

DURBAN UNIVERSITY OF TECHNOLOGY

**THE ROLE OF ENTREPRENEURSHIP EDUCATION IN DEVELOPING
ENTREPRENEURIAL INTENTIONS AMONG STUDENTS AT THE TAKORADI
TECHNICAL UNIVERSITY IN GHANA**

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NOVEMBER 2025



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ENTREPRENEURIAL INTENTIONS AMONG STUDENTS AT THE TAKORADI
TECHNICAL UNIVERSITY IN GHANA**

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APPROVED FOR FINAL SUBMISSION

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____Date: 10/11/2025

DECLARATION

I, Hafiz Adam, hereby declare that this thesis is original and all the materials used are appropriately acknowledged and explicitly referenced. A bibliography is appended to the thesis. I also certify that the thesis has not heretofore been submitted in any of its part or in its entirety for a degree in any other institution of higher learning locally or internationally. I further declare that this thesis does not contain any pictures or graphics copied directly from the internet, unless specifically acknowledged and the sources provided in the thesis and in the bibliography section. I hereby give permission for my work to be available for photocopying and/or re-printing for inter-library loan and for the title and abstract of this thesis to be made available to other educational institutions and students.

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ABSTRACT

Graduate unemployment in Ghana remains a pressing concern, prompting successive governments to prioritize entrepreneurship education (EE) as a strategic intervention. Despite its growing emphasis, the impact of EE on promoting entrepreneurial intentions (EI) among students has been inconsistent, particularly in relation to the mediating role of practical learning in academic programmes. This study investigates the influence of EE on students' EI, focusing on the effects of practical learning in programmes (PLP) in the context of Takoradi Technical University (TTU), a premier institution in Ghana's technical and vocational education sector.

Guided by the Theory of Planned Behaviour (TPB) (Ajzen, 1991), the study employed a quantitative research design with a cross-sectional survey and collected data from 537 students across 28 departments offering entrepreneurship courses. A structured online questionnaire, adapted from established Entrepreneurship Intention Questionnaires (EIQs), captured data on EE delivery, perceptions of PLP and entrepreneurial constructs- attitudes towards entrepreneurship (ATE), subjective norms (SN) and perceived behavioural control (PBC). Using Partial Least Squares Structural Equation Modeling (PLS-SEM), the study assessed the relationships between EE, PLP and EI.

The findings revealed that EE positively influenced students' SN and PBC but had no significant effect on their entrepreneurial attitudes. Practical learning played a pivotal mediating role, strengthening the impact of EE on SN and PBC, though it did not directly

influence entrepreneurial attitudes. These results underscore the critical importance of experiential learning, such as internships and hands-on projects in enhancing the effectiveness of EE.

This study contributes to the existing body of knowledge by demonstrating that EE's effectiveness is significantly amplified when integrated with practical learning. It also challenges the assumption that EE universally enhances entrepreneurial attitudes, suggesting that additional interventions, such as exposure to role models and an enabling environment, may be required. By differentiating the effects of EE on specific constructs within Ajzen's TPB, the research provides actionable insights for optimizing EE. These findings offer a roadmap for educators and policymakers to design targeted, experiential EE programmes that foster EI and address graduate unemployment challenges in Ghana.

Keywords: entrepreneurship education; entrepreneurial intentions; subjective norms; behavioural control; entrepreneurial attitudes; experiential learning

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DEDICATION

This thesis is dedicated to my grandmother Aisha

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LIST OF ABBREVIATIONS AND ACRONYMS

1D1F	One District, One Factory
ATE	Attitudes Towards Entrepreneurship
AVE	Average Variance Extracted
BTech	Bachelor of Technology
CFA	Confirmatory Factor Analysis
COVID-19	Corona Virus Disease-2019
CR	Composite Reliability
EEM	Entrepreneurial Event Model
EIQs	Entrepreneurship Intention Questionnaires
EL	Experiential Learning
GDP	Gross Domestic Product
GEA	Ghana Enterprises Agency
GEM	Global Entrepreneurship Monitor
GSS	Ghana Statistical Service
HND	Higher National Diploma
HTMT	Heterotrait-Monotrait
ICT	information and Communications Technology
ILO	International Labour Organization
MTech	Master of Technology
NBSSI	National Board for Small Scale Industries

NEIP	National Entrepreneurship and Innovation Plan
PBC	Perceived Behavioural Control
PLP	Practical Learning in Students' Programmes
SCCT	Social Cognitive Career Theory
SEM	Structural Equation Modelling
SMEs	Small and Medium-Scale Enterprises
SN	Subjective Norms
SPSS	Statistical Package for the Social Sciences
SRMS	Student Record Management Service
STEM	Science, Technology, Engineering and Mathematics
TPB	Theory of Planned Behaviour
TTU	Takoradi Technical University
UN	United Nations
VIF	Variance Bias

CHAPTER 1

INTRODUCTION

1.1 Introduction

Entrepreneurial activities in any developing economy represent one sure means by which social and economic growth can be enhanced as it works to increase individual income, job creation and stimulating society's inventive spirit (Dhahri and Omri 2018; Chshelokovskiy 2025). In other words, enhancing economic growth and infusing fresh energies to the economic health of a country requires that economic activities, through increased entrepreneurial activities is imperative. Literature abounds regarding how much entrepreneurship contribute to the growth and development of economies worldwide (Iparraguirre 2020; Chshelokovskiy 2025). To this end, many academics such as Otache (2019) and Dobra-Constantinescu et al. (2024) have argued for the increased nurturing of the entrepreneurship mindset and activities through education.

As society progresses, the valuable role of entrepreneurial education (EE) in creating as many entrepreneurs as possible has become apparent. Consequently, governments all over the world are increasing their focus on how to take advantage of education by incorporating entrepreneurship education programmes and courses in their general educational structure in response to national policies that have recognized the need to boost entrepreneurship. This, in the view of Scanlen and Adams (2025) will not only help boost economic development but will serve as a tool for employment creation. University students are particularly targeted for entrepreneurship mindset and skills development due to their ability and potential for innovative and independent learning, as compared to

school learners who are still learning to innovate and sharpen their entrepreneurial mindset. Targeting them at their youthful age is therefore the way to go (Hameed and Irfan 2019; Sarif et al. 2024). Entrepreneurship education at university stage is also said to equip students with fundamental information as well as encourages entrepreneurial thinking that is necessary for critical and creative thinking (Chimucheka 2014; Dobra-Constantinescu et al. 2024). This chapter elucidates the research context as well as the problem that the research is investigated. It further spells out the aims, objectives and research questions to focus on. Lastly, it presents the significance of the research, delimitation, limitations, ethical considerations and structure of the thesis.

1.2 The context of the study

Ghana, like any other country in the world, is burdened with many social and economic challenges and instability that is increasingly rendering the quality of living in the country unbearable. Despite its employment potentials, Ghana's unemployment situation is worsening (at 13.4% in 2023) according to the National Statistical Services (2024) and is not pulling up well with its economic development (Abass 2025). Due to fiscal restrictions, the government appears to be at a loss as to how to reduce the cost of living for residents. Unemployment has been a pressing national issue for many years, particularly among the youth population. Globally, the youth unemployment rate stood at 12.6% in 2024, significantly higher than the overall unemployment rate of 5% during the same period.

In Ghana, youth unemployment remains a critical concern. The International Labour Organization (ILO) reported that, as of 2024, the youth unemployment rate in Ghana was

approximately 12%. This statistic underscores the disproportionate impact of unemployment on the nation's younger population, emphasizing the need for targeted interventions to address this ongoing challenge. These figures highlight the persistent issue of youth unemployment both globally and within Ghana, underscoring the importance of implementing effective policies and Programmes to support young job seekers.

The serious socio-economic repercussions of rising adolescent unemployment necessitate more studies to provide alternate answers to the problem's numerous issues. Preparing tertiary level students to face the reality of jobs is a global problem (Succi & Canovi 2020). Despite the initial post-pandemic advantages, recent economic conditions have led to a surplus of graduates and fewer job vacancies, with companies consolidating and showing a preference for retaining current staff. This situation has resulted in significant challenges for graduates seeking employment.

However, the curricula and pedagogy of Ghana's institutions of higher learning does not seem to be responding to the urgent need for the relevant skills, experiences and the knowledge required to feed the nation's manpower needs. According to Affum-Osei et al. (2019), there seem to be a clear bottleneck regarding education-industry linkages as observed in the challenged transition from school to the job market (Affum-Osei et al. 2019). Ghana is, nonetheless, committed to Goal 4 of the United Nations (UN) Sustainable Development Goals (SDG) that is aimed at delivering quality education (UN, 2021). However, until we place a priority on the proof of personal talents, abilities and

experience as a criterion for successful university graduation, our graduates will continue to face unfair competition in the global labour market (Behle, 2020).

Preparing tertiary-level students to meet the demands of the job market is a global challenge. In Ghana, efforts have been made to align higher education with industry needs, notably through the enhancement of Technical and Vocational Education and Training (TVET) Programmes. These Programmes aim to equip individuals with technical and professional skills essential for the country's socioeconomic and industrial development, emphasizing self-employment and practical skill acquisition. The upgrade of polytechnics to technical universities, coupled with the introduction of state-of-the-art laboratories, reflects a commitment to providing hands-on learning experiences that prepare graduates for self-employment.

Despite these initiatives, challenges persist in fully integrating education with industry requirements, particularly in non-technical fields. The transition from academic settings to the job market remains a concern, highlighting the need for stronger education-industry linkages. Ghana's commitment to Goal 4 of the United Nations Sustainable Development Goals, which aims to ensure inclusive and equitable quality education, underscores the importance of addressing these challenges.

To enhance the employability of graduates, it is crucial to prioritize the development of personal talents, abilities, and practical experience within university curricula. Emphasizing work-integrated learning and fostering collaborations between educational

institutions and industries can better prepare students for the realities of the global labor market

The government of Ghana has recognized entrepreneurial initiatives as a strategy of lowering graduate unemployment rates over the years. This has been widely considered as an excellent technique for providing adolescents and students at higher education institutions with the necessary entrepreneurial skills and incentives to make them (self-) employed. Entrepreneurship helps to reduce unemployment by creating job possibilities, stimulating regional development, increasing economic growth and encouraging innovation (GEM 2021). Recognizing that the government is unable to absorb the increasing numbers of students that graduate with tertiary level of education, it is only wise to produce private job creators. This is possible through entrepreneurship education as this could equip graduates with the requisite entrepreneurial skills for self-employment and job creation (Kusi-Mensah 2017; Gavigan 2021). In the Ghanaian context, entrepreneurship education at the higher education level is often approached as a course in the semester system delivered without any hands-on or experiential learning. Students are generally taught about entrepreneurship than becoming entrepreneurs (Kusi and Amponsah 2022; Addae and Nyarko 2023;) which, according to Mensah (2021), works against attempts to cultivate in students the innovative mindset for entrepreneurial pursuits. Despite several years of entrepreneurship education, data reveal that a considerable number of graduates continue to leave our universities in pursuit of jobs. Because of the situation in Ghana, officials and experts are questioning the effectiveness and impact of these initiatives (Asante 2021; Owusu and Mensah 2022).

1.3 Problem statement

Researchers worldwide have recognized the central role played by entrepreneurship in national economic development and improved standards of living through employment creation. For instance, Kusi-Mensah (2017) and Danquah, (2024) has argued that programmes in entrepreneurship studies would help solve the challenge of the absence of industrialization and job creation in Ghana. To him, if tertiary level students are particularly targeted for entrepreneurial skills and mindset development, their interest in entrepreneurship activities will be ignited. Recognizing the potential of Entrepreneurship Education to ignite entrepreneurial interest and activities in national economies, the government in Ghana have made various attempts at equipping students with entrepreneurial skills and attitude via the higher education system with the aim of increasing entrepreneurship

Despite the integration of entrepreneurship education (EE) into Ghana's higher education curriculum, particularly within technical universities, evidence suggests that its outcomes in terms of graduate entrepreneurial readiness, self-employment, and job creation remain limited (Kusi-Mensah, 2017; Owusu, Mensah & Anim, 2022). The persistent influx of graduates seeking employment in an already saturated labour market calls into question the effectiveness of existing entrepreneurship education frameworks in cultivating entrepreneurial intention (EI) and behavior (Gavigan, 2021; Agyekum, 2023).

Empirical studies linking EE and entrepreneurial outcomes have yielded inconsistent results. While several have reported positive relationships (Tantawy et al., 2021; Adeel, Daniel & Botelho, 2023; Otache et al., 2024), others have found weak or mixed effects

(Hahn et al., 2020). These variations suggest the presence of mediating or contextual factors that influence the extent to which EE shapes entrepreneurial intention. Prior research has explored mediators such as students' backgrounds (Zhang et al., 2023; Nabi et al., 2022), prior entrepreneurial experience (Singh et al., 2024; Bonesso et al., 2018), and contextual conditions (Rahaman et al., 2020; Ahadi & Kasraie, 2020; Raten & Leitão, 2022).

However, limited attention has been given to the role of practical learning orientations within students' academic majors - a crucial factor that may explain why entrepreneurship education produces varying impacts across different programs of study. Studies examining academic discipline and entrepreneurial intention (Park, 2017; Dao et al., 2021; Duong, 2022) have not fully considered how the practice-based or theory-based orientation of these programs mediates students' entrepreneurial development.

Drawing on experiential learning theory (Kolb, 2014), this study posits that students' exposure to practical learning environments - characterized by hands-on activities, projects, and simulations - enhances the translation of entrepreneurship education into entrepreneurial intention. The study therefore investigates the mediating role of Practical Learning in Programmes (PLP) in the relationship between entrepreneurship education and entrepreneurial intention among students of Takoradi Technical University.

1.4 Research questions

The research questions for the study are as follows:

1. To what extent do entrepreneurship education shape the personal attitudes of students towards entrepreneurship?
2. How does entrepreneurship education affect the subjective norms of students regarding entrepreneurship?
3. To what extent does entrepreneurial education influence students perceived behavioural control of entrepreneurship?
4. Does practical learning in students' programmes of study mediate the relationship between entrepreneurship course and their intentions towards entrepreneurship?

1.5 Research objectives

The study aims to assess the effects of entrepreneurship education on entrepreneurial intentions of the Takoradi Technical University (TTU) students in Ghana. It seeks to pursue the following specific objectives:

1. to determine the extent of entrepreneurship education in shaping the personal attitudes of students towards entrepreneurship;
2. to establish how entrepreneurship education affects the subjective norms of students regarding entrepreneurship;
3. to establish the extent to which entrepreneurship education influences students perceived behavioural control of entrepreneurship; and
4. to ascertain if practical learning in students' programmes of study mediate the relationship between entrepreneurship education and their intentions towards entrepreneurship.

1.6 Research hypotheses

1. H₀₁: Entrepreneurship Education (EE) has no significant impact on Attitude Toward Entrepreneurship (ATE).
2. H₀₂: Entrepreneurship Education (EE) has no significant impact on Subjective Norm (SN).
3. H₀₃: Entrepreneurship Education (EE) has no significant impact on Perceived Behavioural Control (PBC).
4. H₀₄: Entrepreneurship Education (EE) has no significant impact on Practical Learning in Programmes (PLP).
5. H₀₅: Practical Learning in Programmes (PLP) has no significant impact on Attitude Toward Entrepreneurship (ATE).
6. H₀₆: Practical Learning in Programmes (PLP) has no significant impact on Subjective Norm (SN).
7. H₀₇: Practical Learning in Programmes (PLP) has no significant impact on Perceived Behavioural Control (PBC).
8. H₀₈: Attitude Toward Entrepreneurship (ATE) has no significant impact on Entrepreneurial Intention (EI).
9. H₀₉: Subjective Norm (SN) has no significant impact on Entrepreneurial Intention (EI).
10. H₀₁₀: Perceived Behavioural Control (PBC) has no significant impact on Entrepreneurial Intention (EI).
11. H₀₁₁: Practical Learning in Programmes (PLP) has no mediating effect in the relationship between Entrepreneurship Education (EE) and Attitude Toward

Entrepreneurship (ATE).

12.H₀₁₂: Practical Learning in Programmes (PLP) has no mediating effect in the relationship between Entrepreneurship Education (EE) and Subjective Norm (SN).

13.H₀₁₃: Practical Learning in Programmes (PLP) has no mediating effect in the relationship between Entrepreneurship Education (EE) and Perceived Behavioural Control (PBC).

1.7 Research significance

This section presents the significance of the study in three dimensions. Firstly, the findings contained in this study will contribute to the evaluation of effectiveness of the entrepreneurship education in the TTU. Although the entrepreneurship courses have been taught in the university for over a decade, an assessment is yet to be conducted by the university to ascertain its effectiveness in influencing students' entrepreneurship intentions and behaviour. Consequently, this study will serve as basis for further research aimed at improving the way the course is taught in order to contribute to the university's drive at equipping students with business start-up abilities.

Finally, it will support government's efforts at tackling the issues of unemployment through entrepreneurship education in the country. This is particularly pertinent regarding the challenge of graduate unemployment that has persisted despite efforts and calls to equip students with the demands of industry. The findings and recommendations of this research will help identify the shortfalls in the pedagogy of the entrepreneurship course

with the goal of raising students' interest in setting their own enterprises for self-employment and to create job opportunities for others.

1.8 Delimitations

This study is purposed on examining the contributory role of entrepreneurship education in developing entrepreneurship inclinations of TTU students. The subject matter is, therefore, focused on an examination of the relationship that exists between students' experiences of entrepreneurship as a course and their propensity to start their own enterprises. It does not, therefore, include any entrepreneurship training, programmes and experiences that the participants of the study might have had prior to the study period or outside the course content. It further attempts to study the mediating role of practical learning embedded in students' programmes of study that may influence how the entrepreneurship course affects their intentions towards entrepreneurship.

Secondly, the study involved only undergraduate students pursuing the Bachelor of Technology (BTech) and Higher National Diploma (HND) programmes in the TTU. All students in these groups are expected to have participated in, at least, one course work in their time in the university. All other categories of students at the university including Master of Technology (MTech) and non-tertiary students are excluded from this research. Figures 1.1 and 1.2 respectively represent the locations of the Western Regions of Ghana (where TTU is located) and TTU where the study was carried out.

