indicates that, on average, the construct explains more than half of the variance of its

indicators. Conversely, an AVE of less than 0.50 indicates that, on average, more error remains in the items than the variance explained by the construct.

Discriminant Validity

Discriminant validity is the extent to which a construct is truly distinct from other constructs by empirical standards. Thus, establishing discriminant validity implies that a construct is unique and captures phenomena not represented by other constructs in the model (Afthanorhan, Ghazali & Rashid, 2021). The Heterotrait - Monotrait Ratio (HTMT) is a means of determining the discriminant validity of a PLS-SEM model. According to Ab Hamid, Sami and Sidek (2017), a latent construct has discriminant validity when its HTMT ratio is below 0.850. The Fornell-Larcker criterion is also an approach to assessing discriminant validity. It compares the square root of the AVE values with the latent variable correlations (Fornell and Larcker, 1981). Specifically, the square root of each construct's AVE should be greater than its highest correlation with any other construct. (Hair et al. 2017).

2) Assessment of the structural model

The first essential criterion for the assessment of the PLS-SEM is the coefficient of multiple determinations (R^2) for each endogenous construct. Rsquare (R^2) measures the explained variance of a latent variable relative to its total variance. Hair et al. (2017) advanced that a coefficient of determination (R^2) of 0.25, 0.5 and 0.75 are considered as weak, moderate and substantial respectively for structural models. The next step to assess the structural model comprises the evaluation of the regression coefficients between the validated latent variables. A regression coefficient magnitude

indicates the strength of the relationship between two latent variables. Furthermore, regression coefficients should be significant at the 0.05 level, in order to determine the significance (Ab Hamid, Sami & Sidek, 2017).

Finally, another assessment of the structural model involves the model's capability to predict. The predictive relevance of the structural model is assessed by the Stone-Geisser's Q^2 statistic (Hair et al., 2017), In the structural model, Q^2 values larger than zero for a certain reflective endogenous latent variable indicate the path model's predictive relevance for this particular construct. As a relative measure of predictive relevance, values of 0.02, 0.15, and 0.35 indicate that an exogenous construct has a small, medium, or large predictive relevance for a certain endogenous construct. (Hair et al, 2017). It is also imperative to measure the impact of individual endogenous variables on the exogenous variable. This is achieved by assessing the effect size (f^2). As posited by Cohen (1988), f^2 values of 0.02, 0.15, and 0.35, respectively, represent small, medium, and large effects of the exogenous latent variable.

Specifying the Structural and Measurement Model

The section specifies the structure of the model of this study. It indicates the exogenous and the endogenous variables with the various indicators. The structural model is specified in figure 2. There are two exogenous variables, and one endogenous variable in this study. The exogenous variables are;

Entrepreneurial Ability, Technological Innovation. The endogenous variable is; Self- Employment.

The latent variable Entrepreneurial Ability (EA) was measured by five indicators (*EA1, EA2, EA3, EA4 and EA5)*, Technological Innovation (TI) is measured by eight indicators (*TI1, TI2, TI3, TI4, TI5, TI6, TI7 and TI8*), Self- Employment (SE) is measured with five indicators (*SE1, SE2, SE3, SE4 and SE5).*

The study proposes a positive link between Technological Innovation (TI) and Self- Employment (SE) and also between Entrepreneurial Ability (EA) and Self- Employment (SE). The study also hypothesizes a significant link between Technological Innovation (TI) and Self- Employment (SE) and creating an indirect effect between Entrepreneurial Ability (EA) and Self-Employment (SE) through Technological Innovation (TI). There are three paths' hypotheses in the model (figure 3).

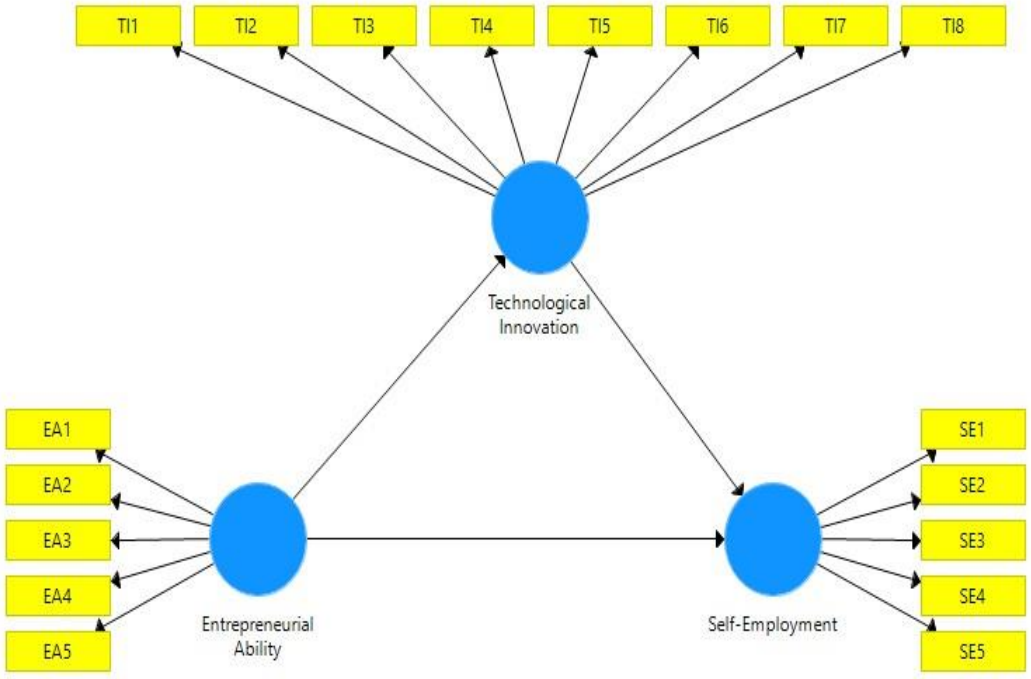


Figure 3: Structural Model
Source: Smart PLS (2022)

Common Method Bias

Common method bias can occur due to self-report measures (Vieluf et al., 2019). Common method bias is a biasing of results that are caused by a common method, such as a single survey (Karimi & Meyer, 2019). Another possible cause of common method bias is the implicit social desirability associated with answering questions in a questionnaire in a particular way, again causing the indicators to share a certain amount of common variation (Bozionelos, 2018). To deal with common method bias, only previously tested scales were used (Vieluf et al., 2019).