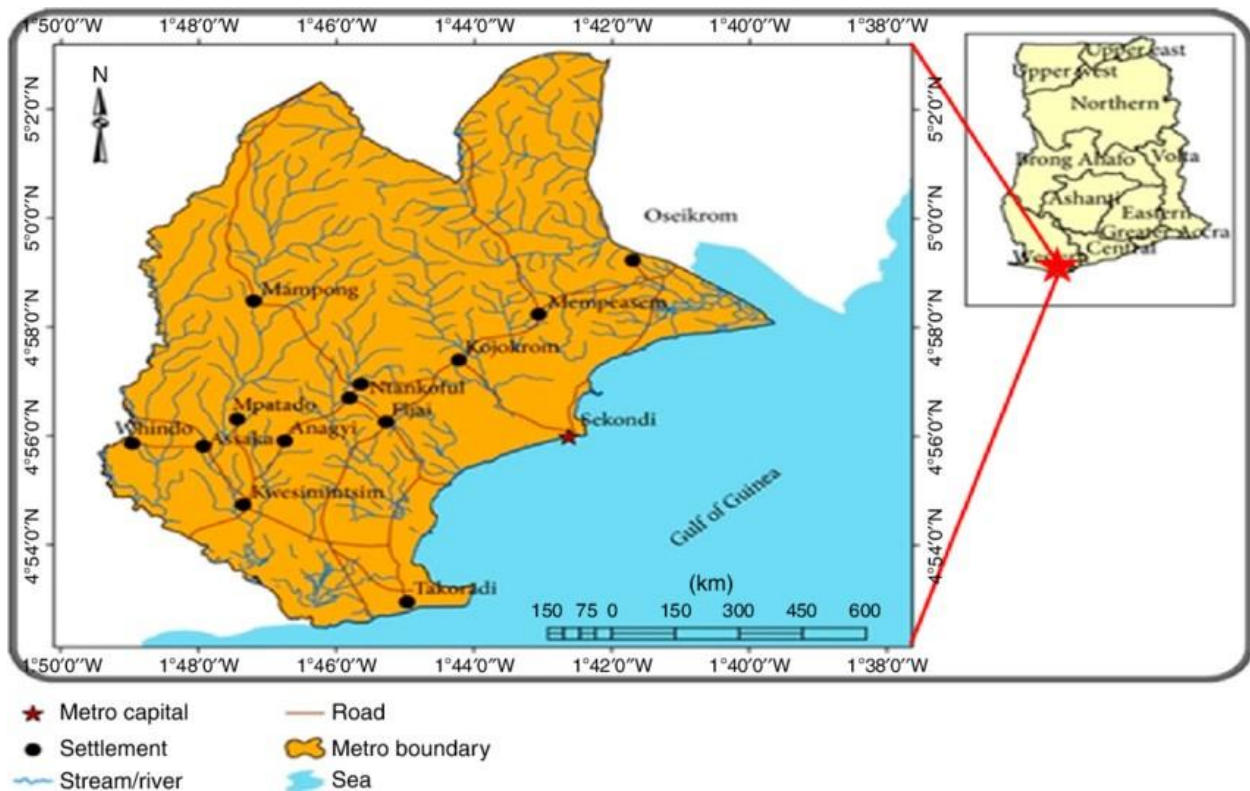


Figure 1.1 Location of Takoradi in the Republic of Ghana



Figure 1.2 Location of Takoradi Technical University in Takoradi, Ghana

1.9 Ethical considerations for this study

The appropriate ethical considerations have been adhered to in this research. First of all, a research proposal was written and approved by the rigorous channels of research quality units of the Durban University of Technology (DUT) at the departmental, faculty and institutional levels. This was followed by a process to protect the rights and identity of the respondents by the gatekeeper's letter from the TTU (as seen in Appendix 14). The respondents were not forced but rather requested to participate in the study. To ensure anonymity, particulars such as respondents' names, contact numbers, addresses and other information were not included in the questionnaire or the published research. To eliminate risks, the respondents were informed using the letter of information, prior to distribution and collection processes taking place. The letter of information for participants is indicated in Appendix 15. The participants were advised to complete their questionnaires anonymously, with the assurance that no personal information would be shared in any way, in order to protect their identities. This was outlined in a Letter of Consent (as seen in Appendix 13). Ethical Clearance (as seen in Appendix 1) was obtained for this research from the Institutional Research Ethics Committee of DUT (**IREC 276/22**) to proceed with the research process.

1.10 Thesis structure

This thesis is made up of six chapters presented as follows:

Chapter 1 captures the research overview. It presents entrepreneurship as an instrument for overcoming the numerous economic challenges and various suggestions in the

literature regarding the contributions of entrepreneurship education to boost entrepreneurship. Also in this chapter, entrepreneurship and entrepreneurship education in the Ghanaian setting was contextualized. Finally, the chapter presents the research problem statement, research questions, research significance as well as research scope.

Chapter 2 covers a description of Ghana's economic structure; Ghanaian small and medium-scale enterprises; graduate entrepreneurship and unemployment and higher education entrepreneurship education in Ghana.

Chapter 3 encapsulate the review of relevant literature on the research question. The chapter covers issues on definition of entrepreneurship, early thoughts and approaches on entrepreneurship; the intentionality and intention models of entrepreneurship; types, approaches and importance of entrepreneurship education and student entrepreneurship intentions. Finally, the chapter presents the research theoretical model and hypotheses.

Chapter 4 outlines the research methodological approaches. It covers the research approach, study population, techniques for sampling and instruments for data collection. It also contains a summary of the data analysis procedure.

Chapter 5 contains the research findings and interpretations of the study.

Chapter 6 captures the research conclusions and recommendations for further research on the subject matter.

1.11 Conclusion

An overview of the research has been presented in this chapter, while the study's background information has also been described. The problem statement of the study has been clearly defined, as well as the research questions, objectives and aim of the study. The study's significance and delimitations have also been presented. The next chapter aims to provide the study's theoretical underpinnings through an examination of the related literature.

CHAPTER 2

THE ECONOMY OF GHANA AND THE ENTREPRENEURSHIP LANDSCAPE

2.1 Introduction

With an overview of the research presented in the previous chapter, this chapter of the thesis presents a description of Ghana's economy in the context of entrepreneurship and employment. It seeks to present a brief history and general structure of the Ghanaian economy regarding the service, industrial and agriculture sub-sectors; Small and Medium-Scale Enterprises (SMSE) and institutional support for start-ups; graduate employment and entrepreneurship; as well as entrepreneurship education in the country.

2.2 Historical background of the Republic of Ghana

Ghana is located on the west coast of Africa along the Gulf of Guinea, close to the equator. It shares borders with Côte d'Ivoire to the west, Burkina Faso to the north, Togo to the east and the Atlantic Ocean (Gulf of Guinea) to the south. Ghana is positioned just a few degrees north of the Equator, giving it a tropical climate. Its prime meridian (longitude 0°) passes through the eastern part of the country, making it one of the few countries in the world situated on both the prime meridian and near the equator. The capital city, Accra, is located on the southern coast, facing the Gulf of Guinea. Ghana's political history and economic background are deeply intertwined, reflecting a journey through pre-colonial kingdoms, colonial exploitation, independence, economic struggles and gradual stabilization. Herewith an overview:

Pre-colonial period (Before 15th Century): Ghana's political organization began with powerful, centralized states, including the Ashanti Empire, the Kingdom of Dagbon and

other Akan states. These societies had complex political systems led by kings and chiefs and were known for wealth, particularly in gold. The Ashanti Kingdom (present-day Kumasi region) was the most powerful of these empires, renowned for its centralized administration, military prowess and trade networks.

Colonial era (15th-20th Century): Starting in the late 15th century, European powers, including the Portuguese, Dutch and the British established forts and trading posts along the coast, primarily for the gold and slave trades. British influence eventually grew dominant and by 1874, the British formally declared the coastal region as the "Gold Coast" colony, while gradually annexing the Ashanti region and the Northern Territories by the turn of the 20th century. Colonial rule centralized political power under British authority, disrupting traditional political structures and reshaping Ghanaian society.

Struggle for independence (1940s-1957): By the 20th century, educated Ghanaians and nationalist movements began to push for political reforms and independence. Key figures, including Kwame Nkrumah, emerged during this period. Nkrumah's Convention People's Party (CPP), formed in 1949, rallied for self-government and gained massive support. After several successful strikes, boycotts and elections, Nkrumah led Ghana to independence on March 6, 1957, making it the first sub-Saharan African country to gain independence from colonial rule.

Post-independence political turbulence (1957-1992): Kwame Nkrumah became Ghana's first Prime Minister and later President. He pursued ambitious development projects but

faced economic challenges, leading to dissatisfaction. In 1966, Nkrumah was overthrown in a military coup, marking the start of a series of military and civilian governments over the next two decades. Ghana experienced frequent coups, economic instability and periods of authoritarian rule, including the leadership of flight lieutenant Jerry John Rawlings, who staged coups in 1979 and 1981.

Transition to democracy (1992-present): In 1992, after a decade of Rawlings-led military rule, Ghana transitioned to democratic governance with the adoption of a new constitution and the establishment of the Fourth Republic. Since then, Ghana has held regular (four-year cycle), peaceful and transparent elections, with power transitioning smoothly between the two main parties: the National Democratic Congress (NDC) and the New Patriotic Party (NPP). Ghana's political stability and commitment to democracy have made it a model for peaceful democratic governance in Africa.

Economic Background

Ghana's economy has evolved significantly, influenced by its natural resources, colonial history and post-independence development policies.

Pre-colonial economy: In the pre-colonial era, Ghana's economy was predominantly agrarian, centred on subsistence farming, artisanal production, and vibrant local and regional trade. Gold, particularly abundant in the Akan kingdoms, served as a major economic asset that attracted extensive trans-Saharan trade and positioned the region as a hub of commerce and innovation. Economic activities were largely community-based

but entrepreneurial in nature - driven by barter, craft specialization, and small-scale enterprise that fostered self-sufficiency and trade-oriented mindsets. This indigenous entrepreneurial culture demonstrated strong local initiative and resourcefulness long before colonial economic structures were imposed. However, these early systems of production and trade were later disrupted and overshadowed by colonial economic policies that redirected enterprise away from local development toward external interests.

Colonial economy (15th Century-1957): During the colonial era, Ghana's economy was reoriented toward export-driven production designed primarily to serve British economic interests. Cash crops such as cocoa, introduced in the late 19th century, became the dominant export, while gold mining expanded under foreign ownership. Infrastructure developments - railways, ports, and administrative centres - were established mainly to facilitate resource extraction rather than promote indigenous enterprise or local industrial capacity. This externally oriented economic structure limited opportunities for local innovation and entrepreneurship, entrenching a dependency mindset that undervalued self-employment and domestic production. The colonial legacy, therefore, not only shaped Ghana's economic trajectory but also contributed to the weak entrepreneurial orientation that post-independence governments have since sought to reverse through education and policy reform.

Post-independence economic policies and challenges (1957-1980s): Following Nkrumah's ousting, successive governments grappled with persistent economic difficulties, including high inflation, declining productivity, rising debt, and widespread

unemployment. The absence of a strong entrepreneurial culture further weakened the economy's capacity for innovation and job creation. Political instability compounded these challenges, stifling private sector growth and the development of entrepreneurial mindsets that could have diversified Ghana's economic base. Consequently, through the 1970s and 1980s, Ghana's economy stagnated, highlighting the long-standing need for entrepreneurship-oriented education and policy interventions to build self-employment capacity and stimulate sustainable economic growth.

Structural Adjustment and Economic Reforms (1980s-2000s): In the 1980s, under the leadership of Jerry Rawlings, Ghana embarked on a series of economic reforms supported by the World Bank (WB) and International Monetary Fund (IMF), collectively known as the Structural Adjustment Programmes (SAPs). These reforms sought to stabilize the economy through fiscal discipline, trade liberalization, and the promotion of private sector-led growth. Although the SAPs helped restore macroeconomic stability and stimulated expansion in key sectors such as agriculture, mining, and services, they also reduced public sector employment and weakened state support for social services. Consequently, many Ghanaians were compelled to seek alternative livelihoods in the informal and entrepreneurial sectors. This shift, albeit born of necessity, marked an important transition in Ghana's economic structure - from reliance on public employment toward greater recognition of entrepreneurship as a means of survival and self-reliance. By the early 2000s, with relative stability restored, national attention increasingly turned to policies and educational initiatives that could nurture entrepreneurial skills and mindsets to sustain inclusive growth.

Modern economic developments and oil boom (2000s-present): The discovery of offshore oil in 2007 marked a new phase in Ghana's economic development. Oil production began in 2010, positioning the country among the leading oil producers in sub-Saharan Africa. Alongside oil, traditional sectors such as cocoa, gold, and other natural resources continue to anchor the economy. In response, the government has sought to diversify economic activity by promoting investments in infrastructure, agriculture, technology, and services. Despite these efforts, persistent challenges such as poverty, youth unemployment, and unequal access to economic opportunities remain. These conditions have underscored the need for a more entrepreneurship-driven growth model - one that fosters innovation, self-employment, and value addition across sectors. Consequently, national initiatives have increasingly emphasized entrepreneurship education and private-sector development, particularly through Technical Universities, as strategic mechanisms for equipping graduates with practical skills, entrepreneurial mindsets, and job-creating capacities essential for sustaining inclusive and resilient economic growth.

Ghana's current economic position: Today, Ghana's economy is relatively diversified yet remains heavily dependent on the export of gold, cocoa, and oil, making it susceptible to global price fluctuations. Recognizing the limitations of this dependence, the government has intensified efforts toward industrialization, technological advancement, and entrepreneurship as strategic pathways for job creation and sustainable growth. Policies promoting entrepreneurship education, innovation hubs, and start-up support reflect a growing emphasis on developing human capital with entrepreneurial capabilities rather

than reliance on traditional employment channels. Ghana's stable democracy has further enhanced investor confidence, creating a favourable environment for private-sector expansion and youth enterprise development. Within this broader transformation, Takoradi's evolution from a small fishing community to a vital port city illustrates the changing economic landscape - its oil, gas, and service industries now serving as key drivers of regional growth and potential catalysts for entrepreneurial opportunities. As such, Technical Universities like Takoradi Technical University play a pivotal role in equipping students with practical learning experiences and entrepreneurial mindsets aligned with these emerging sectors. The location of Ghana in Africa is shown in Figure 1.3 below.



Figure 1.3 Location of Ghana in Africa

Source: WorldAlas.com (2024)

2.3 Ghana's economic structure

Ghana operates a market-based economy: trade and investment face low barriers regarding industry entry. The economy is commonly classified into three structural sectors based on their contributions to employment, Gross Domestic Product (GDP) and trade. These include the services, agricultural and industrial sectors. As of 2024, agriculture employed 44.7% of the 30 million-strong population, making it the country's largest employer, although accounting for 29.5% of GDP in 2023, according to the Ghana Statistical Services (GSS). Services accounted for 47.2% of GDP and 43.2% of the workforce in 2023, while industry accounted for 34.2%. Agriculture contributes around 18.6% of total GDP in 2024 .

2.3.1 The services sector

The services sector of Ghana's economy is by far the most diverse, with 11 sub-sectors: public administration and defense, professional, administrative and support service activities; real estate; education; social security; trade, hotels and restaurants; transportation and storage; vehicle repair and household goods; insurance and financial activities; information and communication; health and social works; and other service activities. In the second quarter of 2023, the services sector was the highest contributor (47.2%) to Ghana's GDP, contributing 19 billion Ghana Cedis (approximately 1.3 billion US dollars) to Ghana's GDP. The expansion in the services sector was influenced mostly by the information and communication sub-sector (33.1%); hotels and restaurants (4.3%); financial and insurance activities (2.4%). The education sub-sector experienced a negative growth (-3.7%).

The telecommunications sector in Ghana covers internet services, telephony services and television and radio network services. According to the WB data, telecommunications is Ghana's biggest economic industry, owing to the country's open attitude towards information and communications technology (ICT) (GSS 2020). Among the major investment sectors, ICT accounts for 65%, communications for 8% and public administration accounts for 27% (International Trade Administration, 2022). Scholars such as Aryeetey and Baa-Boateng (2020) have attributed the rapid growth in the service sector to transformation in Ghana's economy that is reflective in the increasing modernization and expansion in financial technology (Fintech), trade and mobile telecommunications.

The relevance of the services sector growth in fostering entrepreneurship in Ghana has been highlighted by scholars. For instance, Amankwah-Amoah et al. (2018) have observed that there is increasing entrepreneurial support services in the form of business training programmes, incubators and governmental initiatives to foster entrepreneurial activities. Key areas in entrepreneurship in the services sector are ICT and telecommunications (e.g., digital marketing, online retailing and financial technology), financial services, especially for the unbanked and rural populace (Osei-Assibey 2017; Yawson *and* Mahmoud 2024), and tourism and hospitality (including tour services, restaurants and hotels (Amoako et al. 2024).

2.3.2 The agriculture sector

Crop, livestock, forestry and logging and fishery are the four sub-sectors of the agriculture sector. The agricultural industry has lost its status as a key contributor to GDP to the services sector due to a lack of appropriate coordination and integration in the agricultural value chain. The agricultural sector is mostly subsistence-based, consisting of 80% crop cultivation, 10% livestock, poultry and fisheries output and 10% forestry (GSS 2024). In 2024, the industry employed around 39.74% of the country's workers and contributed approximately 22.2% of GDP. According to statistics from the Ghana Statistical Services (GSS 2024), Ghana saw modest agricultural growth in the first half of 2024 when compared to the same period in 2023. In 2024, the industry increased by 5.4% on average from January to June, compared to 8.9% in 2023. According to the GSS (2024), the highest growth by sector was the fishing sub-sector; the least was the forestry sub-sector. More than half of Ghana's population are employed in the agriculture, forestry and fishing sectors.

Despite these shifts, agriculture remains vital to Ghana's economy, especially in rural areas where it employs a significant portion of the population. The sector's performance has shown variability; for instance, in the second quarter of 2024, agriculture grew by 5.4%, while the cocoa sub-sector contracted by 26.2% due to challenges such as disease and adverse weather conditions (GSS 2025).

To address these challenges and revitalize the sector, the Ghanaian government has allocated GH¢3.32 billion for the fiscal year 2024 to initiatives like the Planting for Food

and Jobs Phase II (MFA 2024). Such investments aim to enhance productivity, ensure food security, and reduce unemployment, particularly in rural areas.

In summary, while Ghana's agricultural sector has seen a relative decline in its contribution to GDP and employment, it remains a cornerstone of the economy. Continued investments and strategic policies are essential to address current challenges and harness the sector's full potential.

2.3.3 The industrial sector

As of 2024, Ghana's industrial sector has experienced significant growth, becoming a pivotal component of the nation's economy. Traditionally centered on the extraction and processing of raw materials - such as gold, bauxite, oil, timber, and cocoa - the sector has seen a strategic shift towards value addition to reduce reliance on primary commodities. This transition aligns with government policies aimed at industrial diversification and economic resilience.

Economic Performance and Sectoral Contributions

In 2022, Ghana's economy expanded by 5.7%, a notable increase from the revised 3.1% growth in 2021. This robust performance was largely driven by the industrial sector, particularly the extractive industries. The mining and quarrying sub-sector, especially gold mining, played a significant role in this growth (Trade Data Monitor, 2023).

The industrial sector encompasses five key sub-sectors: mining and quarrying, manufacturing, electricity, water and sewerage, and construction. As of the second

quarter of 2022, the manufacturing sector contributed approximately 4.7 billion Ghanaian cedis (GHS) to the country's GDP (Ametepey et al. 2022). This reflects the sector's substantial role in the nation's economic framework.

Mining and Quarrying

Mining and quarrying remain central to Ghana's industrial activities, with gold production leading the sector. In 2023, Ghana produced approximately 4.2 million ounces of gold, accounting for about 4% of the world's total output. Gold exports in 2022 represented approximately 12.3% of Ghana's GDP (World Bank nd). The sector also emerged as the largest source of domestic tax revenue in 2023, contributing a record GH¢11.55 billion (US\$980 million) in taxes.

Manufacturing and Construction

The manufacturing sub-sector has shown resilience, contributing significantly to industrial production. The government's "One District, One Factory" (1D1F) initiative continues to promote industrialization by establishing factories across various districts, fostering local employment, and enhancing value addition. The construction industry has also been robust, supported by infrastructure development projects and urbanization trends.

Petroleum Industry Developments

Ghana has ambitious plans to become a leading oil refining hub in West Africa. The proposed "Petroleum Hub" project in Jomoro aims to establish a vast industrial complex with three oil refineries totaling a capacity of 900,000 barrels per day, alongside

petrochemical plants and storage facilities. This project, estimated at \$60 billion and expected to be financed by private investors, could create approximately 800,000 jobs and significantly boost the GDP by 70%, potentially meeting 50% of West Africa's fuel demand by 2030-2035 (Le Monde 2024)

2.3..3.1 Challenges and Opportunities

Despite these advancements, the industrial sector faces challenges, including securing adequate financing, addressing regulatory and bureaucratic hurdles, and enhancing access to technology and innovation. Addressing these issues is crucial for sustaining industrial growth and maximizing the sector's contribution to the economy.

In summary, as of 2024, Ghana's industrial sector has solidified its position as a cornerstone of economic growth. With ongoing efforts to diversify and add value, coupled with strategic initiatives like the Petroleum Hub, the sector is poised to drive sustainable development and industrialization in the coming years

2.4 Entrepreneurship and Small and Medium-Scale Enterprises in Ghana

Small and Medium Enterprises (SMEs) play a pivotal role in Ghana's economy, constituting approximately 92% of all registered businesses and contributing about 70% to the nation's Gross Domestic Product (GDP) (Ministry of Finance Ghana, 2024). They also account for 85% of manufacturing employment (Business and Financial Times 2024). The informal sector, which encompasses a significant portion of these SMEs, had an estimated untaxed GDP of USD 51 billion in 2023 (SECO 2024).

Recognizing the critical role of SMEs, the Ghanaian government has launched initiatives to bolster their growth and development. For instance, the "One District, One Factory" (1D1F) programme aims to establish factories in each district to promote industrialization and job creation. Additionally, the Development Bank Ghana, in collaboration with international partners, has introduced financing Programmes to support SME expansion and sustainability (Ministry of Finance, 2024). These efforts underscore the importance of SMEs in driving economic growth, innovation, and employment in Ghana.

Entrepreneurship in Ghana generally prevails in SMEs that engage in agriculture, ICT, manufacturing, trade and the services sectors that are contributing immensely to promoting job creation, diversification of the economy and innovation (Tsatsenko 2020; Quaye et al. 2024). Amankwah-Amoah et al. (2022) have observed that start-ups in Ghana are prevalent among young entrepreneurs mostly in the areas of e-commerce and technology and that most of them are engaged in innovative businesses in digital banking, mobile money businesses and logistics. Start-ups by the youth are characteristically disruptive and spanning businesses across both formal and informal enterprises and employing fewer than 100 people (Amankwah-Amoah et al. 2023)

2.5 Start-up and SME challenges in Ghana

SMEs account for more than 90% of business in the informal sector and plays an immense role in addressing the challenge of unemployment in Ghana (MOFEP 2024; Baah-Boateng, 2021),. Despite this contributory role in Ghana's economic development, SMEs encounter numerous challenges as seen in the following discussion.

2.5.1 Access to finance

Access to finance remains one of the most persistent challenges confronting SMEs and start-ups in Ghana (Gyamfi et al., 2023). Gyamfi and colleagues observed that the major financial barriers include prohibitively high interest rates from commercial banks - sometimes reaching 30 percent - and stringent collateral requirements that many small businesses are unable to meet. As a result, a significant number of start-ups are excluded from formal credit systems. Although the development of Ghana's venture capital and angel investment ecosystem offers a promising alternative, it remains nascent and insufficiently structured to meet the scale of financing demand. Consequently, many entrepreneurs turn to informal or alternative financing channels such as microfinance institutions, savings groups, and crowdfunding platforms to support their business growth (Acquah & Osei, 2021; Yensu et al., 2024).

2.5.2 Regulatory bottlenecks

Start-ups and SMEs further face impediments in Ghana's regulatory environment. According to Aryeetey et al. (2022), despite efforts of government to ease the processes of registering businesses in Ghana, the regulatory environment still poses bottlenecks to SMEs and star-ups. These challenges include struggles of businesses to understand and fulfil their tax obligations as well as delays in processing licenses and permits.

2.5.3 Underdeveloped infrastructure

SMEs also face the challenge of inadequate infrastructure especially as regards transportation, reliable energy supply and digital infrastructure. This is a country-wide

challenge that works to undermine the growth and development of start-ups and SMEs. Electricity power instability as Osei-Assibey (2022) pointed out has led to operational losses for SMEs and increased costs making them less profitable.

2.5.4 Access to market

Stiff competition from both local and international firms have made doing business in Ghana difficult (Bosso et al 2023). The open market system of Ghana's economy provides no protection for local firms from cheaper imported goods, particularly from China. According to Ackah and Mensah (2021), this renders local start-up firms uncompetitive especially in the retail sector.

2.6 Institutional support for start-ups and entrepreneurship development

Currently, there are several initiatives being implemented by the Ghanaian government to support start-up and SME growth and development. The overarching institution for entrepreneurship development from government has been the National Entrepreneurship and Innovation Plan (NEIP) which was launched in 2017 to provide training, funding and mentorship to young entrepreneurs and start-ups. Other governmental support includes the One District, One Factory (1D1F) policy that was launched in 2017 to promote industrialization by setting up factories in every district of the country. According to Osei and Adusei (2022), this policy provided critical support to SMEs in the agro-processing and manufacturing sectors.

This initiative provides entrepreneurial start-up opportunities especially to the youth. Another initiative by the government has been the Ghana Enterprises Agency (GEA),

formerly known as the National Board for Small Scale Industries (NBSSI). It provides training, business advisory services and access to finance for SMEs. Quartey and Abor (2021) observed that the GEA has been pivotal in formalizing informal sector businesses and providing a platform for SMEs to scale their operations. Building on these national efforts, there has been an increased call for higher education institutions to integrate entrepreneurship courses into their programmes, ensuring that students develop the competencies and mindsets needed to participate effectively in Ghana's evolving entrepreneurial ecosystem. This alignment between national entrepreneurship policy and higher education curriculum reform has become critical for addressing graduate unemployment and promoting innovation-driven growth. Consequently, many universities have integrated entrepreneurship education into their curricular thus providing entrepreneurship centres on campus for the purpose of cultivating entrepreneurial mindset in students. According to Owusu and Boateng (2022), such programmes have overall been successful although the exercise generally lack practical exposure.

The private sector including international agencies have also been supportive with programmes for entrepreneurship development in Ghana. For instance, the MasterCard Foundation has embarked on a mission to create 3 million jobs for young people through their Young Africa Works project. MasterCard has also partnered with the Kosmos Innovation Centre to train the next generation of young agriculture entrepreneurs. Similarly, the Tony Elumelu Foundation runs an entrepreneurship programme meant for providing funding, training and networking opportunities for graduate entrepreneurs.

Gyamfi and Osei (2022) have observed that these private interventions are more assessable for prospective entrepreneurs than government initiatives.

In a nutshell, the literature on start-ups and SMEs in Ghana highlights the central role these businesses play in the country's economic development, particularly in terms of job creation, innovation, and poverty reduction. However, the challenges of access to finance, regulatory hurdles, infrastructure deficiencies, and skills gaps continue to limit their growth. While government and private sector support is increasing, more targeted.

2.7 Graduate unemployment and entrepreneurship

In Ghana, graduate unemployment in Ghana is a perennial canker as the annual mass of students that universities churn out far outnumber the available job vacancies to employ them. Studies by Boateng and Osei (2022) and Ansah et al. (2025) indicate that the unemployment rate among university graduates has been steadily increasing, with estimates showing that about 50% of graduates remaining unemployed. The often cited complaints of industry players have to do with the fact that the majority of graduates have often majored in social sciences programme and lack the requisite employable skills in available job opportunities (Baah-Boateng 2016; Mensah and Oppong 2021; Boateng and Osei 2022). Another contributory factor to the spectacle of graduate unemployment is attributable to Ghana's economic structure which is largely dependent on agriculture and informal businesses. The jobs available in these sectors are typically for lowly educated persons (Aryeetey and Baah-Boateng 2017; Acquah et al. 2024) and do not

require the training and education acquired by these graduates (Ghana Statistical Service 2020).

Over the years, the government of Ghana has rolled out a number of programmes and policies that are geared towards addressing the problem of graduate unemployment. Notable among these are the National Youth Employment Programme (NYEP) launched in 2006, the Youth Enterprise Support (YES) initiative in 2014, and its successor, the National Entrepreneurship and Innovation Programme (NEIP) established in 2017. Other initiatives such as Ghana CARES (Obaatanpa Programme) and various TVET reforms have also sought to promote self-employment, enterprise creation, and skills development among young people. However, the results of these programmes have failed to provide a sustained solution to the problem due to the skills mismatch and the nature of Ghana's economic structure (Boateng and Ofori 2020; Nyarko and Adu-Gyamfi 2021). As a result, there is a need for enduring policy interventions, particularly, reforms in the education system that should focus on a collaborative partnership between educational institutions and industry players to align curricula with industry demands. More importantly, efforts should be made by government to encourage graduate self-employment and employment creation by promoting technical and vocational training. As suggested by Amankrah (2021), government must put in efforts to diversify the economy and support the formal sector to absorb the teaming graduates.

In response to this issue, entrepreneurship is increasingly viewed as a viable pathway for addressing graduate unemployment in Ghana. Entrepreneurship has the potential to

stimulate job creation, economic development and innovation, especially when traditional job markets are saturated. Scholars argue that entrepreneurship can provide graduates with an alternative route to economic participation, enabling them to create self-employment opportunities rather than relying solely on the availability of formal jobs (Owusu-Ansah and Mensah 2021). However, transitioning graduates into entrepreneurial roles requires a supportive educational framework that fosters the necessary entrepreneurial skills, mindset and intentions.

2.8 Conclusion

Ghana's economic structure provides a diverse landscape for entrepreneurial growth, with potential opportunities across the services, agriculture and industrial sectors. While entrepreneurship is seen as a solution to some of the country's pressing economic challenges, including graduate unemployment, there are significant structural and institutional barriers that need to be addressed. Institutional support for entrepreneurship and targeted initiatives can help mitigate these challenges and foster a more robust entrepreneurial ecosystem. This context presents a fertile setting for entrepreneurship considering the vast worth of natural and human resource potentials, business development opportunities and the need for employment generation brought on by the challenge of youth unemployment in Ghana. The next chapter presents the theoretical framework and literature review that discusses entrepreneurship and entrepreneurship education in both local and global perspectives.

CHAPTER 3

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

3.1 Introduction

This chapter presents the study's theoretical framework and literature review on entrepreneurship and entrepreneurship education. It includes with a discussion on the study's conceptual framework. The theoretical review addresses existing theories that serve as foundation blocks upon which the entrepreneurship function is built and covers early thoughts of entrepreneurship including the classical, neo-classical and neo-Austrian views on entrepreneurship. Furthermore, relevant literature on entrepreneurship is reviewed covering the intentionality of entrepreneurship as a planned behaviour, key entrepreneurial intention models, entrepreneurship education approaches, entrepreneurship education and student entrepreneurial intentions. Lastly, the chapter presents the conceptual framework and hypotheses development for the study.

3.2 Entrepreneurship

The concept of entrepreneurship has evolved significantly, shifting from a narrow focus on business creation and profit generation to a broader view encompassing economic development, innovation and societal transformation. Entrepreneurship has been defined variously by experts in the field. The definition of the concept is originally presented by early economists Richard Cantillon and Jean-Baptiste Say. According to Cantillon (1755), an entrepreneur is a bearer of risk by buying at a price that is certain and selling at a price that is uncertain. According to Say (1803: cited in Zhang et al. 2024) entrepreneurship is about shifting resources from areas of lower productivity to a higher place. Gavigan

(2021) has viewed entrepreneurship as a dynamic process through which individuals identify and exploit opportunities, mobilize resources and create value.

The literature emphasizes that entrepreneurship is multifaceted, involving aspects such as innovation, risk-taking and value creation, while also varying in its expression across different contexts, such as social, digital and environmental entrepreneurship. From the perspective of innovation and disruption, Nambisan (2017) follows the perspective of Schumpeter (1954, cited in Henrekson *and* Johansson 2022) to define entrepreneurs as those who take advantage of innovations to create new markets by disrupting existing markets. Contemporary conceptions of entrepreneurship relate to the digital economy and inclusive and collaborative processes. Digital entrepreneurship involves the creation and pursuit of entrepreneurial opportunities through the adoption of technological innovations (Kraus et al. 2019). It is defined by the incorporation of digital technologies into entrepreneurial processes, allowing individuals to recognize and capitalize on opportunities within the digital environment (Chen et al., 2023; Gomes and Lopes, 2023). Entrepreneurship, as a dynamic process through which individuals identify and exploit opportunities, mobilize resources, and create value, has been the subject of extensive research in recent years. Schallmo et al. (2024) highlight the role of digital transformation in entrepreneurship, emphasizing how digital tools enable entrepreneurs to innovate and adapt in rapidly changing markets. Their work underscores the importance of integrating digital strategies to enhance business models and achieve sustainable growth.

Gupta, George, and Fewer (2024) introduce the concept of mission-driven entrepreneurship, where ventures align financial success with positive societal impact. They argue that addressing global challenges requires a collaborative ecosystem involving government, academia, investors, and industry partners. This approach emphasizes the creation of value beyond profit, focusing on societal transformation and the common good.

Baker (2025) provides a critical perspective on the entrepreneurial work ethic, examining its evolution and implications in contemporary culture. He traces the shift from an industrious work ethic to an individualistic, competitive entrepreneurial mindset, highlighting the pressures and challenges associated with this paradigm. Baker suggests that while entrepreneurialism fosters innovation, it also necessitates a balance to prevent worker exploitation and burnout

The following review explores key developments in contemporary entrepreneurship literature, highlighting the latest insights on entrepreneurial traits, opportunity recognition and the role of innovation and the emerging forms of entrepreneurship.

3.2.1 Entrepreneurial Traits and Competencies

Entrepreneurship research traditionally focused on individual traits, such as risk tolerance, creativity and resilience as core characteristics of successful entrepreneurs. However, recent studies argue for a more nuanced understanding of entrepreneurial competencies, emphasizing adaptability, social capital and emotional intelligence.

Studies by Alotaibi and Badawi (2023) show that entrepreneurs with strong social networks and adaptability are more successful in volatile environments. In their view, emotional intelligence is recognized as essential for entrepreneurial success as it allows entrepreneurs to better manage stress, build relationships and navigate complex challenges. This shift from fixed traits to competencies reflects an understanding of entrepreneurship as a process requiring both inherent qualities and learned skills, enabling entrepreneurs to respond to evolving market dynamics.

3.2.2 Opportunity Recognition and Creation

Opportunity recognition is a foundational element of entrepreneurship, with recent literature distinguishing between opportunity recognition and opportunity creation. Traditionally, opportunity recognition was perceived as identifying market gaps based on existing demand. However, Sarasvathy (2001,2021) emphasizes that some entrepreneurs actively create opportunities by reshaping market structures and generating demand for novel products or services. Recent empirical studies support the view that both opportunity recognition and creation are critical for entrepreneurial success, with the choice between the two depending on industry conditions, market dynamics and the entrepreneur's skill set (Nafukho and Mansour 2025; Taleb, Hashim, and Zakaria 2023). This duality highlights the complex nature of entrepreneurial opportunities, where entrepreneurs act as both discoverers and creators in their markets.

3.2.3 Innovation and Entrepreneurship

Innovation is increasingly recognized as a central aspect of entrepreneurship, particularly in a knowledge-driven global economy. According to Schilling (2017), innovation distinguishes entrepreneurship from mere business activity by introducing novel solutions that drive competitive advantage and market growth. Recent studies explore how entrepreneurs leverage technological advancements, such as artificial intelligence, blockchain and big data to innovate and disrupt traditional industries. Furthermore, innovation-driven entrepreneurship is linked to economic growth as it enhances productivity and creates high-quality jobs (Vlasova *and* Saprykina 2024). However, scholars emphasize that innovation is context-dependent, with successful innovation varying by industry, culture and market conditions (Foss and Saebi 2018; Khurana *and* Dutta 2021; Donaldson et al. 2023). Thus, contemporary entrepreneurship literature underscores the need for entrepreneurs to align innovative efforts with local and global market demands.

3.2.4 Social and Sustainable Entrepreneurship

The emerging fields of social and sustainable entrepreneurship have expanded the traditional view of entrepreneurship to include objectives beyond profit maximization. Social entrepreneurship aims to address societal challenges, such as poverty, education and healthcare by creating ventures that prioritize social impact. Sustainable entrepreneurship, on the other hand, focuses on environmental goals, aiming to reduce carbon footprints, minimize waste and promote eco-friendly practices. Researchers note that social and sustainable entrepreneurs often face unique challenges, including funding

constraints, limited access to skilled labor, and regulatory hurdles (Lindenwood University, 2023; Reuters, 2024; FasterCapital, 2023). Yet, these forms of entrepreneurship are gaining traction, with increasing support from governments, non-profit organizations and impact investors committed to addressing pressing social and environmental issues. The growing recognition of social and sustainable entrepreneurship reflects a shift towards viewing entrepreneurs as agents of societal change, balancing economic goals with social responsibility.

3.2.5 Digital Entrepreneurship

The rise of digital technology has given rise to digital entrepreneurship, a concept that encompasses online-based ventures, digital platforms and tech-enabled business models. Digital entrepreneurship differs from traditional entrepreneurship by leveraging digital tools, platforms and ecosystems to create value and scale quickly. Scholars argue that digital entrepreneurship democratizes access to entrepreneurial opportunities as it lowers barriers to entry and provides global reach with minimal capital investment (Elia et al. 2020). However, digital entrepreneurs must navigate rapid technological changes, cybersecurity risks and intense global competition. Studies by Hsieh and Wu (2019) reveal that digital entrepreneurship not only disrupts traditional business models but also challenges regulatory frameworks, requiring policymakers to adapt to new forms of digital economic activities. Digital entrepreneurship is thus redefining the landscape of entrepreneurship by enabling new types of ventures and reshaping global markets.

3.2.6 Entrepreneurial Ecosystems and Support Mechanisms

Entrepreneurial ecosystems - comprised of supportive networks, financial institutions, educational institutions, government policies and cultural attitudes - play a critical role in fostering entrepreneurship. The literature stresses the importance of ecosystem support in enabling entrepreneurs to access resources, networks and mentorship, which are essential for venture growth and sustainability (Stam 2019; Yani and Zaakiyyah 2024). Strong entrepreneurial ecosystems provide a conducive environment that encourages innovation, lowers barriers to entry and supports venture scaling. Studies indicate that entrepreneurial ecosystems are highly context-dependent, with variations across regions and countries, influenced by factors such as local policies, industry concentration and community support (Cavallo et al. 2019; Khurana and Dutta 2021). Scholars advocate for ecosystem-based approaches in entrepreneurship development, emphasizing the need for policies and initiatives that address local market needs, infrastructure and cultural dynamics.

3.3 Theoretical framework

This study is shaped on three major schools of thought revealing the historical evolution of entrepreneurship over time and contributed to our understanding of the entrepreneur's role in the economy. This section begins with early thoughts on entrepreneurship which can be traced back to classical economists like Adam Smith, Jean-Baptiste Say and Richard Cantillon, who viewed entrepreneurs primarily as risk-takers and coordinators of production factors. The first to be addressed is the classical perspective which emphasized the entrepreneur's function in creating economic value and managing

resources. Moving forward, the neo-classical view of entrepreneurship emerged, focusing on the entrepreneur's role in market equilibrium and resource allocation within a perfectly competitive environment. This perspective often downplayed the uniqueness of entrepreneurial activities by integrating them into broader economic models. Lastly, the neo-Austrian thought on entrepreneurship, championed by scholars such as Joseph Schumpeter and Israel Kirzner, introduced a dynamic and innovative dimension to entrepreneurship. They highlighted the entrepreneur's role as an innovator and a market disequilibrium agent, emphasizing creative destruction and the identification of opportunities as central to economic development. Together, these theoretical perspectives provide a rich foundation for understanding the multifaceted nature of entrepreneurship and its impact on economic growth. These perspectives are discussed in the following sections.

3.4 Early Thoughts on Entrepreneurship

The earliest scientific thought about entrepreneurship as a function within the economic system is attributable to Richard Cantillon (1680-1734) to whom the word 'entrepreneurship' is credited. Cantillon specifies three types of actors in his economic theory: (a) those who provide capital (landowners); (b) those who provide labour for wage returns; and (c) the entrepreneur. Cantillon's economic system is envisioned as one that regulates itself in a mutual beneficial relationship of these actors. This system depends on the entrepreneur since he coordinates these mutual exchanges that determine the success of the economy. This he does by ensuring that demand and supply of goods and services are at an equilibrium through purchasing at a given price which is certain and

risking selling at a price that is not certain. Thus, he profits from daring risks which the other economic players would not. The entrepreneur's advantage in this arbitrage is dependent on the uncertain role he plays.