Common Method Bias (CMB) can also be tested using Harman's single factor test (Karimi & Meyer, 2019) and VIF scores (Bozionelos, 2018). Vieluf et al., (2019) suggested that a single factor would emerge from a factor analysis or one general factor would account for most of the covariance in the independent and criterion variables if CMB was a serious problem. All variables were entered into an exploratory factor analysis with a principal axis factoring analysis, extracting eleven factors, with factor 1 accounting for only 30.32 percent of the variance, the table is attached as Appendix C. The results indicated that no single factor emerged and no one general factor accounted for the majority of the covariance among the latent factors. Therefore, CMB was unlikely to be a serious issue in this study.

Ethical Consideration

As indicated by Beil et al., (2019), any social researcher should seek permission from the respondents stating clearly their intentions and being guided by research ethics. The respondents were therefore informed of anonymity and confidentiality. The researcher assured the respondents that

their names would not be disclosed. As such, all information received from them (respondents) would be treated with the highest degree of confidentiality. In addition to this, the researcher also informed the respondents that they were free to cease to give any response if they so wish. Finally, the researcher did not withhold any information about the study's possible risks, discomfort or benefits or deliberately deceive study subjects on these matters.

Quality Assurance and Ethical Considerations

The survey protocol was subjected to the University of Cape Coast Institutional Review Board approval. Moreover, respondents were required to indicate their willingness to participate in the survey by signing consent form. The protocol was prepared for submission to go through the ethical review process.

Chapter Summary

This chapter explained in details the methodology followed in carrying out the research. The theoretical foundation of the study, research approach, research design, sampling technique, procedures for data collection, data collection instrument and data analysis were thoroughly discussed. The positivism research paradigm was used as the theoretical foundation of the study. The quantitative research approach was employed for the study because the data collected using questionnaire was quantitatively analysed by using both descriptive and inferential statistics. Descriptive research design was adopted to ensure objectivity in the research process. Simple random sampling technique was used to select samples for the study. The data collection instrument used was a 7-Likert scale

questionnaire. The Statistical Package for Social Sciences (SPSS) version 26 and the SMART PLS 3 were the software used to analyse the data.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

In this study, the main research objective has been, to examine the entrepreneurial ability, technological innovation and self-employment among students of the University of Cape Coast. Based on this main research objective, specific objectives were used to achieve the study goal. This chapter presents the findings and comments that reflect on the particular objectives described in Chapter one, in accordance with the original study aims and technique employed. The first section discusses the demographic features of the respondents. However, the second section, addresses the main specific research questions relating to the topic namely:

1. Determine the relationship between entrepreneurial abilities and self-employment among students,
2. Establish the effect of technological innovation on self-employment among students,
3. Examine the mediating effect of technological innovation on the relationship between entrepreneurial abilities and self-employment nexus.

Response Rate

The total number of students in this research was 379, and a total of 379 questionnaires were sent, with 353 being filled out and returned, reflecting a 93.14% response rate. This means all the questionnaires were answered and returned as shown in Table 4.

Table 4: Response Rate

Questionnaire	Count	Percentage (%)
Responded	353	93.14
Not Responded	26	6.86
Total	379	100

Source: Field survey, Kwarteng (2022)

According to Poynton, DeFouw, Morizio (2019), a response rate of 50 percent is sufficient for analysis and reporting; a rate of 60 percent is acceptable, and a rate of 70 percent or more is outstanding. The high response rate was ascribed to the researcher's contacts in the university, who made the data gathering procedure easier. In addition, the researcher conducted several follow-up calls to clarify questions in order to increase the high response rate.

Descriptive Results for Socio-Demographic Characteristics

The nature of the respondents for this survey is described in this section. The demographic features define the types of people who were utilized as research respondents who were students of the University of Cape Coast, categorically; College of Agriculture and Natural Sciences, College of Education Studies, College of Health and Allied Sciences, College of Humanities and Legal Studies and College of Humanities and Legal Studies. The data was collected across various biographical details. It describes the nature of the respondents of the study. The results are presented in Table 5.

Table 5: Demographic Characteristics for Respondents

		Frequency	Percent (%)
Gender	Male	221	58.3
	Female	158	41.7
Age	Below 18	5	1.42
	19- 25	269	76.21
	26- 30	77	21.81
	30 and above	2	0.56
Programme	Sciences	75	21.25
	Business	83	23.51
	Arts/Humanities	101	28.61
	Education	94	26.63
Religious affiliation	Christianity	271	76.77
	Islamic	77	21.81
	Traditional	3	0.85
	Others	2	0.57
Region of residence	Upper West	18	5.10
	Upper East	16	4.53
	North East	11	3.12
	Savannah	19	5.38
	Northern	21	5.95
	Bono East	19	5.39
	Brong Ahafo	13	3.68

	Ahafo	17	4.82
	Ashanti	41	11.61
	Eastern	28	7.93
	Oti	19	5.38
	Volta	25	7.08
	Central	38	10.77
	Greater Accra	35	9.92
	Western North	19	5.39
	Western	14	3.97
	Urban	236	66.86
Community			
	Rural	117	33.14
Total		**353**	**100**

Source: Author's Findings, Kwarteng (2022)

In this study, there were obviously more male participants than females, as seen in Table 5. Males made up more than half of the responses (58.3%), while females made up the remaining 41.7 percent. According to the age distribution of the respondents, most of them (269) are between the ages of 19 to 25, accounting for more than three quarter of the total (76.21 percent). This implies that the university is generally made up of students between the ages of 19 to 25. In Ghana most students enter into the Universities between the ages of 18 to 20 and that is why 76.21% fell in that category. This might suggest that the university is attractive to young entrepreneurs, with potential and great ideas fusing technological innovation in their operations.