Furthermore, Cantillon's entrepreneur engages in professional tasks (such as being a farmer, transporter, banker or marketplace merchant). Thus, the entrepreneur is separated from other agents by the variable and non-contractually planned character of his revenue source. Because the entrepreneur's primary job is arbitrage, he must be observant and forward-thinking, but not necessarily inventive. To match current demand, he adjusts the quantity offered; he neither raises nor reduces demand or supply; and he is prepared to be held accountable for the risk involved. An entrepreneur, on the other hand, does not always have to stress himself to mobilize the financial resources that start his business. In his arbitrage strategy, he falls on the capitalist (such as the banking system that in return charges interest as cost to him). In this system, the entrepreneur's continual participation in the exchanges depends on how much more profit he can make. His occupation depends on a sustained interplay of the forces of demand and supply which can attract or breed more entrepreneurs. As more entrepreneurs are attracted to the system, profits, upon which they depend, may dwindle forcing the weaker ones into bankruptcy and fall of business.

3.4.1 The Classical thought on Entrepreneurship

Traditional perspectives on entrepreneurship highlighted the advantages of free commerce, competition and specialization. The first references to entrepreneurship are

found in economics. According to Smith (1776), all economic value resulted from the continuous interplay of three productive forces including land, labour and capital. Entrepreneurship is defined relative to the economic system in the role of the entrepreneur creation of residual earnings made after settling all costs associated with the other productive forces. The entrepreneur makes this profit from his role as an 'Entrepreneur', a term French coined by Cantillon (1755) to describe him as who takes action to develop and manage a business. The entrepreneur earns this position for his conventional wisdom and readiness to participate in the production process and ready to endure the associated risks.

3.4.1.1 The project manager entrepreneur

According to traditional perspectives, the entrepreneur is a project manager, a resource manager bearing the risks involved in both production and distribution of goods and services (Say, 1803). Say, unlike other traditional economists, placed the entrepreneur at the centre of the whole production and consumption system. However, by emphasizing on entrepreneurship as basically a superior sort of labour, Hébert and Link (1988) have intentionally or subconsciously shifted attention away from the distinctiveness of the entrepreneurial position. According to Say (1803), manufacturing involves turning anything in nature into useful resources; material participation in the production process is essentially "wealth production". Say (1803) distinguishes three sorts of industries that may generate value to include the agricultural sector, industry and business exchanges. To convert these resources into value (products and services), humans are required. The

human resource in this production covers three categories which are hardly found in one single person.

These include theorist of knowledge, those who apply the knowledge and, finally, those who put this knowledge in practical activities in the creation of value. The entrepreneur in this framework plays the last role (Say, 1803, 1971) as he applies existing knowledge to create value. His role here is employed to start enterprises from which he earns his income. The function and job security of the entrepreneur is sustainable in the economic system owing to the barriers posed by the required unique qualities, talents and abilities that individuals possess that are not shared by the general population. These qualities, which he referred to as the "art of supervision and administration" included judgment, perseverance and knowledge of the world and business. Furthermore, a successful entrepreneur should have prior expertise and understanding of the industry, as well as be wealthy (or solvent) enough to offer the required capital. Finally, the entrepreneur should have a reputation for knowledge, prudence, probity and regularity; and he should be able to obtain a loan for money that he may not have (Say 1971).

3.4.1.2 The entrepreneur as an organizer of resources

Cantillon's (1755) was perhaps the first to introduce entrepreneur's function in scholarly literature. His books on entrepreneurship suggests that the greatest approach to the manufacture consumer products is the liberal economic system (Smith 1776). In this system, the entrepreneur is a pivotal role player in the economic system as he takes up the challenge as an organizer of productive forces and an agent for resource mobilization

through his risk-taking propensity. Entrepreneurship is therefore defined as any activity that provides residual profits above what are obtained on land, labour and capital. Cantillon has structured the working populace of the economic system in four groups. These include the capitalists, hired labour, owners of capital and the entrepreneur. These collectively work together through their respective roles and motivations as interest earners, wage earners, rent earners and profiteers and organizers of the preceding activities.

3.4.1.3 Uncertainty and risk assumption

According to Cantillon (1803), an entrepreneur is a speculator who executes all transactions and accepts risks because of acquiring at fixed prices and then selling at variable prices. Cantillon (1803) named it the risk theory of profit, according to which the term 'entrepreneur' describes anyone who earns an erratic income. The entrepreneur ensures that the supply and demand of goods and services are at an equilibrium. This he does by assuming the risk of buying at prices that are certain and supplying to the productive forces at a price which cannot be predicted. By assuming this risky role, the market forces are brought to an equilibrium, the entrepreneur plays a pivotal role of ensuring a stable economic system.

Turgot (1766) dissociated who an entrepreneur is from a capitalist. For him, what stands an entrepreneur out is his ability to innovatively combine production factors. The capitalist is only concerned with making the necessary funding available for the production system (Turgot 1766) asserts that the ultimate risk is borne by the capitalist. Say (1821) further

distinguishes between entrepreneurial profit and capital gains. To Say (1821), the role of the entrepreneur extends beyond "superintendence and administration" to include qualities such as judgment, perseverance, economic insights and the ability to organize production. Scholars argue that Say's concept of the entrepreneur marks a departure from that of classical economists. Other foundational theorists of his time such as Adam Smith played down this assumed market leadership position of the entrepreneur but regarded him merely as a market player in the economic system (Kirchhoff 1994). Indeed, Say, just as Turgot argued that the managerial role of the entrepreneur should be considered alongside the three production factors.

Another classical economist; namely, Mills (1848) who perhaps introduced and popularized the concept of entrepreneurship in English-language writing posits that the primary responsibilities of the entrepreneur includes providing guidance, control, oversight and bearing risk. Nonetheless, Mills perceived the entrepreneur as a provider of capital. As Hawley (1907) argued, the other side of the rewards for entrepreneurship is readiness to bear the consequential risks. The viewpoint of Knight (1921) regarding entrepreneurship addresses the concepts of risks and uncertainty as posited by Cantillon. Knight (1921) argues that the entrepreneur faces both risks and uncertainty including the technical, market, competitive and financial risks. He emphasizes the crucial difference between insurable and uninsurable uncertainty (Knight 1921; Shane 2003). According to Knight, risk involves knowing the likelihood of an event occurring and making it insurable.

Uncertainty, on the other hand, is unquantifiable and therefore uninsurable. He argues that due to its inherent unpredictability, entrepreneurship cannot be insured, financed or outsourced (Knight 1921). Knight asserts that ambiguous decisions extend beyond available data and are inherently subjective. In his view, the entrepreneur is primarily a risk manager. To him, the entrepreneur is portrayed in the earlier conventional conceptions as an organizer and manager who must deal with risk and uncertainty. One of the most important traits of entrepreneurs is their capacity to deal with obstacles and welcome the unexpected. But instead of placing the entrepreneur in a dynamic environment, these authors place them in one that is extremely stable. The authors also downplay the importance of entrepreneurs in innovation. Neoclassical scholars address these points.

3.4.1.4 Relevance of the Classical Theory

The classical concepts introduced by Cantillon and Say, particularly the focus on risk-bearing and resource management, are essential in helping students understand the practical and operational aspects of running a business. In entrepreneurship education, students learn that entrepreneurial success is not merely about having innovative ideas but also about managing resources effectively and bearing risks. For its application in entrepreneurship education, classical theory is relevant in that courses can simulate real-life entrepreneurial scenarios, teaching students how to allocate resources, manage finances and assess market risks. By understanding these foundational elements, students develop the ability to make informed decisions and cultivate a mindset that is comfortable with calculated risk-taking.

3.4.2 The neo-classical view of entrepreneurship

Neoclassical views arose as a response to the criticism levelled towards classical notions. Another important component of neoclassical theory that was absent in classical works was the influence of declining marginal utility and entrepreneurial reaction to it (Roche 2017). Neoclassical viewpoints on entrepreneurship gained popularity in 1879. Cantillon and Say studied adjustment processes at the micro level, whereas advocates concentrated on the effects of aggregate equilibrium in an economy. According to Greenfield and Strickon (1981; 1986), an entrepreneur is an abstract person who does not care about external factors interfering with the rational operation of the company they manage. The neoclassical model, with its production function, perfect information and rational decision logic, precludes the possibility of an active entrepreneur; the company is managed by itself.

Experts argue that the primary shortcoming of neoclassical economic theories is their inability to articulate a method for creating new demand (Greenfield and Strickon 1981, 1986). Neoclassical economists did not address the unique function of the entrepreneur in their works until they focused on issues related to economic growth. Accordingly, some neoclassical economists elaborate on the ways in which the small-scale choices and deeds of the entrepreneur impact economic activity. The company does a calculation to determine the best values for each of its decision factors when determining input levels; these values indicate the option that maximizes profits. Customers choose consumption bundles that maximize their anticipated utility levels based on their budgets. When the

supply and demand of each good (output plus initial endowments) are equal, there is only one set of prices that are in equilibrium. It is implicitly assumed that all markets exist and operate flawlessly. After that, the calculations are done and new values are established that will hold true until the subsequent shock happens. The focus lies on equilibrium solutions that are acquired within an uncertain environment. There is little doubt that the dynamic adjustment process towards equilibrium is poorly understood. Moreover, internal capital supply is unaffected because credit markets run perfectly.

It is obvious that the entrepreneur has been taken out of the model. Initiative and taking risks are not tolerated. The management group becomes a mindless calculator. Amazing ideas, charm or any other element that makes up entrepreneurship are unknown to the general public since they do not fit the preconceived notions. The model is mostly used as an analytical tool for optimality of well specified problems that may be solved without the help of an entrepreneur (Baumol 1968; 1993). In their organized framework, dominant modern neo-classicists appear to have overlooked the entrepreneur. Prior to the 1930s, however, neoclassical views focused on the entrepreneur. The centrality of the entrepreneur in neoclassical concepts is demonstrated by Marshall (1842-1924).

3.4.2.1 Marshall's entrepreneur

The place of the entrepreneur in the view of Marshall is one to provide goods and as a byproduct, inventions and advances. Marshall emphasizes the value of invention, pointing out that even wealthy businesspeople who have forged new paths have often left behind benefits to society that far exceed their personal profits (Marshall 1890). In the

Marshallian economy, companies that benefit society the most do not necessarily prosper. The compensation of any participant in Marshall's (1930) economic system is determined by the value he offers, not the benefits he receives from it. To him, all authority and accountability in the business are in the possession of the entrepreneur. He manages and employs people, regulates production, assumes financial risks and strikes a balance between capital and labour. A savvy entrepreneur is always searching for opportunities - that is, innovations - to lower costs in exchange for a particular result.

As such, entrepreneurial success requires a specific set of skills and competencies. To begin with, the key for sustained success in any pursuit, especially business, is intelligence and general competence (as opposed to specific competence). A general ability includes the following: the capacity to multitask, the ability to prepare everything ahead of time, the ability to act decisively and quickly in the event of a crisis, the ability to adjust quickly to changes, stability and dependability and the ability to always have a reserve of force (Marshall 1930). In the view of Marshall, education, innate talent and family history all have an impact on this broad ability. Second, certain abilities like trade knowledge, forecasting prowess, opportunity recognition and risk-taking are necessary for a successful company. Third, the entrepreneur needs to be imbued with the trait of leadership so as to carry out his role as a manager of workers.

Being a successful entrepreneur requires not just these skills but also luck and business opportunities. Each person has a different chance of obtaining the funds required to enable them to be properly employed. Those who work with borrowed capital, in any

event, have an advantage over those who have their own capital. Lenders can easily take back their loans if the businessman using the borrowed money is less successful; as a result, one disaster can easily spiral out of control. Sons of entrepreneurs are better than others when it comes to starting a business. This is not necessarily related to biology but his knowledge acquired in the inner workings of a real company. Profits in the entrepreneurial field are not like those in other professions. The difference between individual profits and average wages is substantial. The proportion of successful entrepreneurs in the population is rather low. Businesses also benefit from the unique talents required for their jobs. These rents could be seen as a surplus or a particularly significant part of businessmen's earnings.

The requisite abilities place a limit on the supply of entrepreneurs. Because of this, the entrepreneurial supply price is high, determined by supply and demand's balancing forces. Along the line, new business people will enter the industry if entrepreneurial gains (net advantages) surpass earnings in other professions. The "substitution" concept, which is another name for Marshall's "survival of the fittest" idea, governs who stays in the firm and who goes out of it when there are too many wealthy entrepreneurs to support the high price. In a nutshell, the entrepreneur class is at the core of the Marshallian market economy. Entrepreneurs play an intricate role of managing and controlling the human and financial resources, keeping the productive forces at an equilibrium in the market and engaging in the manufacturing and distribution processes. They assume all of the production-related risks. They oversee and direct their companies. They are innovators and the engine of progress because they are cost-cutters. The necessary skills are many

and in society, it is unusual to find combinations of them. The supply price of entrepreneurship will therefore usually be high.

3.4.2.2 Relevance of Marshall's viewpoint

Marshall's emphasis on the entrepreneur as a coordinator of resources to meet market demand aligns with teaching students the importance of aligning their business ideas with market needs. Entrepreneurship education can highlight how successful ventures depend on understanding and responding to market signals. In entrepreneurship education, teaching students to analyze market trends and customer behaviour helps them develop an awareness of market equilibrium and the need to balance supply and demand. This theoretical approach can foster entrepreneurial intentions by showing students how they can identify gaps in the market and meet those needs through strategic resource coordination.

3.4.3 Schumpeter's point of view

The entrepreneurial theory benefited greatly from the work of Joseph Schumpeter (1883-1950). He was the first to suggest that creativity comes from within. In place of the outdated notion that entrepreneurship equates to firm management, he promoted the idea that an entrepreneur may be both an innovator and a firm leader, acting as the main force behind changes to the economy. By characterizing the entrepreneur as an inventor, Schumpeter established a link between the dynamics of technology and corporate action. He openly denounced the business owner as a capitalist and risk-taker. He combined the economic theory of entrepreneurship with psychological theory. Schumpeter's

entrepreneur searches for opportunities that might be profitable. In order to accomplish this, he suggests "new combinations" or innovations. The main endogenous driver of change (development) in the economic system, according to Schumpeter, is the creative output of entrepreneurs. The circular flow of the economy is disrupted and a new equilibrium is created by new entrepreneurial combinations. Constant discontinuity equates to constant creativity, ongoing unbalance and alterations.

A company's director and sole owner are not usually characteristics of an entrepreneur. Anyone who invents novelty in whatever capacity is an entrepreneur. Innovators that are (finally) replaced typically do not attempt reinventing new concepts. Usually, they manifest themselves as new businesses that start up alongside established ones. When old firms cease to carry out new combinations themselves, they are terminated in this way. It is the responsibility of the entrepreneur to innovate and lead, which entails choosing which goals to pursue rather than how to achieve them. He does not supply capital or accept risks. Both jobs are managed by the banker.

It takes a certain mindset and specific behaviour to be ready and motivated to take on an entrepreneurial endeavour. To "lead" current production methods into new channels (as opposed to the familiar ones), leadership is needed. Additionally, the business owner should not be afraid to try something new. "This mental independence is something unusual and uncommon by nature" (Schumpeter 1911, 1939:86). In the social context, opposition emerges when someone does something different and exhibits deviant conduct. According to Heertje (1982), an entrepreneur needs to possess the strength to

resist the social currents of their society. Moreover, unique psychological motivations are needed for innovation. Entrepreneurs do not do what they do for their personal needs in the first place. The reasons for going indirect rather than direct consumption include:

- The desire to establish a private kingdom to acquire social standing. The more interesting this ideal is, the less possibility for social differentiation that individuals have. The desire to conquer, to outperform others rather than for the benefits, to outperform others, to succeed for the sake of success itself, rather than for the gains of accomplishment. It is not necessary to be wealthy to begin as an entrepreneur. Innovations can benefit from both personal wealth and credit. If they are backed by their own riches, the entrepreneur performs two functions: entrepreneur and banker. In any case, the banker, not the entrepreneur, carries the financial risk associated with an innovation. The delight of creating, of completing tasks, of using energy, of changing for the sake of changing.
- Innovation implementation is generally an endeavour motivated by profit. Nonetheless, economic success, rather than profit seem to be the motive of many entrepreneurs, profit marks the state or performance of the business. According to Baumol (1993), inventors or first-generation entrepreneurs would normally enjoy profits as monopolists until imitators break in. Imitators, attracted to the profits made by the entrepreneur, begin to believe that taking up entrepreneurship is attractive and, thus, join in the trade. Thus, eventually the entrepreneur's initial profit position is undermined by entry and competition, leading to the achievement of a new equilibrium position.

In summary, Schumpeter's businessman is a trailblazer and a visionary. However, he is not a capitalist, manager or risk-taker. The entrepreneur as a driver of change directs the progress and activities of the economy for growth and development. He guides and directs activities towards a higher equilibrium position and out of its otherwise static equilibrium condition. In a dynamic economic system, innovations are endogenous developments. Entrepreneurs are eager to develop because they possess certain rare motivational elements. Entrepreneurial activity and earnings are not sustainable. Entrepreneurship is a transient situation for anyone unless he continues to innovate.

3.4.3.1 Relevance of Schumpeter's viewpoint

Schumpeter's focus on innovation and creative destruction is crucial in modern entrepreneurship education. Schumpeter's view positions the entrepreneur as an innovator who disrupts existing markets with new ideas, technologies or processes. Entrepreneurship education that incorporates this theory encourages students to think outside traditional boundaries and embrace disruptive thinking. This theory is relevant in entrepreneurship in the sense that innovation-focused entrepreneurship programmes often challenge students to develop unique business ideas, encouraging them to be agents of change. This approach cultivates a mindset of continuous innovation, which is critical for developing entrepreneurial intentions. Students are inspired to view entrepreneurship not just as a career path but as a way to revolutionize industries and drive economic progress.

3.4.4 Frank Knight's point of view

Knight's (1885-1972) contributions to entrepreneurship merges with Cantillon's contributions. He views the entrepreneur's role as one that is inherently risk-taking and uncertainty tolerant. Consequently, he describes the entrepreneur as one possessing traits that predisposes one to be risky and uncertain environment of opportunities. Uncertainty is a defining aspect of the society in which the entrepreneur operates. Uncertainty, as contrast to risk, is a sort of probability for which there is no solid foundation for categorizing occurrences since it concerns the result of a single event. Therefore, when generating an estimate and determining its value, judgment should be applied. The foundation of Knight's theory of entrepreneurship, competition and profit is real uncertainty.

Entrepreneurs are experts at handling responsibility, both in terms of leadership and management and dealing with real uncertainty and risks including the risks brought on by factors including that of fast changing in consumer tastes or ability to pay. Reducing uncertainty has positive effects on society (Knight 1921, 1971). Economic growth, including corporate structure and technological advancements is attributed to entrepreneurs. Selecting the most qualified individuals for entrepreneurial positions is extremely important and rewarding for society. Entrepreneurial skill is the deciding factor in each firm's size.

The primary responsibility of an entrepreneur in a company during turbulent times is to provide guidance and oversight. He makes decisions, employs judgment well and takes

ownership of his actions. Where, when and what kind of decisions to make are among the decisions. The business owner also has a legal obligation to ensure that the services and products assured meet the expectations of parties involved in the business. The entrepreneur bears the risk of the uninsurable enterprise.

In addition to entrepreneurial skills (discussed as follows), becoming an entrepreneur is also related to both chance and his self-efficacy belief. The ability to effectively handle uncertainty is a key component of entrepreneurial talent. The entrepreneur's function is devoted to individuals who are most capable of handling uncertainty because of individual variances in their capacity to handle it. It requires self-efficacy to effectively manage risks and uncertainty. Furthermore, Knight (1921, 1971) states that entrepreneurial talent encompasses not only the necessary skills for handling uncertainty but also his ability to manage manpower. Regarding the ability to finance his business, the entrepreneur needs not be wealthy enough; he only needs to prove his creditworthiness to a capitalist to sponsor his business. The payment for enduring uncertainty in the commercial venture is the residual revenue or profit. Prices for the services and products are determined by the level of competitive forces, especially from nascent entrepreneurs (Knight 1921; 1971).