Again, the table indicates that 77 respondents (21.81 percent) were between the ages of 26 to 30. This age group can be considered as a bit matured in terms of age and certainly possible with more experience as compared the previous younger students. The experience, ideas and the expertise from this particular age group can really go a long way to influence their entrepreneurial intentions coupled with their level of technological innovation. Furthermore, 5 respondents (1.42 percent) were below 18 ages, and finally, 2 respondents were 30 years and above representing (0.56 percent) in the university. This means that just a small fraction of students is far beyond the youthful age in the university since the study was done on the regular undergraduate students, which seldom contain students beyond the ages of 30.

With the programme of the students, it was also observed that 75 respondents (21.25%) offered were in the Sciences while 83 respondents (23.51%) were Business students. The highest number of respondents (101) was from the Arts/ Humanities representing 28.61% followed by the respondent you offered programme in Education (83) representing 26.63%.

The table again shows that out of the 353 of the respondents, 271 of them were Christians representing more than three quarter of the total respondents (76.77%) while the Islamic religious respondents were 77 representing 21.81%. The were 3 respondents for the Traditional religion and 2 respondents aligning themselves to the others categories, representing 0.85% and 0.57% respectively. The table then shows that out of the 353 of the respondents distributed among the 16 regions in Ghana, the Ashanti

region had the highest of 41 respondents representing 11.61% with North East having the least respondents of 11 representing 3.12%.

Furthermore, the table shows that 236 of the respondents were from the urban communities representing more than half of the total respondents (66.86%) as at against 117 respondents who were from the rural communities in the country, also representing 33.14%. The students from the urban communities are more likely to have higher technological innovativeness and entrepreneurial intentions as compared those of the students from the rural communities. A study by Luo and Chong (2019) shown that a difference in the likelihood of being self-employed exists between urban and rural areas. The results show that institutional differences between rural and urban areas influence self-employment decisions.

The impact of other factors differs across rural and urban areas. The factors listed in the study included; family ownership of real estate, experience, gender, population density, the management capacity of local government, and the development of private economy in the local community. It is very comprehensible that the students in the urban communities are more likely to have access to technological devices and other IT education, which certainly give them the advantage over those in the rural communities as far the entrepreneurial intentions linked with technological innovativeness is concerned.

The Findings of the Main Study Objectives

This section presents results and analysis based on the three key research objectives of this study. The Smart PLS was employed for structural equation modelling based on the hypotheses of this study and was used in

analyzing the data. The results and analysis are presented chronologically based on the stated objectives of this study.

This section focuses on the measurement models for the study. The section begins with the assessment of the indicator loadings. The measurement model assessments include indicator loadings, Internal consistency reliability (Composite reliability), Convergent validity (AVE-Average variance extracted) and Discriminant validity (Fornell-Lacker and HTMT). A consistent PLS algorithm was run to generate indicators for the assessment of the measurement model. The results are presented in the subsequent tables.

Assessing indicator loadings

Table 6 shows that some indicators have been dropped in comparison to indicators in figure 3. All indicators that loaded below the threshold of 0.6 as recommended by Hair et al., (2017) were dropped to improve the reliability of the overall model. Out of a total of 12 indicators measuring the various latent variables, 5 indicators were dropped for failure to meet the indicator reliability criteria. Thus, 4 scales measuring the entrepreneurial ability, 4 scales measuring the mediating variable which is the technological innovation and 4 of the scales measuring self-employment. The indicator loadings of the items are shown in Table 6.

Table 6: Indicator loadings

	TI	EA	SE
TI1	0.852		
TI2	0.824		
TI3	0.728		
TI4	0.856		
EA1		0.726	
EA2		0.749	
EA3		0.712	
EA4		0.685	
SE1			0.664
SE2			0.794
SE3			0.809
SE4			0.795

Source: Field survey (2022)

From Table 6, the six indicators of entrepreneurial ability loaded above 0.6. The least was (0.685) and the highest (0.749), indicating that the retained indicators are reliable. The minimum indicator loading on technological innovation was (0.728) and the highest (0.856), and finally indicators under self-employment loaded between 0.664-0.809. The indicators used to measure latent variables in this study are reliable, well above the threshold of 0.6.

Assessing internal consistency reliability

In this study, the internal consistency reliability of the constructs was measured using the composite reliability. The composite reliability is a more appropriate measure of internal consistency than the Cronbach's alpha (Dias, 2019). The results in Table 7 indicates that all latent variables in this study are reliable, as they all loaded about the 0.7 threshold by (Zenko & Ekkekakis, 2019). Self-Employment had the highest score of composite reliability (0.914) this was followed by Entrepreneurial Ability (0.848) and the least was Technological Innovation with a composite reliability of 0.834. The results indicate that the model has internal consistency reliability. Table 7 also includes results on convergence validity.

Table 7: Validity and Reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
TI	0.763	0.768	0.834	0.697
EA	0.775	0.801	0.848	0.531
SE	0.895	0.900	0.914	0.544

Source: Field survey (2022)

Assessing convergent validity

The average variance extracted was used in assessing convergent validity. Convergent validity is the extent to which a measure correlates positively with alternative measures of the same construct (Hair et al., 2017). An AVE value of 0.50 or higher indicates that, on average, the construct explains more than half of the variance of its indicators.

Conversely, an AVE of less than 0.50 indicates that, on average, more variance remains in the error of the items than in the variance explained by the construct. The results from Table 7 indicates that all constructs have an AVE of more than 0.5. With the highest being Technological Innovation and the least being Entrepreneurial Ability. This means that the constructs in this model are able to account for more than half of the variance in their indicators. As part of assessing the measurement model, discriminant validity was also assessed.

Assessing discriminant validity

Establishing discriminant validity implies that a construct is unique and captures phenomena not represented by other constructs in the model (Matthes & Ball, 2019). In this study, both the Fornell-Lacker criterion and the HTMT were used to establish discriminant validity. The Fornell-Larcker criterion compares the square root of the AVE values with the latent variable correlations (Fornell & Larcker, 1981).

Specifically, the square root of each construct's AVE should be greater than its highest correlation with any other construct (Hair et al., 2017). The results from Table 8 indicates that the square root of each variable is well above their correlations with other constructs in the study. This means that each construct is unique and no two constructs capture the same phenomenon.

Table 8: Fornell-Lacker criterion

	Entrepreneurial Ability	Self-Employment	Technological Innovation
EA	**0.676**		
SE	0.685	**0.729**	
TI	0.664	0.747	**0.738**

Bold values are the square root of each construct's AVE which is higher than their correlation with other constructs.

Source: Field survey (2022)

The Fornell-Larcker criterion performs very poorly, especially when indicator loadings of the constructs under consideration differ only slightly (e.g., all indicator loadings vary between 0.60 and 0.80) as in this case self-employment. When indicator loadings vary more strongly, the Fornell-Larcker criterion's performance in detecting discriminant validity issues improves but it is still rather poor in assessing overall discriminant validity (Voorhees et al., 2016). As a remedy, Henseler, Ringle and Sarstedt (2015) propose assessing the Heterotrait Monotrait ratio (HTMT) of the correlations. According to Henseler et al (ibid), a latent construct has discriminant validity when its HTMT ratio is below 0.850. The results presented in Table 9 show HTMT values well below 0.850.

Table 9: Heterotrait - Monotrait Ratio (HTMT)

	Entrepreneurial Ability	Self-Employment	Technological Innovation
EA			
SE	**0.765**		
TI	0.786	**0.775**	

Source: Field survey (2022)

Assessing the structural model

This section provides an assessment of the hypotheses of this study. Assessment of the structural model entails assessing collinearity among constructs, coefficient of determination, predictive relevance, effect size, path coefficient and its significance. In this study, both the direct and the indirect model was run together based on the recommendation of Nitzl et al. (2016).

Table 10 shows the result for assessing multicollinearity among the indicators for this study. In the context of PLS-SEM, a tolerance value of 0.20 or lower and a VIF value of 5 and higher respectively indicate a potential collinearity problem (Hair et al., 2011). More specifically, an indicator's VIF level of 5 indicates that 80% of its variance is accounted for by the remaining formative indicators associated with the same construct. With respect to the endogenous variable (self-employment), the results from Table 10 shows a minimum VIF of 1.325 and highest of 1.733, and a minimum tolerance value of 0.423 and highest of 0.788. With respect to entrepreneurial ability, VIF (min1.349 and max-1.820), it indicates a minimum tolerance value of 0.346 and highest of 0.787. The values obtained from this analysis indicated the absence of multicollinearity between the indicators.

Table 10: Collinearity amongst constructs

	SE (VIF)	SE (Tolerance)	TI (VIF)	TI (Tolerance)
EA	1.325	0.186	1.030	1.349

Source: Field survey (2022)

The VIF results in Table 10 further confirms the absence of common method bias. Based on the criteria proposed by Kock and Lynn (2012), the occurrence of a VIF value greater than 3.3 is proposed as an indication of pathological collinearity, and also as an indication that a model may be contaminated by common method bias. Therefore, if all VIFs resulting from a full collinearity test are equal to or lower than 3.3, the model can be considered free from the problem of vertical or lateral collinearity and common method bias (Kock, 2015).

Assessing coefficient of determination and predictive relevance

The R^2 is a measure of the model's predictive accuracy. Another way to view R^2 is that it represents the exogenous variable's combined effect on the endogenous variable(s). Hair et al., (2017) advanced that a coefficient of determination (R^2) of 0.25, 0.5 and 0.75 are considered as weak, moderate and substantial respectively for structural models. The author further asserted that a predictive relevance (Q^2) of "0.02, 0.15 and 0.35" and effect size (f^2) of "0.02, 0.15 and 0.35" are seen as "small, medium and large" respectively for structural models.

Objective one

The first objective of this study sought to examine the effect of entrepreneurial abilities on self-employment among the students of the University of Cape Coast. The path model in Figure 4 shows one direct path

from entrepreneurial ability to self-employment. This path represents the first research question. The direct effect showed that entrepreneurial ability and self-employment accounted for 33.7 percent of the variation in self-employment.

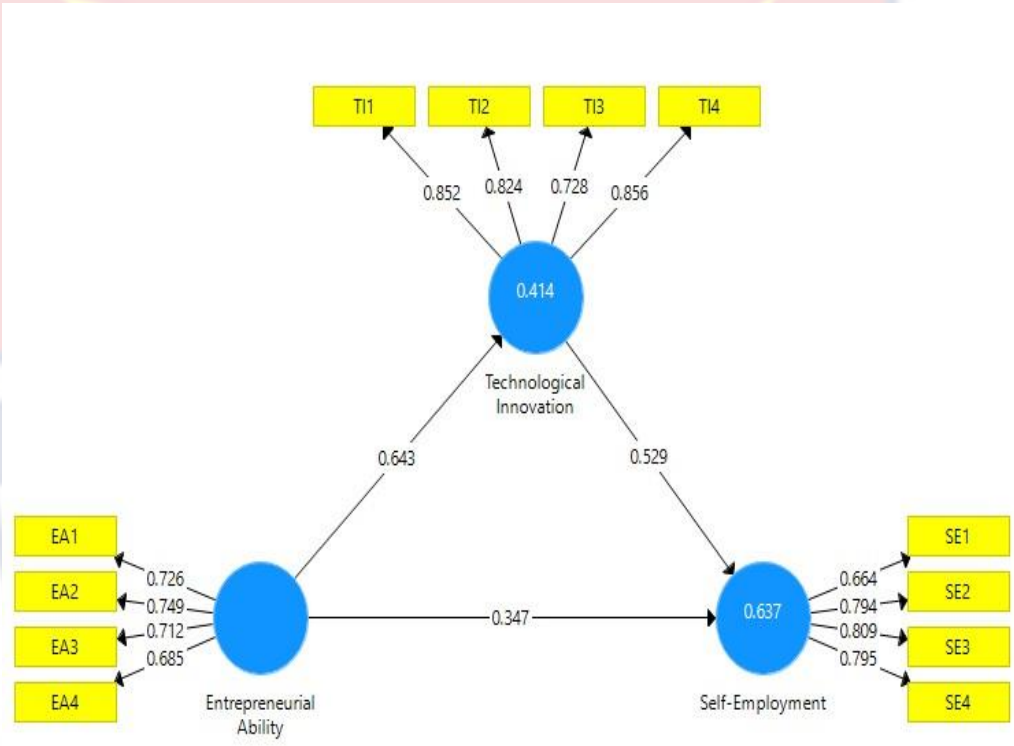


Figure 4: Outer and inner model results
Source: Field survey (2022)

NOTE: EA1= Self-Efficacy, EA2= Personal Attitude, EA3= Subjective Norm, EA4= Perceived Behaviour Control, SE1= Business Intention, SE2= Region or place of residence, SE3= Family and Parents business ownership, SE4= Financial Education, TI1= Accessibility of ICT gadgets, TI2= Usage of ICT gadgets for business purposes, TI3= Intensity of Usage, TI4= Knowledge on Technological Innovativeness.