Given the above-mentioned state, the income of any one entrepreneur will likely to be larger with his personal skills and chance. When examining entrepreneurial revenue, the Knightian entrepreneur should consider the prestige of entrepreneurship as well as the happiness that comes from being one's own boss. The following factors influence an entrepreneur's supply: (i) ability in its entirety; (ii) desire to pursue profit; (iii)

creditworthiness; and (iv) his personal entrepreneurial traits. While talent without the other two components will simply be wasted, willingness and the ability to make promises that are not supported by ability will undoubtedly lead to the loss of resources (Knight 1971). In summary, by accepting all uncertainty and making decisions for which he is responsible, the Knightian entrepreneur helps society save money. He guarantees the producing elements their agreed-upon payment. The willingness to tolerate uncertainty and the availability of the funds to pay the promised compensation are prerequisites for becoming an entrepreneur. In addition to profit and residual payments, status and job satisfaction are frequently used as forms of compensation for entrepreneurial services. While lowering the collective self-confidence of entrepreneurs, each entrepreneur's profit margin accentuates his unique skill and good fortune. If someone is interested and has sufficient funds, they can offer entrepreneurial services.

3.4.4.1 Relevance of the Knightian viewpoint

Frank Knight's distinction between risk and uncertainty highlights the importance of judgment in entrepreneurial decision-making. In environments where outcomes are unpredictable, entrepreneurs must make decisions based on incomplete information. This concept is critical in teaching students how to handle ambiguity and uncertainty, which are inherent in entrepreneurship. Entrepreneurship education can incorporate case studies, simulations and decision-making exercises where students are forced to make judgments in uncertain contexts. This prepares them to navigate the uncertain nature of entrepreneurial ventures, fostering resilience and adaptability - qualities essential for entrepreneurial intention and success.

3.4.5 The Neo-Austrian Thought on Entrepreneurship

The traditional perspective held by economists diverges significantly from the Austrian understanding of the market economy. The interest of neoclassicists is market equilibrium. For Neo-Austrians theorists, equilibrium will never be reached by the market economy. They try to address the question of whether or not market economies often balance. Neo-Austrians claim that these inclinations result from the dynamics of discovery. This kind of finding exposes blatantly profitable opportunities that in turn represent mistakes brought about by "total ignorance". Being ignorant of a basic lack of knowledge is referred to as absolute ignorance.

3.4.5.1 Kirzner's point of view

Kirzner's viewpoint relates to how the entrepreneur participates and profits in a market characterized by price disequilibrium. It summarizes the entrepreneur's unique trait of alertness to opportunities that pass unnoticed by the rest of society. This situation helps in improving the market in which entrepreneurs abound. It initiates some competition among entrepreneurs because they share in this characteristic of alertness to opportunities in the market (Kirzner 1992). Kirzner (1985) has argued against neo-classical theoretical arguments for perfect competition in the market that assumes that the situation of equilibrium is static. Rather, he indicates that the entrepreneur's role is critical in the economic system as he contributes to equilibrium through opportunity recognition. An important indication of relevance to Kirzner's theory lies in its applicability

to practical entrepreneurship. This is in regard to the entrepreneur's role in ensuring that resources are allocated efficiently while satisfying the needs of customers (Kirzner 1999). To conclude, the entrepreneurship viewpoint of Kirzner is largely regarding the entrepreneur's personal characteristic of alertness to opportunity in a market that is dynamic. He steps away from neo-classical theorists' emphasis on innovation and risk-taking as key drivers to the state of equilibrium in the market.

3.4.5.2 Relevance of Kirzner's viewpoint

Israel Kirzner's concept of entrepreneurial alertness, which emphasizes the ability to identify and exploit opportunities in the market, is highly relevant to developing entrepreneurial intentions. Kirzner's theory underscores the importance of being vigilant and attuned to market inefficiencies, which entrepreneurs can leverage to their advantage. Entrepreneurship education can teach students to be opportunity-focused, training them to identify market gaps and emerging trends. This can be achieved through workshops, market analysis projects and mentorship from experienced entrepreneurs who can guide students in recognizing entrepreneurial opportunities in real-world contexts.

3.4.6 Summary of theoretical review

The evolution of entrepreneurial theory reflects the diverse and multifaceted nature of entrepreneurship itself. From the early classical economists like Cantillon and Say, who introduced the concepts of risk-bearing and resource management, to Marshall's emphasis on coordination in the neo-classical school, each contribution added new layers

of understanding to the entrepreneurial role. Schumpeter's focus on innovation and creative destruction brought attention to the dynamic, transformative potential of entrepreneurs, while Knight's distinction between risk and uncertainty provided a nuanced understanding of entrepreneurial decision-making. Kirzner's theory of entrepreneurial alertness further expanded this view, focusing on the entrepreneur's ability to recognize and exploit opportunities in the market. Collectively, these theories offer a rich, comprehensive understanding of entrepreneurship. Entrepreneurs are seen not just as risk-takers or organizers of resources, but also as innovators, market disruptors and opportunity discoverers. This diversity in thought underscores the complexity of entrepreneurship and highlights its critical role in driving economic progress and development. Thus, entrepreneurship is a multidimensional phenomenon that cannot be fully captured by any single theoretical lens. Each school of thought - whether focusing on risk, innovation, coordination or opportunity recognition - provides valuable insights that contribute to a deeper and more holistic understanding of the entrepreneurial process.

Finally, the diverse theoretical perspectives on entrepreneurship offer valuable insights that are directly applicable to entrepreneurship education. By integrating these theories into the curriculum, educators can provide students with a comprehensive understanding of the entrepreneurial process, from risk management and innovation to opportunity recognition and decision-making under uncertainty. Entrepreneurship education plays a vital role in shaping students' entrepreneurial intentions by offering them a well-rounded view of what entrepreneurship entails. The insights from these theories help students

understand that entrepreneurship is not a one-dimensional career path; it involves navigating complex challenges, recognizing opportunities, bearing risks and driving innovation. Armed with this knowledge, students are more likely to develop the intentions and confidence needed to pursue entrepreneurial ventures.

3.5 Entrepreneurship as an intentionally planned behaviour

The concept of entrepreneurial intention, defined as the commitment to starting a new business has been widely recognized as a direct antecedent of entrepreneurial action. Fayolle and Liñán (2019) argue that intention is a central cognitive construct that determines whether individuals transition from merely considering entrepreneurship to actually pursuing it. This intentionality is particularly significant in entrepreneurship, where actions involve high risk and require careful planning. In support, a study by Meoli et al. (2020) found that entrepreneurial intention is a reliable predictor of actual business startup activity among students, further emphasizing that entrepreneurial behaviour does not occur spontaneously but follows from a deliberate planning process driven by intention. The argument is that understanding the emotional undercurrents of individuals is crucial groundwork for people to launch their own companies and help make their dreams come true (Dijinira et al. 2020). The argument, therefore, is that entrepreneurship decision-making is a deliberate and planned act (Anwar and Zebari 2015).

Entrepreneurship as an intentionally planned behaviour is a perspective that interprets entrepreneurial action as a deliberate, goal-oriented process shaped by attitudes, perceptions and intentions. Grounded in psychological theories, particularly Ajzen's

(1991) Theory of Planned Behaviour (TPB), this perspective suggests that the intention to engage in entrepreneurship precedes and predicts entrepreneurial action. As interest in the cognitive processes driving entrepreneurship has grown, recent literature has examined the specific role of entrepreneurial intentions, the factors influencing these intentions and the mechanisms by which they translate into behaviour.

3.5.1 Key Entrepreneurial Intention Models

The models of entrepreneurial intention are essential for comprehending the motivations behind people's pursuit of entrepreneurship. These models function as frameworks that assist practitioners and researchers in locating and examining the contextual, social and psychological factors that affect an individual's choice to launch a new company. Numerous important models have been created over time and they all provide different perspectives on the process of becoming an entrepreneur. These models help us understand the individuals' entrepreneurial inclinations and they also serve as a basis for educational initiatives and policy that try to encourage entrepreneurial mindsets. The following sections address some key models of entrepreneurship intentions which are considered relevant and applicable in the subject matter of this study. These include: the TPB, Entrepreneurial event model, Social Cognitive Career theory, entrepreneurial intention model, the personality trait model and Model of entrepreneurial intentionality.

3.5.2 The Theory of Planned Behaviour

One major perspective under the umbrella of psychological theories explaining entrepreneurship intentionality has been Ajzen's (1991) TPB upon which this thesis is

modeled. This theory is a further development on an earlier theory (the Theory of Reasoned Action) that Ajzen promulgated together with Fishbein in 1975. The theory posits that an individual's intention to perform a behaviour is the most crucial predictor of that behaviour. This intention is influenced by three key factors including attitude towards the behaviour or the individual's positive or negative evaluation of performing the behaviour; subjective norms or the perceived social pressure to perform or not perform the behaviour; and perceived behavioural control defined as the perceived ease or difficulty of performing the behaviour. Figure 3.1 is the diagrammatic presentation of TPB.

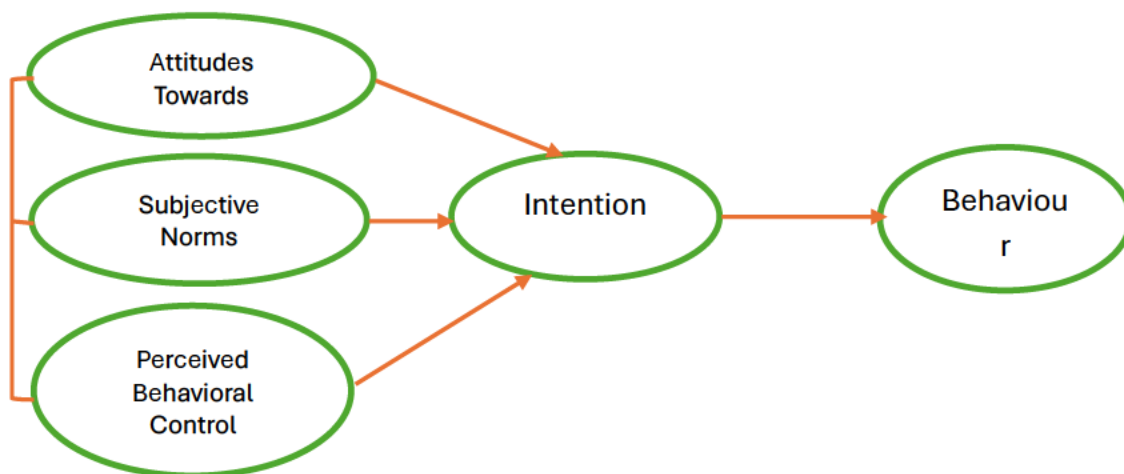


Figure 3.1: TPB Model (Ajzen, 1991)

3.5.2.1 Limitations of TPB

Despite its widespread application and recent developments, TPB has faced several critiques. Critics argue that the theory does not adequately account for the role of emotions and unconscious processes in shaping behaviour. For instance, Sniehotta et al. (2020) suggests that TPB's focus on rational decision-making but overlooks the impact of

emotional states, such as anxiety or stress on behaviour. Additionally, the theory has been criticized for assuming that individuals have full volitional control over their actions, which may not always be the case in real-world scenarios where behaviours are influenced by external constraints.

To address some of its limitations, researchers have called for integrating TPB with other theories to provide a more holistic understanding of behaviour. For instance, combining TPB with the Health Belief Model or the Transtheoretical Model has been proposed to enhance its explanatory power in predicting health-related behaviours. Ajzen (2021) himself suggests that future research should explore the integration of TPB with models that account for automatic processes and habitual behaviour. Furthermore, recent studies have also emphasized the need to explore how cultural differences impact the applicability of TPB. Ningsih, Arifuddin, and Usman (2024) argue that cultural norms and values can significantly shape the formation of attitudes, subjective norms and perceived behavioural control. Understanding these cultural variations is essential for applying TPB in a global context and designing culturally sensitive interventions.

3.5.2.2 New developments on the TPB

Following the observed limitations of the theory, recent literature has expanded on TPB by incorporating additional constructs, examining its applicability in new domains and refining its predictive power. Some of these additions are discussed as follows:

- a. Moral norms: several studies suggests that moral norms or personal ethics can play a significant role in influencing behavioural intentions, particularly in contexts such as

ethical consumerism and pro-environmental behaviour. According to Manstead (2018), incorporating moral norms into TPB can provide a more comprehensive understanding of behaviours driven by ethical considerations. For instance, the decision to recycle or purchase ethically produced goods may be heavily influenced by an individual's moral beliefs.

- b. Habit: habitual behaviour or the frequency of past behaviour has been found to be a strong predictor of future behaviour. Gardner et al. (2020) propose that integrating habit strength into TPB can help explain why certain behaviours, especially routine ones are performed consistently over time, even in the absence of strong intentions.
- c. Self-identity: recent research by Rise et al. (2021) emphasizes the role of self-identity in predicting intentions. When individuals identify strongly with a particular role or behaviour (e.g., identifying as a "healthy eater" or "environmentalist"), they are more likely to engage in behaviours consistent with that identity.
- d. Time perspective: research has highlighted the importance of considering the time perspective in TPB. According to Lindeman and Kogler (2019), the temporal distance of a behaviour can significantly influence intentions and actions. People might be more likely to form intentions for behaviours with immediate outcomes compared to those with long-term benefits. This insight is particularly relevant for behaviours like saving for retirement or adopting environmentally sustainable practices.
- e. Contextual influences: researchers have begun to emphasize the role of situational and contextual factors in shaping intentions and behaviours. Conner et al. (2020) argue that TPB can be enriched by considering the context in which a behaviour occurs, such as the availability of resources, cultural norms and environmental constraints. For

instance, the intention to engage in physical exercise might be influenced by the availability of parks or gyms in one's neighbourhood.

The model has also been modified to include factors that are particularly relevant to younger individuals, such as educational interventions, peer influence and psychological traits. The applicability of the theory of TPB is discussed next.

3.5.2.3 Application of TPB in Entrepreneurship and Entrepreneurial Intentions

The Theory of Planned Behaviour (TPB) has been extensively applied to understand entrepreneurial intentions and behaviours. This review focuses on identifying and examining the antecedents of TPB's core components - attitudes towards behaviour, subjective norms and perceived behavioural control - in the context of entrepreneurship. These antecedents range from individual-level factors like personality traits and psychological characteristics to contextual influences such as social norms, cultural values and educational experiences.

a. Attitudes Towards Entrepreneurship

Studies have highlighted that positive attitudes towards entrepreneurship significantly shape entrepreneurial intentions among the youth and young adults. Research (Nabi et al. 2017b; Al-Mamary 2025) has found that young individuals who view entrepreneurship favourably are more likely to develop entrepreneurial intentions. This attitude is often influenced by exposure to entrepreneurship through education, media and family business backgrounds. For instance, if young adults perceive entrepreneurship as a

desirable and viable career option that offers autonomy, creativity and financial independence, they are more likely to consider starting their own businesses.

b. Subjective Norms and entrepreneurship

Subjective norms or the perceived social pressure to engage or not engage in entrepreneurship, play a crucial role in shaping entrepreneurial intentions in youth. For young adults, peer influence and support from significant others like family, friends and mentors can significantly affect their intention to become entrepreneurs. Researchers(e.g., Ip 2024; Farrukh et al. 2019) found that family support, particularly from entrepreneurial parents, positively influences subjective norms by reinforcing the idea that entrepreneurship is a desirable and socially acceptable career path. Peers who are supportive or have entrepreneurial aspirations can also contribute to creating a positive social environment for entrepreneurial intentions. Similarly, in cultures that value individualism, innovation and self-reliance, entrepreneurship is often seen more favourably, leading to stronger subjective norms that encourage entrepreneurial behaviour (Liñán and Jaén 2020). Conversely, in cultures with a high level of uncertainty avoidance or collectivism, subjective norms may not be as supportive of entrepreneurial endeavours.

c. Perceived Behavioural Control and Self-Efficacy for entrepreneurship

Perceived behavioural control, which reflects an individual's perception of their ability to perform entrepreneurial tasks is a strong predictor of entrepreneurial intentions among young adults. Research, such as that by Newman et al. (2019) and Nguyen et al. 2025

demonstrated that individuals with high entrepreneurial self-efficacy are more likely to perceive fewer barriers to entrepreneurship and have stronger intentions to start a business. This self-efficacy can be developed through education, mentorship and hands-on experience.

d. Educational Interventions and Training Programmes

Research has also explored the impact of educational interventions and training programmes on modifying TPB components. Authors such as Anselmsson et al. (2020) and Otache (2025) have demonstrated that entrepreneurship education not only influences attitudes and perceived behavioural control but also enhances entrepreneurial self-efficacy. Their study showed that individuals who undergo entrepreneurship training are more likely to develop a favourable attitude towards entrepreneurship and feel more capable of starting a business, resulting in stronger entrepreneurial intentions. Researchers (e.g., Nabi et al. 2018); Diepolder, Huwer *and* Weitzel 2025; Ngo et al. 2024) have observed that entrepreneurial education programmes not only enhance knowledge and skills but also positively impact attitudes towards entrepreneurship, subjective norms and perceived behavioural control. Such education can demystify entrepreneurship, provide practical skills and foster a supportive network, all of which contributes to stronger entrepreneurial intentions. Educational interventions are particularly impactful for young adults as they are at a stage where they are forming their career aspirations.

e. **Personality Traits and Psychological Factors**

Recent literature has also integrated personality traits and psychological factors into the TPB framework to better understand entrepreneurial intentions among the youth. For example, traits like innovativeness, risk-taking propensity and proactivity have been found to influence entrepreneurial attitudes and perceived behavioural control. Rauch and Frese (2020) highlighted that young individuals who exhibit these traits are more likely to have a favourable attitude towards entrepreneurship and perceive fewer barriers to entry. Additionally, factors like resilience and passion for entrepreneurship can enhance perceived behavioural control and motivation, further fostering entrepreneurial intentions.

f. **Cultural Context and Social Environment**

The cultural context and social environment significantly shape the TPB components especially for youth and young adults. Research by Liñán and Jaén (2020) demonstrated that in cultures with a high value on individualism and innovation, young adults are more likely to develop positive attitudes and perceive greater social support for entrepreneurship. Moreover, a supportive social environment, including access to entrepreneurial networks, mentors and resources can enhance perceived behavioural control and subjective norms, making entrepreneurship a more viable option for young people.

g. **Entrepreneurial Self-Identity and Experience**

The inclusion of entrepreneurial self-identity and prior entrepreneurial experience has also been a recent modification to the TPB. Falck, Heblich and Luedemann (2019) found

that individuals who identify with the entrepreneurial role are more likely to develop intentions to start a business as this self-identification reinforces positive attitudes and increases perceived behavioural control. Furthermore, studies have shown that prior entrepreneurial experience can modify TPB components by enhancing self-efficacy and perceived behavioural control. Individuals with entrepreneurial experience tend to have a more favourable attitude towards entrepreneurship and a higher sense of control, leading to stronger entrepreneurial intentions.

h. Contextual and Environmental Factors

The impact of contextual and environmental factors has been a focus in recent literature, modifying the TPB to include variables like social support, cultural norms and access to resources. In their study, Meoli et al. (2020) integrated social and institutional support into the TPB framework, finding that these factors directly enhance subjective norms and perceived behavioural control. They argued that a supportive environment can provide the resources and encouragement needed for individuals to consider entrepreneurship as a viable career path, thereby strengthening entrepreneurial intentions. Additionally, cultural context has been shown to play a mediating role in the relationship between TPB components and entrepreneurial intentions (Liñán and Jaén 2020).

i. Emotional Intelligence and Passion

Recent studies have also explored the role of emotional intelligence and entrepreneurial passion as modifications to the TPB. Researchers (Newman et al. 2019; Dash and Nayak 2025) have suggested that emotional intelligence significantly influences entrepreneurial

intentions by enhancing perceived behavioural control and positive attitudes towards entrepreneurship. Their research showed that individuals with high emotional intelligence are better equipped to manage the uncertainties of entrepreneurship, which boosts their confidence and perceived ability to succeed. Similarly, passion for entrepreneurship has been found to be a critical factor in reinforcing the TPB components. For instance, Hoang and Luu (2025) found that entrepreneurial passion positively affects attitudes and perceived behavioural control, making individuals more likely to form strong entrepreneurial intentions.

j. **Digital Literacy and Technological Innovation**

Given the digital native status of today's youth, digital literacy and comfort with technological innovation have been integrated into TPB models. Studies like those by Liguori and Pittz (2020) found that young adults who are proficient in digital technologies have higher perceived behavioural control regarding starting tech-based businesses. This digital competence not only influences attitudes toward entrepreneurship by highlighting new opportunities but also enhances self-efficacy as young adults feel more equipped to navigate the digital landscape.