The first research question was formulated to determine the effect of entrepreneurial ability on self-employment. The formulated research question thus reads:

What is the effect of entrepreneurial abilities on self-employment among students?

Table 11: Structural model results for research question one

	Path	T Statistics	R_2	Adjusted R^2	Q_2	P-Value	f_2
SE			0.637	0.614	0.312		
EA	0.347	3.503				0.001	0.168

Source: Field survey (2022)

Referring from Table 11, it can be concluded that entrepreneurial abilities have a moderate (0.637) coefficient of determination on selfemployment, accounting for 63.7 percent of the variation in self-employment. With respect to predictive relevance, the results show a large predictive relevance of the model on the endogenous variable (0.312). This shows that the exogenous variable does well to predict the endogenous variable. The results of the effect size show that entrepreneurial abilities have a large effect size on the endogenous variable (self-employment).

Based on the path estimation, the results of the PLS-SEM, the study reveals that, entrepreneurial ability is a significant positive predictor of self-employment among administrators at the University of Cape Coast (Beta=0.347; p=0.001: p<0.05, Table 11). This therefore means that entrepreneurial abilities contribute positively to predicting the 34.7% significant variance in self-employment among students at the University of

Cape Coast, such contribution is proven by the scientific interaction among the factors in the PLS-SEM model. The significant contribution of entrepreneurial abilities shows that, students at the University of Cape Coast do have the entrepreneurial abilities or intentions and therefore intend to be self-employed. A summary of the decisions with respect to objective one is presented in Table 12.

Table 12: Summary of objective 1

Objective One	Beta	t-value	P-value	Decision
EA-SE	0.337	3.503	0.001	**Supported**

Source: Field survey (2022)

The results show that, entrepreneurial abilities had a significant effect on self-employment due to the magnitude of its path coefficient (0.337). This is supported by the research of Isah and Garba (2015). They conducted research on the students' attitudes toward self-employment intention. Their study revealed that there was positive and significant relationship between entrepreneurial abilities and self-employment. This finding was also consistent with a related study conducted by Ramoni (2016) who evaluated the joint effects of entrepreneurship education and two selected entrepreneurship traits, namely, innovation, risk taking propensity on entrepreneurial intention among first degree graduates of Bayero University, Kano, Nigeria. His study revealed that entrepreneurial abilities were positively correlated with self-employment.

These findings were also in line with a study conducted by Ismail, Jaffar and Hooi (2013) in a study examined the self-employment intentions of the universities' students in Malaysia. Entrepreneurial Attitude Orientation (EAO) scale was used to measure the students' entrepreneurial attitudes. The results

showed that personal control, self-esteem and innovation were found to have significant and positive relationships with self-employment intention. Izedomi and Okafor (2010) also examined the effect of entrepreneurial education on students' entrepreneurial intentions and also sought to determine whether such intention usually give rise to entrepreneurial start-up among students. A model of regression analysis was used for the study to analyse the data collected. The regression analysis results showed that entrepreneurial education had influence on student's entrepreneurial intentions and their self-employability.

Sultan (2017) also attested to this result with the study to find out the entrepreneurial intention of undergraduate Agricultural students in Ethiopia taking Jimma University college of Agriculture and Veterinary Medicine as a study area. The stratified sampling techniques were applied to select respondents and in order to collect data, pre-test self-administered questionnaires were distributed to 212 participants. Descriptive and inferential analysis such as mean and Spearman correlation were employed. The study found that the entrepreneurial intention of under graduating agricultural students as students had strong desire to pursue entrepreneurial career. Majority of the respondents were ready to assume risk while pursuing entrepreneurial career. However, the study result showed that availability of infrastructure, premises and utility were not satisfactorily available to be self-employed.

Objective two

The second objective sought to establish the effect of technological innovation on self-employment among students. The objective was tested as part of the entire model, representing the direct path technological innovation to self-employment. Thus, the question was asked as;

What is the effect of technological innovation on self-employment among the students?

Table 13: Structural model results for objective two

	Path	T Statistics	R^2	Adjusted R^2	Q^2	P-Value	f^2
SE			0.440	0.435	0.218		
TI	0.523	5.324				0.000	0.405

Source: Field survey (2022)

Based on the path estimation, the results of the PLS-SEM showed that technological innovation had a significant positive effect of self-employment ($\beta = 0.523$, $p<0.05$; Table 13). The results show that the technological innovation among students at the University of Cape Coast is a key determinant of self-employment. Comparatively, technological innovation (0.523) shows an effect on self-employment. The results also show that technological innovation has an effect (0.405) on self-employment based on the criteria of Hair et al. (2017). Therefore, based on the direction and the significance of the path between technological innovation and self-employment, the study supports the assertion that technological innovation has a positive effect on self-employment. It can further be asserted that, a positive technological innovation within the institution, can promote healthy competition among students contributing to self-employment. Likewise, the adverse may also tend to create an unconducive entrepreneurial environment due to the decline in technological innovativeness yielding to a lower possibility of self-employment among the students.

Because the p-value is <0.05, the study will therefore side with the assertion of the research question that; there is a relationship between technological innovation and self-employment. The findings of this objective are supported by the Technological Acceptance Model (TAM). The study is in line with the findings of Masenya (2021) who concluded that there was a positive effect of technological innovation and self-employment. Similarly, Suleiman (2021), confirmed that technological innovation had a positive effect self-employment.

Objective three

The third objective of this study sought to examine the mediating effect of technological innovation on the relationship between entrepreneurial abilities and self-employment nexus. Given that entrepreneurial ability has a significant effect on self-employment, and technological innovation also has a positive effect on self-employment, a mediation test was possible. As Masenya, (2021) had indicated, a significant indirect effect is the only prerequisite for establishing a mediation effect. This objective formed the basis for testing the hypothesis; "*H_0: Technological innovation does not mediate the effect of entrepreneurial ability on self-employment or intention to be self-employed.*

H_A: Technological innovation mediates the effect of entrepreneurial ability on self-employment or intention to be self-employed"

According to the procedure outlined by Hair et al (2017), the mediating effect of technological innovation on the nexus between entrepreneurial ability and self-employment was examined through bootstrapping. The results of the total effect are presented in Table 15. It indicates the significance of every path in the model. The results indicate that, entrepreneurial ability had a significant

influence on both technological innovation (p= 0.004) and self-employment (p=0.000), this shows that the variable (TI) is fit for mediation analysis.

Table 14: Total effect

	Path	T Statistics (|O/STDEV|)	P-Values	f_2
EA -> SE	0.347	10.396	0.000	0.168
EA -> TI	0.643	7.957	0.000	0.787

Source: Field survey (2022)

From Table 14, it can also be inferred that entrepreneurial ability has a direct influence on self-employment (p=0.000), and also, a positive relationship was recorded between entrepreneurial ability and technological innovation (path= 0.643), and that relationship too was found to be significant (p=0.000). Entrepreneurial ability, therefore, can only have a direct influence on stimulating self-employment. In this study it has been concluded that a technological innovation has a positive influence on self-employment (p= 0.000). The path coefficients were all positive; however, its significance was depicted by the p-values. The relationship between entrepreneurial ability and self-employment was positive and significant. The relationship between technological innovation and self-employment is also positive and significant, thus, the hypothesis (H_A) failed to be rejected.

Table 15: Coefficient of Determination (R^2) and predictive relevance

	R Square	R Square Adjusted	Q^2 (=1-SSE/SSO)
SE	0.637	0.614	0.312
TI	0.414	0.435	0.218

Source: Field survey (2022)

Table 15 shows the coefficient of determination and predictive relevance of the model on the two endogenous variables. The results show that the entire

model accounts for 63.7% of the variation in the self-employability of the students at the University of Cape Coast. According to Khusainova & Curteva, (2016), an R^2 value of 63.7% indicates moderate variation, which is sufficient (Hair et al., 2017). Also, with respect to the mediating variable, the results show that 41.4% of the variation in technological innovation is accounted for by entrepreneurial ability or intentions by the students at the University of Cape Coast. The Stone-Geisser's Q^2 statistic (Stone, 1974) was used to assess the predictive relevance of the model. The model shows a predictive relevance of 0.312 for self-employment and 0.218 for technological innovation indicate medium predictive relevance according to Hair et al., (2017).

Based on the positive significant effect of the mediating variable (technological innovation) on self-employment, and the positive effect of entrepreneurial ability on technological innovation, the specific indirect effect was assessed to determine the nature and type of mediating effect as proposed by (Ismail, Jaffar & Hooi, 2013; Hair et al., 2017). The mediation analysis was tested between entrepreneurial ability and self-employment. The results of the specific indirect effect are presented in Table 16.

***Table 16*: Structural model results for objective three**

	T-Statistics (|O/STDEV|)	**P- Value**	**Decision**
EA-> TI->SE	8.936	0.000	**Supported**

Source: Field survey (2022)

The first step of testing the effect of the exogenous variable on the mediating variable showed that technological innovation (TI) mediated the

nexus between entrepreneurial ability and self-employment. The results from Table 16 shows that technological innovation mediates the relationship between entrepreneurial ability and self-employment. The findings lead to the conclusion that, holding other factors and variables constant, technological innovation influences the self-employability among the students of the University of Cape Coast.

This current study affirmed a mediating role of technological innovation on entrepreneurial ability and self-employment. Based on the Technological Acceptance Model (TAM), this theory of information systems explains and models how a person accepts and utilizes technological innovation. A user's behavior may be explained in terms of their acceptance of a wide range of new end-user computer technologies, and TAM clarifies this acceptance while also validating theoretical and economic positions. The results have shown that technological innovation plays a very significant role when it comes self-employment. It is worth noting that, technological innovation is very essential among other variables in influencing self-employment.

Chapter Summary

This chapter began with a description of the respondents to the study. The chapter included an assessment of the influence of entrepreneurial ability on self-employment. The second objective assessed the influence of technological innovation on self-employment. The results of the study concluded that students are able to develop a higher interest in entrepreneurship and the desire to be self-employed when the requires factors or measures within the University are seen as favourable.

The study also showed that there was a positive relationship between entrepreneurial ability and self-employment. Indicating that entrepreneurial ability within the University play an important role in creating a culture conducive for proper birth of self-employment intentions among the students of the University of Cape Coast. The chapter concluded with assessment of the mediating role of technological innovation on the relationship between entrepreneurial ability and self-employment. The next chapter presents the conclusions and recommendations of the study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The study sought to examine the mediating effect of technological innovation between entrepreneurial ability and self-employment among the students of the University of Cape Coast, Ghana. The previous chapter provided information in respect of the findings and discussions made. This chapter presents information relating to the summary of the key findings, the conclusions drawn in respect of the specific research objectives and that of the recommendations offered in respect of the study.

Summary of Findings

The main aim of this study was to assess the influence of entrepreneurial ability on self-employment among students of the University of Cape Coast and the role of technological innovation in mediating such a nexus. Specifically, the study sought to; investigate the effect of entrepreneurial ability on the self-employment among students of the University of Cape Coast; examine the effect of technological innovation on self-employment among the students of the University of Cape Coast and; examine the mediating role of technological innovation on the relationship between entrepreneurial ability and self-employment among students in the University of Cape Coast.