In sum, the application of the TPB in studying entrepreneurial intentions especially among young adults provides valuable insights into the factors that drive this demographic towards entrepreneurship. The literature emphasizes the importance of attitudes, subjective norms and perceived behavioural control. By incorporating additional variables such as personality traits, emotional intelligence, contextual factors, self-identity,

technological factors and educational interventions, researchers have enhanced the model's ability to explain and predict entrepreneurial intentions. These modifications provide a more comprehensive understanding of the factors that drive individuals to engage in entrepreneurial activities, offering valuable insights for policymakers, educators and practitioners seeking to foster entrepreneurship.

3.5.3 Entrepreneurial Event Model

The Entrepreneurial Event Model (EEM), developed by Shapero and Sokol in 1982 is a widely recognized framework for understanding the process that leads to entrepreneurial activity. The model posits that entrepreneurial intentions are influenced by three key factors: perceived desirability, perceived feasibility and the propensity to act. Recent literature has revisited and expanded upon the EEM, examining its relevance in contemporary entrepreneurial research and exploring new variables that might affect the entrepreneurial process.

a. Perceived Desirability

Perceived desirability refers to the extent to which an individual finds entrepreneurship to be an attractive option. Recent studies have explored how this perception is shaped by various factors:

- i. *Cultural and Social Norms*: contemporary research has emphasized the role of cultural context in shaping the perceived desirability of entrepreneurship. Liñán and Jaén (2020) found that individuals in societies that value entrepreneurship and innovation are more likely to find entrepreneurial ventures desirable. Additionally, social media

and digital platforms have created new cultural norms around entrepreneurship, making it a more visible and socially accepted career path.

- ii. *Impact of Entrepreneurial Education*: the literature indicates that exposure to entrepreneurial education positively influences perceived desirability. Research findings (e.g., Nunez et al. 2025; Udeozor et al. 2025; Nabi et al. 2018) demonstrated that individuals who receive entrepreneurship education are more likely to view entrepreneurship as a desirable career choice due to increased awareness of the potential benefits and opportunities associated with starting a business.
- iii. *Role of Social Influence and Role Models*: Studies like those by Bosma et al. (2020) have shown that the presence of entrepreneurial role models can significantly enhance the perceived desirability of entrepreneurship. Observing successful entrepreneurs in one's social or professional network can inspire individuals and make the idea of starting a business more appealing.

b. Perceived Feasibility

Perceived feasibility or the belief in one's capability to successfully start and run a business is a critical determinant of entrepreneurial intentions. Recent research has identified various factors that enhance this perception:

- i. *Entrepreneurial Self-Efficacy and Skills*: contemporary literature emphasizes the importance of self-efficacy in shaping perceived feasibility. Researchers (e.g., Newman et al. 2019; Shahzadi and Arshad 2024) have highlighted that individuals with higher entrepreneurial self-efficacy, often developed through education and prior

entrepreneurial experiences, are more likely to believe in their ability to succeed in entrepreneurial endeavours.

- ii. *Access to Resources and Support Networks*: recent studies have focused on the role of access to resources, such as financial capital, mentorship and networks in enhancing perceived feasibility. Meoli et al. (2020) found that individuals with access to these resources feel more confident in their ability to overcome potential challenges in entrepreneurship, thus increasing their perceived feasibility.
- iii. *Digital Technologies and Feasibility*: the rise of digital technologies has also been identified as a factor influencing perceived feasibility. Liguori and Pittz (2020) noted that digital platforms and tools have lowered the barriers to entry for entrepreneurship, making it easier for individuals to start and operate businesses, which in turn enhances their belief in the feasibility of entrepreneurship.

c. Propensity to Act

Propensity to act refers to an individual's personal inclination to act on perceived opportunities. Recent literature has explored various factors influencing this propensity:

- i. *Risk Tolerance and Entrepreneurial Traits*: contemporary studies have reaffirmed the importance of risk tolerance as a key factor influencing the propensity to act. Ngo et al. (2025) suggested that individuals with a higher tolerance for risk and uncertainty are more likely to act on entrepreneurial intentions. Other entrepreneurial traits, such as proactivity and innovativeness, also play a role in determining whether an individual will take the necessary steps to start a business.

- ii. *Triggering Events and Life Changes*: recent literature has revisited Shapero and Sokol's original idea that life events can serve as catalysts for entrepreneurial action. For instance, Grichnik et al. (2020) found that events such as job loss, career dissatisfaction or a significant life milestone can prompt individuals to reevaluate their career paths and consider entrepreneurship as a viable option.

In summary, the Entrepreneurial Event Model (Shapero and Sokol 1982) reaffirms the importance of perceived desirability, perceived feasibility and the propensity to act in shaping entrepreneurial intentions and behaviours. Modern influences such as entrepreneurial education, cultural norms, digital technologies and institutional support play significant roles in shaping these components.

3.5.4 The Social Cognitive Career Theory (SCCT)

The Social Cognitive Career Theory (SCCT) has been a major theoretical framework for understanding career choices and development (Soares et al. 2022). Developed by Lent, Brown and Hackett in 1994, the theory has grown to be a key conceptual model for career decision-making. SCCT, which Bandura developed in 1986, is the foundation of SCCT, which highlights how behaviours, environmental influences and individual characteristics interact to shape vocational outcomes. It is a framework that explains how individuals develop career interests, make career choices and achieve varying levels of career success and satisfaction (Kaki et al. 2022). Recent literature on SCCT has explored its applicability in diverse contexts, such as Science, Technology, Engineering and

Mathematics (STEM) education, entrepreneurship and career development among marginalized groups.

Researchers (Lau *and* Roeser 2021; Chu et al. 2024) found that self-efficacy in STEM subjects is a significant predictor of students' intentions to pursue STEM careers, especially among underrepresented groups. Interventions that enhance STEM self-efficacy, such as mentorship programmes and hands-on learning experiences have been shown to increase the likelihood of pursuing and persisting in STEM careers. The theory posits that self-efficacy beliefs, outcome expectations and personal goals are central to the career development process (Penn *and* Lent 2018; Pope 2023). These concepts, which are discussed below, interact dynamically to shape professional decisions.

a. Entrepreneurial Self-Efficacy

Self-efficacy is a key component of SCCT which represents a person's conviction in his/her own capacity to successfully accomplish a given activity. Bandura (1997) asserts that self-efficacy is a crucial factor in determining career behaviour since it influences people's thoughts, feelings and behaviours. Research indicates that having well-defined career goals improves people's motivation and dedication to their chosen careers (Hirschi *and* Pang 2025; Brown *and* Lent 2019). In the context of entrepreneurship, self-efficacy plays a crucial role in shaping entrepreneurial intentions and behaviours. Experts (e.g., Newman et al. 2019; Dash *and* Nayak 2025) found that individuals with high entrepreneurial self-efficacy are more likely to engage in entrepreneurial activities. SCCT has been used to understand how self-efficacy influences the decision to start a business,

emphasizing the importance of early experiences and skills development in building confidence in entrepreneurial abilities.

b. Outcome Expectations and Career Decision-Making

Outcome expectations refer to the anticipated consequences of engaging in particular behaviours. Recent studies have expanded on how these expectations influence career choices:

Work-Life Balance and Job Satisfaction: contemporary research has examined how outcome expectations related to work-life balance and job satisfaction impact career decisions. Kulik et al. (2022) found that individuals are more likely to pursue careers that they believe will offer a balance between professional and personal life, as well as intrinsic rewards such as job satisfaction and personal fulfillment. This trend is particularly evident among younger generations who prioritize flexible work arrangements and meaningful work.

Impact of Digitalization on Career Expectations: the rise of digital technologies has altered expectations about various careers, influencing career choices. Digital literacy and the perceived potential for remote work and flexible schedules have become significant outcome expectations driving career decisions in the modern workforce (Wang et al. 2023). Individuals are increasingly considering careers in technology fields or roles that offer digital nomad opportunities due to these perceived benefits.

c. Personal Goals and Career Persistence

Personal goals, both short-term and long-term, play a crucial role in guiding career-related behaviours and persistence:

Goal Setting in Career Development: recent literature emphasizes the importance of goal setting in career development and persistence. Schunk and Usher (2019) noted that individuals with clear career goals are more likely to engage in behaviours that align with those goals, such as seeking out educational opportunities and professional development activities. SCCT has been used to develop interventions that assist individuals in setting and achieving career goals, thereby enhancing career satisfaction and success.

Influence of Social Support on Goal Achievement: social support from family, peers and mentors has been identified as a key factor influencing the setting and achievement of career goals. Lent et al. (2020) demonstrated that social support can enhance career self-efficacy and help individuals overcome obstacles, thereby facilitating the attainment of career goals. This is particularly relevant in the context of underrepresented or marginalized groups who may face additional challenges in their career development.

3.5.4.1 SCCT in Diverse Contexts

Recent literature has applied SCCT to various contexts, exploring its relevance across different populations and career paths:

a. *Marginalized and Underrepresented Groups:* SCCT has been used to understand the career development processes of marginalized groups, including women in STEM, individuals from low-income backgrounds and racial/ethnic minorities. Flores et al. (2019) explored how self-efficacy and outcome expectations influence the career

aspirations of these groups, highlighting the importance of culturally sensitive interventions to support their career development.

- b. *Cross-Cultural Applications*: SCCT has also been applied in cross-cultural research to examine how cultural factors influence career development. Tang et al. (2021) found that cultural values, such as collectivism or individualism can impact self-efficacy beliefs and outcome expectations, leading to variations in career choices and persistence across different cultural contexts.

3.5.4.2 Integration of SCCT with Technology and Digital Platforms

With the increasing role of technology in career development, recent studies have examined how SCCT interacts with digital platforms and tools:

Online Career Interventions: recent literature has explored the effectiveness of online career interventions based on SCCT principles. For instance, virtual career counseling and online self-assessment tools have been developed to enhance self-efficacy and facilitate career exploration. Brown et al. (2020) found that such digital interventions can be effective in supporting career decision-making, particularly when face-to-face counseling is not accessible.

Digital Self-Efficacy: the concept of digital self-efficacy has emerged in recent studies, focusing on individuals' beliefs in their ability to effectively use digital technologies in their careers. This is particularly relevant in the context of remote work and the gig economy, where digital skills are increasingly essential (Smith and Anderson 2023). Enhancing digital self-efficacy can expand career opportunities and support career advancement in a technology-driven job market.

Overall, the SCCT highlights its continued relevance in understanding career development and decision-making. The theory's constructs of self-efficacy, outcome expectations and personal goals are influenced by modern factors such as digitalization, cultural diversity and evolving workplace dynamics. SCCT has been applied in various contexts, including STEM education, entrepreneurship and career development among marginalized groups, providing valuable insights for designing interventions that support career success and satisfaction in the contemporary world.

In a nutshell, it is worth noting that these models provide theoretical frameworks that explain the key psychological and behavioural factors that drive individuals to choose entrepreneurship as a career path. By integrating these models into entrepreneurship education, educators can more effectively nurture students' entrepreneurial intentions. A well-rounded curriculum that addresses the factors highlighted in these models can effectively prepare students for entrepreneurial success, boosting their confidence and willingness to pursue entrepreneurial ventures.

3.6 Entrepreneurship education

The definition of entrepreneurship education (EE) has been presented differently by different authors. Coțiu (2025) regards EE as the process of stimulating an individual with innovation, creativity and ideas to stimulate in him the ability to manage a project towards entrepreneurship. Since its introduction into institutions of higher learning, EE has received much attention and recognition as an academic subject capable of promoting

entrepreneurial culture and skills development (Santos et al. 2019a; Sarooghi et al. 2019; Guo and Ng 2024; Ngo et al. 2024; Hardie et al. 2020).

Entrepreneurship education has evolved over the past five decades from being an elective subject in business schools to a multidisciplinary field integrated across universities worldwide (Fayolle & Gailly, 2015; Nabi et al., 2017). In developed economies such as the United States and the United Kingdom, EE gained momentum in the 1980s and 1990s, driven by the need to stimulate innovation, self-employment, and job creation in response to economic restructuring. Universities began embedding EE within engineering, design, and technology programmes, emphasizing experiential learning, incubator support, and collaboration with industry (Gibb, 2002; Neck & Corbett, 2018).

In the United States for instance, institutions like Babson College and MIT pioneered experiential entrepreneurship models that integrate classroom learning with venture incubation, fostering both entrepreneurial mindsets and practical skills. In Finland, entrepreneurship education has been embedded from primary to tertiary levels, guided by national policies promoting creativity, innovation, and applied learning (Hytti & O’Gorman, 2004). Similarly, in China, government-driven university–industry partnerships have made entrepreneurship education a core component of higher education reforms, linking academic training with innovation ecosystems (Zhang & Huang, 2021).

Across these contexts, effective EE emphasizes experiential learning, mentorship, and ecosystem integration - aligning well with Kolb’s (1984) Experiential Learning Theory.

However, despite global progress, challenges remain, including uneven curriculum design, limited faculty capacity, and weak measurement of entrepreneurial outcomes (Fayolle, 2018).

Ghana, like many developing economies, has adopted entrepreneurship education as a strategic response to youth unemployment and industrial stagnation. While several universities and technical institutions have introduced EE courses, the implementation often remains theoretical rather than experiential, with limited alignment between pedagogy and labour market realities. Many researchers including Wardana et al. (2020) have stressed that EE presents the theoretical and conceptual foundation of the field of entrepreneurship; and investing in students to acquire the requisite expertise, skills, knowledge and capital is most likely to solve the market needs and challenges that could affect competitive business practices (Donald et al. 2019).

In response to the growing recognition of the need to increase entrepreneurship activities for employment creation, scholars have given a lot of attention towards EE (Deveci and Seikkula-Leino 2018; Rashid *and* Othman 2024). Research on pedagogical entrepreneurship is very new and still developing, despite the increased interest in entrepreneurship (Haara et al. 2016; Brant and Kilar 2025). Thus, a great deal of more sophisticated studies are still needed to investigate and validate earlier assertions and conclusions on EE.

There is ongoing debate among scholars and practitioners over what should be taught in entrepreneurship education (EE), how it should be delivered, and what learning outcomes are realistic (Motta & Galina, 2023; de Agapito et al., 2024). These differences are not confined to academic discourse but extend across countries and education systems, reflecting variations in economic context, pedagogical tradition, and institutional capacity (Mapanga & Faleni, 2025). For example, in high-income nations entrepreneurship education often stresses innovation, creativity, and experiential learning through incubators, simulations, and industry collaborations (Motta & Galina, 2023). In contrast, many institutions in developing regions - including sub-Saharan Africa - report EE programmes that remain largely theoretical, hampered by limited resources, faculty expertise, and weak linkages with industry (Mapanga & Faleni, 2025). As a result, scholars' views diverge on whether entrepreneurship can be taught effectively in conventional classroom settings or whether it is better cultivated through practice-oriented, experiential pedagogy (de Agapito et al., 2024).

Universities and vocational colleges play a vital role in developing both soft and hard skills by serving as centres for knowledge creation and skills transfer (Meyer, 2018; Noor et al., 2024). However, the effectiveness of entrepreneurship education (EE) in equipping graduates for entrepreneurial careers remains a subject of debate across the world, not only in Ghana. Studies from advanced economies such as the United States and the United Kingdom indicate that, despite strong institutional frameworks, many EE programmes still struggle to translate classroom learning into real entrepreneurial action (Fayolle & Gailly, 2015; Nabi et al., 2017). Similarly, research in emerging economies -

including Malaysia, India, and South Africa - shows that EE often lacks practical exposure, mentorship, and integration with industry, limiting its ability to foster entrepreneurial intentions (Sukavejworakit et al., 2018; Shahzad et al., 2022; Mapanga & Faleni, 2025). In Ghana, these global shortcomings are further compounded by contextual challenges such as inadequate funding, limited faculty expertise, and the dominance of theoretical instruction. This is reflected in findings by Aries et al. (2020), who observed that only about 45% of university graduates trained in entrepreneurship eventually ventured into business after graduation.

3.6.1 Entrepreneurship education in Ghana

EE has been integrated into the Ghanaian educational curriculum at both secondary and tertiary levels, aimed at equipping students with essential entrepreneurial skills and fostering entrepreneurial intentions. The Ghana Education Service (GES) and the Ministry of Education have implemented policies to encourage entrepreneurial learning, with many universities introducing courses in entrepreneurship across various disciplines. Studies show that EE positively influences students' entrepreneurial intentions as it helps develop self-efficacy, opportunity recognition and risk tolerance, which are qualities essential for successful entrepreneurship (Asamani and Mensah 2022; Donkor et al. 2020). Despite these efforts, some researchers argue that the current state of EE in Ghana is insufficiently practical, relying heavily on theoretical instruction rather than experiential learning approaches. The limited integration of practical activities, such as internships, incubator programmes and mentorship opportunities hinder students from gaining hands-

on experience, which is essential for translating entrepreneurial intentions into actions (Adom and Asante 2021).

3.6.1.1 Entrepreneurship education and development in TTU

The university has put in place elaborate efforts to cultivate the entrepreneurial mindset for the purpose of preparing its graduates for the world of work and for job creation.

These are presented below:

- a. Entrepreneurship Courses in the Core Curriculum:* EE is embedded as a core course for most academic programmes, ensuring all students are exposed to fundamental entrepreneurial concepts. Courses cover business development, financial literacy, innovation, opportunity recognition, market research, business law and small business management. The curriculum emphasizes experiential learning through projects, case studies and workshops, allowing students to apply theoretical knowledge to real-world scenarios.
- b. The TTU Entrepreneurship and Innovation Hub:* the Entrepreneurship and Innovation Hub serves as the heart of entrepreneurial activities on campus. It provides resources and support for students interested in launching their own ventures. The hub offers training in areas such as idea development, business model design, pitch preparation and funding strategies. Students can access mentorship from experienced entrepreneurs and industry professionals, helping them gain practical insights into running a business.
- c. Business Incubation Programme:* TTU has established a business incubation programme designed to support student startups. This programme provides

workspace, resources, mentorship and networking opportunities with potential investors. The incubation programme focuses on helping students develop viable business plans, navigate legal requirements and create sustainable business models. Startups nurtured within this programme are often eligible for seed funding, which helps them transition from ideation to early-stage development.

- d. *Collaborations with Industry and NGOs:* TTU has developed partnerships with various industry players, government agencies and non-governmental organizations to provide comprehensive entrepreneurial support. Collaborations with organizations like the National Board for Small Scale Industries (NBSSI), the Ghana Enterprises Agency (GEA) and local banks ensure students have access to essential funding and advisory services. These partnerships enable TTU to offer specialized training sessions, entrepreneurship bootcamps and pitch competitions that provide networking and exposure to industry players.
- e. *Entrepreneurial Skills Development Workshops:* TTU organizes regular workshops to develop practical entrepreneurial skills, covering topics like digital marketing, financial planning, customer service, negotiation and project management. The workshops often feature guest lecturers from successful entrepreneurs and TTU alumni, offering students real-world perspectives and strategies for overcoming challenges in the business landscape. These skills-based workshops are particularly popular among students in technical and engineering programmes, who often aim to establish startups in their fields of study.
- f. *Student Business Plan Competition:* TTU hosts an annual business plan competition where students pitch innovative ideas to a panel of judges for a chance

to win seed funding and other forms of support. The competition fosters a competitive spirit, encourages innovative thinking and allows students to gain valuable feedback on their business ideas. Winners of the competition receive funding and mentorship and successful business plans are often selected for the university's incubation programme.