To help achieve these objectives, three supporting research questions were formulated geared towards answering the objectives accordingly. The study employed partial least squares structural equation modelling as the main statistical technique for the analysis. From a population of 22,366 students staff from the University of Cape Coast, 379 were sampled, using the college using

the stratified random sampling technique to select respondents for the study. In total, 353 valid responses were obtained from the students at the University of Cape Coast. The study began with a pre-test with 100 postgraduate students at the University of Cape Coast, Cape Coast. Following the success, a self-administered questionnaire based on scales from reliable and on extensive literature was administered to the respondents. This was done to avoid common method bias. The instrument centred on characteristics of the respondents as well as the variables considered in this study.

The demographic information on respondents was analysed using descriptive statistics (Frequencies and percentages). The three main objectives of this study were analysed using partial least squares structural equation modelling techniques with the aid of the SMART PLS version 3.0, whiles the descriptive were processed with the SPSS Version 26. An alpha level of 0.05 was used for all tests of significance. Three research questions were developed to answer the purpose of the study. The major findings as they related to the specific objectives of the study have been summarised below.

Key Findings of the Study

With respect to the objectives of the study, these were the outcomes of the study.

1. The first objective determined the effect of entrepreneurial abilities and self-employment among students. The results showed that, entrepreneurial abilities account for a statistically significant positive (34.7%) variance in self-employment among the students of the University of Cape Coast.

2. The second objective established the effect of technological innovation on self-employment among students. The results showed that, technological

innovation accounts for a statistically significant positive variance in self-employment among students of the University of Cape Coast. The contribution of technological innovation to predicting the 63.7% positive change in self-employment shows that technological innovation makes a statistically significant unique positive contribution of which its contribution was significant with 52.9%.

3. Objective three assessed the mediating effect of technological innovation in the relationship between entrepreneurial abilities and self-employment among students of the University of Cape Coast. The results showed that, technological innovation mediates the predictive relationship between entrepreneurial abilities and self-employment among students of the University of Cape Coast.

Conclusions

The conclusions are drawn based on the findings of the study;

1. With respect to the first objective, it is concluded that entrepreneurial abilities are very expedient variables to be considered in improving self-employment among students of the University of Cape Coast. Entrepreneurial abilities are very important qualities that the students must possess to enhance the possibility of their self-employability in the country. It is therefore imperative for the students to develop entrepreneurial abilities to increase their chances of been self-employed.
2. With respect to the second objective, this study concludes that technological innovation among the students of the University of Cape Coast has a strong influence on self-employed. It can further be concluded that, a positive technological innovation among the students in this institution, can promote

healthy environment among the students contributing to their self-employability.

3. With respect to the final objective, this study concludes that technological innovation mediates the relationship between entrepreneurial abilities and self-employment. The findings lead to the conclusion that, holding other factors and variables constant, technological innovation really influence self-employment when entrepreneurial abilities are also in play.

Recommendations

The following recommendations are based on the conclusions drawn from this study;

1. The leadership of the University of Cape Coast must encourage students and precisely, the undergraduate regular students, by means of sensitizing them in every means they can and also imbedding in them the requisite entrepreneurial knowledge and skills to help them have the self-employment intentions. The University of Cape Coast management must develop initiatives aimed at promoting and motivating the students with reference to the creation of some of their own small businesses or entrepreneurship initiatives. The University should therefore put measures in place to increase the interest.
2. The study also proves that technological innovation predicts a positive variance in self-employment among students of the University of Cape Coast. Hence, it is recommended that, conscious managerial effort needs to be expended to create, maintain and promote a healthy atmosphere or environment within the University that provides a proper platform to spark the interest of the spirit of entrepreneurship among the students to help

increase the rate of self-employment among the students of the University of Cape Coast.

3. It is recommended that management of the University of Cape Coast put mechanisms in place which allow students of the University to experience and belong to associations within the institution that help sharpen their entrepreneurial skills and give them the requisite knowledge needed to enhance their self-employability. These include; making resources available, and providing financial resources specifically for generating and improving performance in their entrepreneurship ventures.

4. It is recommended that the Centre for Entrepreneurship and Small Enterprise Development (CESED) and the Design Thinking and Innovation Hub (D-Hub) should enhance their practicalities in their programmes to effectively sensitive and equip the students with entrepreneurship skills to increase self-employability among the students.

Suggestions for further research

It is suggested that further research be carried out to examine how students in other tertiary institutions also react to the availability of these variables within their respective organisations and how the play major roles in curtailing the issue of unemployment in the country. This would aid in generalizing the findings of the study across the educational sectors in Ghana. Replicating this study on a longitudinal basis will reveal how entrepreneurial abilities influences self-employment with the role of technological in the long-term.

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APPENDIX I

UNIVERSITY OF CAPE COAST-SCHOOL OF ECONOMICS

ENTREPRENEURIAL ABILITY, TECHNOLOGICAL INNOVATION AND SELF EMPLOYMENT AMONG STUDENTS OF UNIVERSITY OF CAPE COAST

The purpose of this study is to examine the drivers of entrepreneurial ability and self-employment/intention to be self-employed after controlling for technological innovation among students of the University of Cape Coast. The questionnaire asks questions on your background characteristics and issues on technological innovation, entrepreneurship, and self-employment. It will take approximately 15 minutes to complete. Your participation is entirely voluntary, and all information collected in this survey will be kept strictly confidential. You have the right to refuse to answer any questions/items or to avoid participating at any time for any reason. If you have any queries regarding the survey questions, do contact me via e-mail (samuel.animkwarteng@stu.ucc.edu.gh). Thank you for giving your valuable time to complete the following survey questionnaires.

A. Background Information

A1. Sex: M ☐ F ☐ Age:…….. Marital status…….. Level……..

A2. College:

A3. Programme: Sciences….. Business…… Arts/Humanities…… Education……

A3. Religious affiliation: Christianity ☐ Islamic ☐ Traditional ☐ Other……

A4. Region of residence: ……

A5. Community (where you live) Urban…….. Rural…….

A6. Do you belong to any network? Yes……No…….

A7. If Yes to A6, what network do you belong to: Social……..Political…….Religious……

Youth…….. Other (Please specify)…….

A8. Do you hold or ever held leadership position on campus or anywhere? Yes…… No……..

B. Technological Innovation (TI)

TI1. These ICT gadgets contribute to technological innovativeness in my entrepreneurship

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. Smart Phone					
b. Laptop/Desktop Computer					
c. Tablet/Phablet					

TI2. The following social media platforms enhance entrepreneurship when properly utilized.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. Facebook					
b. LinkedIn					
c. Twitter					
d. YouTube					
e. Instagram					
f. Google+					
g. Blogs					
h. Pinterest					
i. Vimeo					

j. Wikis					
k. Snapchat					
l. Foursquare					

TI3. These online purchasing (e-commerce) sites promote entrepreneurship businesses

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. E-bay					
b. Amazon					
c. Jumia					
d. Jiji					
e. Alibaba					
f. Kikuu					
g. Melcom					
h. Tonaton					
i. Kaymu					

TI4. Indicate your frequency level of online purchase from any of these websites with the following sentences from 1 (Not Often) to 7 (Very Often).

	1	2	3	4	5	6	7
a. E-bay							
b. Amazon							
c. Jumia							
d. Jiji							
e. Alibaba							
f. Kikuu							
g. Melcom							
h. Tonaton							
i. Kaymu							

TI5. Indicate the intensity of usage or the main reason why you currently use social media.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. Business networking					
b. Keeping in touch with friends/family					
c. Sharing information					
d. Other					

TI6. Indicate your level of technologically innovative idea that you possess for doing business with the following sentences 1 (Very Low) to 7 (Very High)

	1	2	3	4	5	6	7
a. I have technological innovation ideas for doing entrepreneurial activities							
b. My courses have provided me with technological innovation knowledge							

TI7. Indicate your source of technologically innovative ideas that you possess for doing business with the following sentences 1 (Very Low) to 7 (Very High)

	1	2	3	4	5	6	7
a. Own							
b. Friend(s)							
c. Family							
d. Social Media							
e. Classroom							

TI8. Indicate the reasons you use technology with the following sentences 1 (Very Low) to 7 (Very High)

	1	2	3	4	5	6	7
a. Learning							
b. Research/development							
c. Manufacturing/creation of something							
d. Marketing							
e. Resource allocation							
f. Organising							
g. Planning							

C. Entrepreneurial Ability (EA)

EA1. Entrepreneurial Self-Efficacy: Rate yourself on the following measures.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
j. Being able to solve problems					
k. Managing money					
l. Being creative					
m. Getting people to agree with you					
n. Being a leader					
o. Making decisions					

EA2. Personal Attitude

Indicate your level of agreement with the following sentences from 1 (total disagreement) to 7 (total agreement).

	1	2	3	4	5	6	7
a. Being an entrepreneur gives me more advantages than disadvantages to me							
b. A career as entrepreneur is attractive for me							
c. If I had the opportunity and resources, I'd like to start a firm							
d. Being an entrepreneur would entail great satisfactions for me							
e. Among various options, I would rather be an entrepreneur							

EA3. Subjective Norm

If you decided to create a firm, would people in your close environment approve of that decision? Indicate from 1 (total disapproval) to 7 (total approval).

	1	2	3	4	5	6	7
a. Your close family							
b. Your friends							

EA4. Perceived Behavioral Control

To what extent do you agree with the following statements regarding your entrepreneurial capacity? Value them from 1 (total disagreement) to 7 (total agreement).

	1	2	3	4	5	6	7
a. To start a firm and keep it working would be easy for me							
b. I am prepared to start a viable firm							
c. I can control the creation process of a new firm							
d. I know the necessary practical details to start a firm							
e. I know how to develop an entrepreneurial project							

f. If I tried to start a firm, I would have a high probability of succeeding							

EA5. Entrepreneurial Intention

Indicate your level of agreement with the following statements from 1 (total disagreement) to 7 (total agreement)

	1	2	3	4	5	6	7
a. I am ready to do anything to be an entrepreneur							
b. My professional goal is to become an entrepreneur							
c. I will make every effort to start and run my own firm							
d. I am determined to create a firm in the future							
e. I have seriously thought of starting a firm							
f. I have the firm intention to start a firm some day							

D. Self-Employment (SE)

SE1. Indicate your level of response with the following sentences 1 (total disagreement) to 7 (total agreement)

	1	2	3	4	5	6	7
a. I have self-employment/business idea							
b. I will like my business to be in a partnership form							
c. I will like my business to be in a form of sole proprietorship							
d. I have previous management, business education or experience							

SE2. Indicate your level of intention to establish your own business with the following sentences 1 (Very Low) to 7 (Very High)

	1	2	3	4	5	6	7
a. I want to establish my own business after school							
b. I have intentions of establishing business anytime soon							

SE3. How important are these to you why you established or will want to establish your own business?

Need for…	Not important	Slightly Important	Moderately important	Important	Very Important
Money					
Power					
Independence					

Achievement in Life					
Recognition					
Job security					

SE4. To what extent do you agree with the following statements regarding the factors that influence self-employment. Value them from 1 (total disagreement) to 7 (total agreement).

	1	2	3	4	5	6	7
a. Parents or relatives can influence self-employment							
b. Friends can influence self-employment							
c. Personal interests of an individual can influence selfemployment							

E. Knowledge and usage of financial institutions, products, and services

E1. Do you have a bank account? Yes……... No……...

E2. Have you ever taken a loan before? Yes…….. No……

E3. If yes to E2, indicate where loan was taken:

a. Bank
b. Credit union
c. Saving & loans Company
d. Microfinance company
e. Mobile Money

E4. Have you received any financial education? Yes…….. No……..

E5. If Yes to E4, please indicate how you receive the financial education based your level of agreement with the following sentences from 1 (total disagreement) to 7 (total agreement).

	1	2	3	4	5	6	7
a. Financial seminar							
b. Symposium							
c. TV/Radio							
d. Internet							
e. Through staff of financial institution							
f. Social media							

THANK YOU FOR PARTICIPATING

APPENDIX II

Table 3.1

Table for Determining Sample Size of a Known Population

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

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*