- g. Practical Training and Internship Opportunities:* recognizing the importance of hands-on experience, TTU ensures that students gain practical exposure to entrepreneurship through internships and field trips to local businesses. These experiences help students understand business operations, logistics and customer relations and build the skills essential for launching their own businesses. The partnerships with local businesses provide internship placements, particularly for students in the fields of business, engineering and applied sciences.
- h. Community and Social Entrepreneurship Initiatives:* TTU places a strong emphasis on social entrepreneurship, encouraging students to create businesses that address local social challenges such as unemployment, environmental sustainability and poverty. Through community-based projects, students learn to design and implement business solutions that positively impact society, fostering a sense of responsibility and social awareness.
- i. Research and Development in Entrepreneurship:* the university encourages faculty and students to engage in research related to entrepreneurship, such as studies on market trends, consumer behaviour and innovative business models. This research not only contributes to academic knowledge but also provides students with data-driven insights to shape their entrepreneurial strategies. Research

findings are often shared through TTU's journals, conferences and seminars, building a supportive community around entrepreneurship on campus.

- j. Post-Graduation Support and Alumni Network:* TTU offers post-graduation support to alumni who pursue entrepreneurship, including mentorship, access to university resources and continuous professional development opportunities. The alumni network serves as a valuable platform for former students to collaborate, share experiences and explore joint business ventures. The university regularly invites successful alumni entrepreneurs to mentor current students, helping build a cycle of support that benefits the wider TTU community.

TTU's Entrepreneurship Development Programme has significantly contributed to students' EI and skills, preparing them to become job creators rather than job seekers. Graduates of TTU often go on to establish their own businesses, particularly in sectors such as engineering, technology, agriculture and creative arts, reflecting the university's impact on Ghana's economic landscape. By emphasizing practical learning, mentorship and networking opportunities, TTU's Entrepreneurship Development Programme is actively shaping the entrepreneurial spirit in Ghana's youth and contributing to the country's broader economic growth.

3.6.2 Challenges to Entrepreneurship Education and Practical Training in Ghana

One of the main barriers to effective EE in Ghana is the lack of resources and institutional support. Many educational institutions face financial limitations, restricting their ability to offer comprehensive entrepreneurship programmes that include experiential components

such as startup incubators, funding for student businesses and collaboration with industry experts (Mensah and Adjei 2023). Consequently, students often graduate with theoretical knowledge of entrepreneurship but lack the practical skills required to start and sustain their own businesses. Furthermore, the absence of a supportive entrepreneurial ecosystem limits graduates' ability to translate their entrepreneurial intentions into action. In particular, young entrepreneurs often face difficulties in accessing financial capital, networks and mentorship - resources that are critical for sustaining business ventures in a competitive market. In this context, EE needs to evolve, emphasizing practical learning and providing students with access to a supportive entrepreneurial infrastructure (Ansah and Anane 2022).

Recent studies highlight the mediating role of practical learning in reinforcing entrepreneurial intentions among graduates. Practical learning - encompassing internships, project-based learning and interaction with industry professionals - bridges the gap between theory and practice, enhancing students' readiness for entrepreneurial endeavours. Through hands-on learning, students can experience real-world challenges, develop problem-solving skills and gain confidence in their entrepreneurial abilities (Nketia and Agyemang 2021). This practical exposure is particularly crucial in contexts like Ghana, where traditional employment pathways are limited and graduates must be adaptable and resourceful. Empirical evidence suggests that graduates who participate in experiential learning opportunities are more likely to start their own ventures. A study by Donkor et al. (2020) found that students with access to practical training showed higher entrepreneurial intentions and were more resilient in overcoming startup challenges.

Similarly, research by Amankwah and Frimpong (2022) demonstrated that students who engaged in entrepreneurial internships reported increased self-efficacy and a stronger intention to pursue entrepreneurship after graduation.

3.6.3 Approaches to teaching entrepreneurship

Entrepreneurship education has seen immense transformation over the years, with educators adopting innovating pedagogical approaches to effectuate business venture creation mindset among students. Scholars have investigated how to best teach entrepreneurship to obtain better results (Lackéus 2020b). Some of the approaches to teaching entrepreneurship are discussed as follows.

3.6.3.1 Traditional lecture-based approach

The traditional lecture-based approach is rooted in the transmission model of education, where knowledge is delivered from instructors to students (Fayolle *and* Gailly 2008; Mukesh, Pillai, and Mamman 2020). This approach is useful for imparting theoretical knowledge on entrepreneurship, including business planning, market research, and financial management (AbdulRafiu et al. 2025). However, critics argue that this method lacks engagement and fails to develop practical entrepreneurial skills (Smith *and* Brown 2022).

3.6.3.2 Experiential learning

Effective entrepreneurship education (EE), according to Lackéus (2020a), requires that students develop an entrepreneurial spirit. The author emphasizes the importance of

integrating hands-on learning opportunities and authentic engagement with real-world challenges to achieve this goal. Similarly, Nabi et al. (2017b) and Collins et al. (2018) highlight that experiential, action-oriented learning strengthens students' entrepreneurial competencies, attitudes, and behaviours. Kolb's (2014) Experiential Learning Theory reinforces this, proposing that meaningful learning occurs through a cyclical process of experience, reflection, conceptualization, and action. Manimala and Thompson (2017) further describe experiential learning environments as those that incorporate case studies, practitioner collaborations, simulations, workshops, and group projects - each fostering student-centred and experience-based engagement. Sukavejworakit et al. (2018) likewise note that students' active participation is a defining characteristic of EE. While experiential learning promotes open-ended exploration and creative problem-solving, it does not preclude the establishment of clear instructional goals. As Lackéus and Middleton (2018) explain, the "openness" of outcomes refers to the diversity of possible solutions and learning pathways that emerge as students apply theory to practice, rather than the absence of defined objectives. In this sense, instructors still set overarching learning outcomes - such as enhancing opportunity recognition, creativity, teamwork, and risk management - while allowing flexibility in how students achieve these outcomes through practical engagement. This balance between structure and autonomy is what makes experiential EE both rigorous and transformative.

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Adoption of the experiential learning in EE has been recognized for its capacity to increase students' understanding of socioeconomic barriers. For instance, according to Bell and Bell (2020), students that engage in experiential learning may be able to

articulate entrepreneurial behaviours in response to a certain socioeconomic circumstance. This revelation indicates that they are ready for a future in business, which makes it particularly pertinent. Accordingly, this research shows that postgraduates' motivation to engage in entrepreneurship even after graduation is enhanced when university students, motivated by successful experiential learning, exhibit an entrepreneurial attitude.

Entrepreneurship curriculum should engender entrepreneurial intentions of the students, and real-world experience in EE might help advance this goal (Anwar 2017). Universities are well regarded for being breeding grounds for entrepreneurs. Therefore, to create the understanding of entrepreneurial intentions, society's attention needs to be directed to the adoption of experiential learning methods (Youssef et al. 2021). Because of this, research on educational entrepreneurship in higher education, including that conducted by Abdullah and Rahman (2015), suggests creating challenging learning opportunities to encourage entrepreneurship and the growth of creative problem-solving skills to assist students' plans for entrepreneurship.

There is a need for the development of creative problem-solving skills to help students with their entrepreneurial goals. However, **while** acknowledging the critical role of experiential learning in fostering entrepreneurial development among university students, one important aspect often remains underexplored - the extent to which entrepreneurship education is truly experiential in nature. The significance of how much of it is experiential has been overlooked by many academics. According to Qazi et al. (2020), an

entrepreneurial ambition is encouraged in university students through experiential learning, with the aim of advancing their entrepreneurial career.

3.6.3.3 Problem-Based Learning (PBL)

Problem-based learning (PBL) is a student-centered approach that involves solving complex, real-world problems. This approach encourages critical thinking, creativity, and collaboration (Wushishi and Usman 2024). Research by Mukesh, Pillai, and Mamman (2020) suggests that PBL fosters self-directed learning and enhances entrepreneurial competence by simulating the challenges faced by entrepreneurs. Similarly, a study by Beaty and Duval-Couetil (2024) emphasized that in entrepreneurship education, PBL integrates creativity and knowledge application, thereby fostering critical thinking and problem-solving abilities essential for entrepreneurial success.

PBL is often integrated with other pedagogical models to enhance its effectiveness. For example, Project-Based Entrepreneurial Learning (PBEL), a blended model combining PBL with project-based learning, has been shown to drive successful startup creation among university students. A study by Beaty and Duval-Couetil (2024) revealed, the PBEL model enables students to progress from prototypes to business products, underscoring its efficacy in fostering entrepreneurial skill

3.6.3.4 Action Learning

Action learning involves students working on entrepreneurial projects while receiving feedback from mentors, peers, and instructors (Canavesi & Ravarini 2024). According to

Mukesh et al. (2020), action learning helps students develop confidence, decision-making skills, and resilience. This approach is particularly effective in fostering entrepreneurial mindset and leadership skills.

3.6.3.5 Lean Startup Methodology

The lean startup methodology, developed by Ries (2011), focuses on rapid prototyping, customer feedback, and iterative product development. The lean startup methodology emphasizes rapid prototyping, customer feedback, and iterative product development. Central to this approach is the "build-measure-learn" loop, where entrepreneurs develop a minimum viable product (MVP), measure customer responses, and learn from the feedback to make necessary adjustments. This iterative process is widely adopted in entrepreneurship courses to teach students how to develop scalable business models (Teterin, 2024).

Finally, EE has been categorized into practice-based or theory-based or combination of the two (Ratten and Jones 2018; Miliou *and* Ioannou 2024). Previously, Pittaway and Edwards (2012) categorized EE into three approaches including teaching "about," "for" and "through." Research has further revealed that the majority of entrepreneurship education is usually the "about" method which is carried out typically in a classroom setting without engaging students in any experiential learning (Stovang and Nielsen 2015; Al Kharusi et al. 2023). In the view of many researchers (e.g., Linton *and* Clinton 2019; Al Kharusi et al. 2023), EE should become more "through" oriented and less "about" and "for" oriented. EE refers to instructional approaches that weave entrepreneurial

experiences and idea production into the curriculum. The procedure thereby imparts corporate ideals, attitudes and behaviours. Action, real-world experiences and reflection are some of the points made by Chavez (2025) to suggest that EE should simulate real venture creation.

Summary

The diverse approaches to teaching entrepreneurship reflect the evolving nature of the field. Combining multiple methods can provide a holistic learning experience, equipping students with both theoretical knowledge and practical skills. This integration is significant because theoretical understanding nurtures analytical thinking and strategic decision-making, while practical experience builds creativity, resilience, and problem-solving abilities essential for real-world venture creation. Together, these competencies enable graduates to navigate uncertainty, identify opportunities, and contribute meaningfully to innovation and job creation within their communities.

3.7 Entrepreneurial intentions (EI)

According to Tsaknis *and* Sahinidis (2020), entrepreneurial intention refers to an individual's conscious and deliberate willingness or inclination to engage in entrepreneurial activities in the future. Entrepreneurial intentions and actions are closely related (Esfandiar et al. 2019; Neneh 2019). Recently, researchers have concentrated on the topic of entrepreneurial career intention (Miao et al. 2018; Park et al. 2020; Vasilescu, Crivoi *and* Munteanu 2025), highlighting the claim that intentions are an essential first step towards actual entrepreneurial start-up behaviours and success later on in a

well-established firm (Neneh 2019). In addition to adverse financial conditions and environmental factors, prior studies have observed that individual factors such as the lack of regular professional career options (Meoli et al. 2019), contextual and environmental factors (e.g., Ndofirepi, 2022; Shrestha et al., 2024), individual factors (e.g., Neneh 2019; Van Ness et al., 2020; Jiang et al., 2022), age (Meoli et al. 2019), and gender (Arafat et al. 2020) may influence entrepreneurial career intention. This study is underpinned by Ajzen's (1991) TPB which is a widely accepted framework for understanding and predicting human behaviour. The theory basically bases people's behavioural intentions on three primary factors: perceived behavioural control, subjective norms and attitudes towards the behaviour. In the context of entrepreneurship, these factors can help us understand how EE influences individuals' intention to engage in entrepreneurship activities.

3.7.1 Entrepreneurship education and student entrepreneurship intention

Researchers such as Guo and Ng (2024) have identified EE is acknowledged as a useful instrument for fostering and promoting entrepreneurship and entrepreneurial intention (EI) and has a good explanatory power for entrepreneurial behaviour as a behavioural intention (Boldureanu et al. 2020). These findings spurred academics to examine how EE affects the emergence of personal entrepreneurial purpose, with varying outcomes, particularly in students. According to research EE positively influences EI and entrepreneurship competence (Byun et al. 2018; Turner and Gianiodis 2018; Boldureanu et al. 2020; Hardie et al. 2020; Kaur et al. 2025) especially in relation to knowledge, abilities and dispositions required for launching, operating and expanding business start-

ups (Neck and Corbett 2018). Furthermore, some other studies (e.g., Nowiski et al. 2019; Badri *and* Hachicha 2019; Nabi et al. 2019) have indicated that EE has been demonstrated to change students' thought patterns and encourage them to acquire a more thorough understanding of entrepreneurship.

On the other hand, Iwu et al. (2019) issued a warning against exaggerating the foregoing conclusions have argued that EE discourages and negatively affects entrepreneurial intention indicating that there is no meaningful association between these two categories. Others contend that although there is some evidence that EE helps students become more entrepreneurial, the impact of university-level EE has been comparatively lackluster (Anwar 2016; Tan et al. 2020) insufficient in guiding students towards becoming entrepreneurs (Sukavejworakit et al. 2018); and especially dubious in influencing students' transition to graduate employment (Abdullah et al. 2017; Saknis *and* Sahinidis 2020).

In Ghana, entrepreneurial intention among graduates is influenced by several factors, including the perceived feasibility and desirability of entrepreneurship, personal attitudes and the social and economic environment (Kwabena and Opoku 2023). However, studies indicate that while many graduates express a willingness to pursue entrepreneurship, only a small percentage act on these intentions (Akoto and Agyei 2022). In the view of these authors, this gap between intention and action is attributed to limited access to resources, financial constraints and insufficient exposure to practical entrepreneurial experiences during their studies. EE has a significant role in shaping these intentions by

building confidence and providing exposure to entrepreneurial knowledge. Research has shown that students who undergo structured entrepreneurship training are more likely to develop positive attitudes towards entrepreneurship, thus strengthening their intentions to become entrepreneurs (Zhang, Duysters, and Cloudt 2024; Shrestha, Pradhan, and Parajuli 2024).

Thus, while EE has been widely recognized for its potential to foster entrepreneurial intention (EI) and competencies essential for launching and managing business ventures, there is a nuanced debate regarding its effectiveness. A substantial body of research supports the positive role of EE in enhancing entrepreneurial knowledge, skills and dispositions among students, contributing to a more entrepreneurial mindset and behavioural intention (Neck and Corbett 2018; Boldureanu et al. 2020). However, some studies caution against overstating these benefits, suggesting that the impact of EE, especially at the university level is limited in motivating students to pursue entrepreneurship as a career or ensuring their smooth transition to employment post-graduation (Abdullah et al. 2017; Iwu et al. 2019; Ou *and* Kim 2024). This divergence in findings highlights the need for further research to understand the varied impacts of EE across different educational contexts and student populations, aiming to identify factors that could make EE more consistently effective in fostering entrepreneurial careers.

3.8 The mediating role of practical learning in programmes of study

Passaro et al. (2018) state that key factors influencing the development of entrepreneurial intents include the level of higher education as well as the particulars of educational

activities (training and practice-based versus theory-based). According to researchers such as Szczepanik and Casais (2021) students' majors can influence their proclivity towards entrepreneurship since the knowledge they acquire can affect opportunity identification orientation as well as business management self-belief. According to Khan and Abdullah (2019), education has the potential to alter deeply ingrained conceptual frameworks, which could enable people to recognize more possibilities or regard themselves as entrepreneurs. Mueller (2018) stressed that this is not always the case, despite Mueller, (2011) reminding us in their earlier work that "teaching people about the realities of entrepreneurship may increase their entrepreneurial self-efficacy, but at the same time reduce the perceived desirability of starting a company" (Sukavejworakit et al. 2018). Teachers who educate their pupils on the difficulties and dangers of launching a business may deter others from pursuing an entrepreneurial lifestyle, but they will also be better equipped to select appropriate awareness techniques (Anwar 2017).

3.9 Research gap

The existing literature underscores the importance of experiential learning, hands-on activities and prior work experience in EE as key elements in fostering entrepreneurial intentions among students. Studies show that exposure to practical experiences, internships and mentorship can enhance entrepreneurial self-efficacy, thereby boosting students' intentions to pursue entrepreneurship (Rideout and Gray 2019; Neck et al. 2020). This has led to an increasing emphasis on experiential and work-based learning models in entrepreneurship curricula, highlighting their positive impact on entrepreneurial attitudes and behaviours (Fayolle et al. 2019; Lackéus 2020b).

However, a notable gap exists concerning the role of discipline-specific practical learning embedded in students' academic majors in examining the EE-EI nexus. While general experiential learning approaches are recognized, few studies have explored how the unique practical components of different academic fields might mediate students' engagement with entrepreneurship education and influence their entrepreneurial self-efficacy and intentions. This oversight is critical, as practical learning in a student's primary fields of study may interact differently with entrepreneurship training, potentially affecting entrepreneurial outcomes in ways not yet fully understood (Liñán et al. 2019).

Furthermore, since self-efficacy is a primary predictor of EI and behaviour (Bandura 1997), understanding how discipline-specific practical training influences entrepreneurial self-efficacy could offer deeper insights into tailoring EE. As different fields cultivate distinct skill sets, practical learning within each discipline may contribute uniquely to students' entrepreneurial confidence and readiness, suggesting that EE might need to be customized based on academic majors to enhance its effectiveness (Hsu et al. 2019; Volery and Lord 2020).

Finally, the TPB widely employed in entrepreneurship research has not fully accounted for the mediating effects of such embedded, discipline-specific practical learning. While TPB highlights attitudes, SN and PBC as key predictors of intentions (Ajzen 1991), it overlooks how variations in educational contexts and experiential exposure across academic majors may alter students' EI. Researchers, including Fayolle et al. (2019) and

Feola et al. (2019) have demonstrated TPB's applicability in entrepreneurship studies. However, TPB's framework may require expansion or adaptation to encompass these nuanced influences. Addressing this gap could provide valuable insights into the diverse factors shaping entrepreneurial self-efficacy and intentions and it could also inform more customized and effective approaches to EE.

3.10 Conceptual framework

This study investigated how entrepreneurship education (EE) influences students' entrepreneurial intention (EI) through the mediating role of Practical Learning in Programmes (PLP) at Takoradi Technical University (TTU). The framework is grounded in Ajzen's (1991) Theory of Planned Behaviour (TPB) and further extended through insights from Experiential Learning Theory (Kolb, 1984) to capture the influence of students' experiential academic orientations.

According to TPB, an individual's intention to engage in entrepreneurship is determined by three key antecedents: Attitude Toward Entrepreneurship (ATE), Subjective Norm (SN), and Perceived Behavioural Control (PBC). These represent, respectively, (1) one's positive or negative evaluation of entrepreneurship, (2) the perceived social pressure to engage or not engage in entrepreneurial behaviour, and (3) the perceived ability or self-efficacy to start and manage a business. Together, these components determine the strength of an individual's entrepreneurial intention (EI).

Building on this, the framework positions Entrepreneurship Education (EE) as the primary independent variable, hypothesized to exert both direct and indirect effects on EI. EE shapes students' entrepreneurial intentions by exposing them to entrepreneurial knowledge, role models, and experiential activities (Fayolle & Gailly, 2015; Nabi et al., 2017). Through these exposures, EE is expected to enhance:

- Attitude Toward Entrepreneurship (ATE) by increasing perceived desirability of entrepreneurship;
- Subjective Norm (SN) by influencing students' perception of social approval from peers, family, and faculty; and
- Perceived Behavioural Control (PBC) by developing self-efficacy and confidence in entrepreneurial ability.

However, empirical studies applying TPB to entrepreneurship education (e.g., Nabi et al., 2017; Walter & Block, 2016) have shown mixed results. Some indicate a positive relationship between EE and EI, while others find weak or inconsistent effects (Hahn et al., 2020; Dao et al., 2021). These inconsistencies have led researchers (e.g., Van Gelderen et al., 2018; Manstead, 2018) to suggest expanding TPB to incorporate additional contextual and pedagogical factors that explain how entrepreneurship education translates into entrepreneurial intentions. Indeed, literature has shown that the effects of EE on EI are often context-dependent and mediated by students' learning environments and academic orientations (Walter & Block, 2016; Nabi et al., 2022). This study introduces Practical Learning in Programmes (PLP) as a mediating construct representing the degree to which students' academic majors emphasize experiential, practice-based learning. PLP captures how project work, simulations, internships, and

industry engagement embedded in students' academic programmes influence students' ability to connect EE content to real-world entrepreneurial application.

The framework therefore predicts that EE will have a direct positive effect on ATE, SN, and PBC, and an indirect effect through PLP. Furthermore, ATE, SN, and PBC are expected to directly predict EI, consistent with TPB. The inclusion of PLP enhances the explanatory power of the model by recognizing that entrepreneurial intention is not only a product of entrepreneurship education but also of how that education is experienced within students' disciplinary and institutional contexts.

In summary, this conceptual framework integrates TPB's psychological components with the pedagogical orientation of experiential learning associated with students' programmes of study. It emphasizes that the development of entrepreneurial intention among TTU students depends on both what they learn (EE content) and how they learn in the core courses and programmes in their academic departments (PLP context).

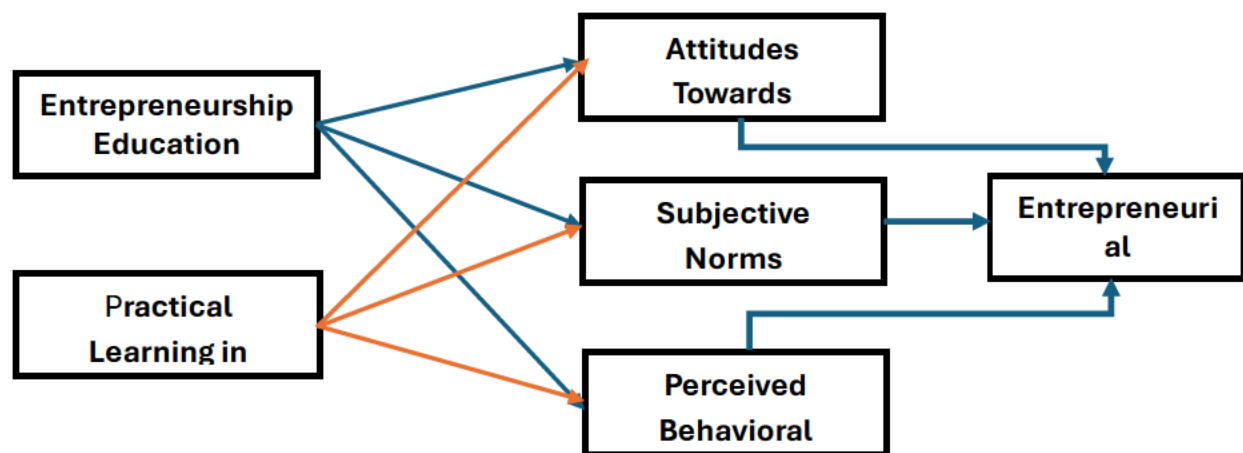


Figure 3.1: Conceptual model

Source: Researcher's own (2024)

As seen in Figure 3.1, the conceptual framework presents the mediating role of practical learning in academic programmes within the context of EE and its impact on EI in the following elucidation:

1. Entrepreneurship Education (EE): EE encompasses structured learning experiences - both curricular and co-curricular - designed to equip students with entrepreneurial knowledge, skills, and mindsets (Fayolle & Gailly, 2015; Lackéus, 2020). It includes theoretical instruction (e.g., business planning, innovation concepts) and practical exposure (e.g., projects, simulations, and mentorship). In this study, EE is conceptualized as the independent variable influencing students' cognitive and behavioural dispositions toward entrepreneurship.
2. Attitude Toward Entrepreneurship (ATE): ATE reflects students' evaluative judgments about entrepreneurship as a desirable and viable career option. It is shaped by how EE influences students' perceptions of opportunity, risk, and reward (Liñán & Fayolle, 2015). In this framework, EE is expected to enhance ATE by inspiring positive beliefs about entrepreneurship's value, relevance, and personal benefits.
3. Subjective Norm (SN): SN represents perceived social influences - how much students believe significant others (family, peers, faculty, or mentors) approve of entrepreneurial activities. EE may strengthen SN by exposing students to entrepreneurial role models and peer networks that normalize entrepreneurship as a legitimate and respected career pathway (Shirokova et al., 2016; Nabi et al., 2018).

4. Perceived Behavioural Control (PBC): PBC refers to students' confidence in their ability to start and manage a business successfully. EE contributes to this through experiential learning, simulations, and mentoring activities that build entrepreneurial self-efficacy and problem-solving competence (Otache et al., 2022; Rauch & Hulsink, 2015).
5. Practical Learning in Programmes (PLP) (Mediating Variable): PLP represents the extent to which students' academic programmes are experientially oriented, emphasizing applied projects, internships, industry collaboration, and problem-based learning. It mediates the relationship between EE and the Theory of Planned Behavior (TPB) antecedents - Attitude Toward Entrepreneurship (ATE), Subjective Norms (SN), and Perceived Behavioral Control (PBC) - by enabling students to internalize entrepreneurial concepts through authentic practice.

Importantly, this study distinguishes Experiential Entrepreneurship Education (EEE) from the Practical Learning Orientation (PLO) of academic programmes. As noted by Motta and Galina (2023), experiential learning is a teaching approach applied within entrepreneurship education to engage students in real-world entrepreneurial activities. In contrast, PLO reflects the broader pedagogical culture of a student's discipline - whether it is predominantly practical, competency-based, or theoretical in nature (CTVET, 2022; Becher and Trowler, 2001). Thus, while EEE shapes how entrepreneurship is taught, PLP or PLO shapes how it is experienced and internalized across different academic contexts.

6. Entrepreneurial Intention (EI): EI represents the conscious state of mind that precedes entrepreneurial action (Krueger et al., 2000). It reflects the student's willingness to pursue entrepreneurial activity in the future and serves as the dependent variable in the framework.

The conceptual relationships among the constructs are presented as follows:

Direct Role of EE: EE is posited to have direct effects on ATE, SN, and PBC. Through pedagogical exposure to entrepreneurship concepts and activities, students develop positive attitudes, perceive stronger social support, and gain confidence in their entrepreneurial capabilities.

Mediating Role of PLP: PLP mediates the relationship between EE and each TPB antecedent. Students who experience practice-based learning - through projects, simulations, or real-life business engagement - are more likely to internalize entrepreneurial knowledge and transform it into intention in the following way:

- *On ATE:* PLP fosters positive perceptions of entrepreneurship reinforced by students' experiences and practices in their programmes of study.
- *On SN:* PLP strengthens social influence through faculty-based mentorship programs and collaborative projects that enhance peer and faculty support.
- *On PBC:* PLP boosts confidence and perceived control in entrepreneurship through opportunities to apply skills driven by faculty programmes and activities.

Indirect Effects on EI:

EE indirectly influences EI through the mediating effects of PLP and the TPB antecedents. As students engage in practical learning in entrepreneurship courses and their core programmes and projects, their entrepreneurial attitudes, perceived norms, and self-efficacy are reinforced, ultimately leading to stronger entrepreneurial intentions.

3.11 Conclusion

This chapter provided a comprehensive overview of the theoretical framework and literature relevant to understanding the relationship between EE and the development of EI among students. It begins by exploring early thoughts on entrepreneurship, which encompass classical and neo-classical views. In classical thought, the entrepreneur is conceptualized in various roles: as a project manager, a resource organizer and a risk taker. Moving to the neo-classical perspective, the contributions of economists such as Alfred Marshall, who emphasized the role of entrepreneurship in economic equilibrium, Joseph Schumpeter, who saw the entrepreneur as an innovator and disruptor of the market and Frank Knight, who highlighted risk-bearing as central to entrepreneurship were discussed. The chapter also examined the neo-Austrian thought, particularly Israel Kirzner's view of the entrepreneur as someone who identifies opportunities for arbitrage. The relevance of these theoretical underpinnings is then tied to the study, establishing a foundation for investigating entrepreneurial intention development.

The literature review delves into entrepreneurship as an intentionally planned behaviour, where various models of entrepreneurial intention are examined. The TPB is the primary focus, outlining its key components, limitations and new developments. It further

discusses how TPB is applied in fostering entrepreneurial intentions. Other models, such as the Entrepreneurial Event Model by Shapero and Sokol and the Social Cognitive Career Theory are also explored to present a holistic view of how intention is shaped.

In the section on entrepreneurship education, various teaching approaches are analyzed, including experiential learning, case studies and mentorship. The chapter investigates the relationship between these educational approaches and their impact on students' entrepreneurial intentions. Finally, the chapter concludes by presenting a conceptual model for the study, which integrates the discussed theories and literature into a framework that will guide the analysis of entrepreneurship education's effect on students' entrepreneurial intentions. The research's methodological processes are presented in the next chapter.

CHAPTER 4

RESEARCH DESIGN, METHODS AND TECHNIQUES

4.1 Introduction

This chapter outlines the methodological framework used to address the aims and objectives of the study focusing on the mediating effects of practical learning in academic majors of students. A quantitative approach utilizing structural equation modeling (SEM) was adopted to analyze the relationship among variables including EE, PLP, ATE, PBC, SN and EI. This methodology aims to provide a robust framework for understanding how EE in the context of Ghana's technical universities influence students' entrepreneurial desires to engage in entrepreneurship. The research aims to explore how EE influences students' EI and how practical learning experiences embedded in their academic majors mediate this relationship. The chapter covers the ontological and epistemological perspectives, theoretical foundations, research methodology, data collection methods, sampling strategies, analysis approaches, ethical considerations and methodological limitations.

4.2 Ontological Perspective

Ontology concerns the nature of reality and existence (Crotty, 1998; Saunders et al., 2019). From a positivist ontological standpoint, this study assumes that reality exists independently of individual perceptions and can be objectively observed, measured, and explained. In other words, social phenomena - such as students' entrepreneurial intentions (EI) and their exposure to entrepreneurship education (EE) - are regarded as

part of a single, knowable reality that can be systematically studied through empirical investigation.

Within this worldview, entrepreneurial intention is not treated as a subjective or socially constructed experience but as a measurable psychological disposition that exists objectively within individuals and can be quantified across populations. This aligns with the positivist belief in an objective reality governed by laws and regularities that can be discovered through observation and statistical analysis.

Accordingly, this research adopts the view that students' EI, attitudes, and perceived behavioural control can be empirically measured and modeled using quantitative tools such as structural equation modeling (SEM). This allows for the identification of cause-and-effect relationships between entrepreneurship education (EE), the antecedents of intention (ATE, SN, and PBC), and the mediating variable (Practical Learning in Programmes - PLP).

Thus, the ontological position of this study is grounded in objectivism, which posits a single reality that exists independent of human interpretation. This stance aligns with the quantitative nature of the research, enabling findings to be generalized beyond the study context and providing a foundation for testing theoretical propositions derived from the Theory of Planned Behaviour (Ajzen, 1991).

4.2 Ontological Perspective

Ontology concerns the nature of reality and existence - that is, what can be known and what constitutes truth in research (Crotty, 1998; Bryman, 2016). From a positivist ontological standpoint, this study assumes that reality exists independently of human perception and can be observed, measured, and explained through empirical evidence. In this worldview, social phenomena such as students' entrepreneurial intentions (EI) and their exposure to entrepreneurship education (EE) are treated as objective realities governed by underlying regularities that can be systematically discovered (Saunders, Lewis, & Thornhill, 2019; Cohen, Manion, & Morrison, 2018).

Within this framework, entrepreneurial intention is conceptualized not as a subjective or socially constructed feeling but as a measurable psychological disposition that manifests in observable patterns across populations. This aligns with the positivist belief in a single, knowable reality, which allows researchers to test hypotheses, quantify relationships, and predict outcomes through statistical models. Consequently, variables such as Attitude Toward Entrepreneurship (ATE), Subjective Norm (SN), Perceived Behavioural Control (PBC), and Practical Learning in Programmes (PLP) are treated as quantifiable constructs whose relationships can be empirically examined using quantitative analytical tools such as Structural Equation Modelling (SEM).

Hence, the ontological position of this study is grounded in objectivism, positing that phenomena exist independently of individuals' consciousness and that valid knowledge can be generated through systematic observation and measurement. This view supports

the positivist paradigm, which underpins the quantitative methodological orientation of this research, allowing findings to be generalized beyond the study context and providing an objective basis for testing the theoretical propositions of Ajzen's (1991) Theory of Planned Behaviour.

4.3 Epistemological Perspective

The epistemological foundation of this research is rooted in positivism, a paradigm that views knowledge as objective, measurable and observable, which is particularly suited to quantitative research (Creswell and Creswell 2023). Under this approach, EE and EI are considered as measurable constructs whose relationships can be quantified, analyzed and generalized within a broader population. Positivism supports the notion that objective realities can be discovered through systematic observation and structured methods, making it an ideal fit for studying the relationship between EE, practical learning and EI in academic settings (Saunders, Lewis and Thornhill 2019).

EI as studied derive from measurable antecedents influenced by the TPB constructs, including attitudes, SN and PBC (Ajzen 1991). In this view, TPB provides a structured framework for understanding how intentionality in entrepreneurship is formed and allows the study to quantify how educational interventions may increase EI through practical learning experiences embedded in students' academic majors. This aligns with a positivist epistemology, which posits that structured educational experiences can be tested to determine their impact on student behaviours (Ajzen, 1991; Huezo-Ponce et al., 2022).

Furthermore, the use of Structural Equation Modeling (SEM) as the primary analytical tool aligns with this positivist approach. SEM, particularly with Smart-PLS, enables the researcher to quantify complex, multi-layered relationships and test hypotheses on mediating effects, thereby contributing to a systematic and replicable understanding of EI formation (Hair et al. 2021). By operationalizing constructs such as “EI” and “practical learning” as quantifiable variables, the research embraces an epistemology that prioritizes empirical evidence and objective truth, which are foundational to positivist research.

Additionally, while positivism is central, this research acknowledges that educational experiences are not universally identical and that the subjective impact of practical learning may vary among individuals. However, within this positivist framework, the research assumes that standardized measurements can still capture the generalizable trends and causal relationships necessary to identify EE’s effect on intentions across a large sample (Guba and Lincoln 2021). This assumption allows for both individual variability in responses and broad generalizability across the study population, aligning with positivist objectives to achieve insights that hold across diverse academic settings. In summary, the epistemological perspective in this study is based on a positivist stance that seeks objective, empirical understanding of how EE, through practical learning in academic programmes, influences EI among students. Through this lens, knowledge is generated by systematically testing theories and hypotheses using measurable data, facilitating a structured analysis of causal and mediating relationships.

4.4 Theoretical Perspective

This research is grounded in the TPB (Ajzen 1991), which posits that intentions are the primary predictors of behaviour and are shaped by attitudes, subjective norms and perceived behavioural control. While TPB has been widely used in entrepreneurship studies, this research extends the framework by incorporating practical learning environment as a mediating variable. Thus, TPB serves as a foundation for understanding how EE shapes students' EI. Additionally, the research integrates elements of experiential learning theory (Kolb 1984) to examine how practical learning experiences in academic majors mediate the relationship between EE and students' intentions, providing a comprehensive framework for analysis. By focusing on practical learning in academic majors, this study aims to provide a nuanced understanding of how experiential factors influence entrepreneurial self-efficacy and consequently, EI. This theoretical perspective is reinforced by recent studies emphasizing the significance of practical experience in developing entrepreneurial competencies (Neck and Corbett 2018; Rideout and Gray 2019; Chen et al. 2024).

4.5 Methodology

The research was structured within a quantitative research framework, chosen for its ability to objectively analyze relationships between variables, measure constructs and test hypotheses within a large sample. This approach enables a systematic, replicable investigation into the ways EE may foster EI, accounting for the mediating role of practical learning (Creswell and Creswell 2023). Rooted in the positivist epistemology aligned to the TPB (Ajzen 1991), the research design follows the deductive approach. A deductive

approach is suitable for testing established theoretical frameworks in a structured manner and allows for hypothesis testing to validate or refute theoretical assumptions about the influence of EE and practical learning on EI (Sekaran and Bougie 2020).

Furthermore, the research used a cross-sectional survey design as its data collection strategy. Cross-sectional designs are effective for capturing data at a single point in time, which is efficient for this study's objective of measuring intentions and attitudes towards EE and practical learning. This design also enables the identification of trends across a diverse student population, which is crucial for examining the differences in entrepreneurship intention formation among students in varied academic settings (Bryman 2021).

4.6 Data and Methods of Collection

Data were collected through a structured survey questionnaire (Appendix 12), which was administered online. It is structured in four sections covering personal information (demographic); programme of study (mainly to establish student's career intentions and nature of programme); nature of entrepreneurship course delivery; and finally, the last section seeks to examine students' intentions towards establishing their own firms modelled on established EI. Some sections of the questionnaire were adopted from Liñán and Chen's (2009) as cited by Doe, Smith, and Lee (2020). Section A, covered the personal (demographic) characteristics of the respondents and sought information on respondents' sex, age, marital status, employment history, family business background and programmes of study. Section B covered EE delivery made up of eight question items

describing the nature of their entrepreneurship course in terms of content and delivery methods. Using a five-point Likert scale approach, the respondents had the options of indicating strength of agreement (ranging from 'Strongly Agree' to 'Strongly Disagree') to the various question items.

Section C covered a single item question that sought to establish the extent to which the respondents' perceived amount of practical learning involved in their chosen programmes of study (PLP). The respondents had options of choosing among 'no extent', 'little extent', 'some extent', 'large extent' and 'very large extent'. This section represented the mediating factors in the examination of the relationship between EE and students' EI. Section D sought to obtain data for the dependent variable (EI). Four question items adapted from Linan and Chen (2009 cited in Doe, Smith, and Lee 2020) were measured on a 7-point Likert scale to establish the strength of the respondents' agreement to them. The scale spanned between "Strongly Disagree" and "Strongly Agree". On the same scale, the section measured three other constructs that represented the antecedents of EI (Ajzen 1991). These included ATE, SN and PBC. ATE involved four question items adapted from Youssef et al. (2020); SN involved four question items adapted from Asimakopoulos et al. 2019, as cited in Baumann et al. 2024; and Ephrem et al. 2019); while PBC involved five question items adapted from Linan and Chen (2009, as adopted by Do and Thu 2023).

Prior to collecting the data, permission was sought from the TTU to engage students as participants in the research. Class captains for each of the sampled classes were

contacted to help share the electronic Google Forms link of the research instrument on their group WhatsApp platform. The responses and data were received via the researcher's email and summarized in a Microsoft Excel format. The settings of the Google Forms were set to exclude the identity of the respondents in order to ensure anonymity and confidentiality of the respondents.

4.7 Study organization

The study was conducted at the TTU, located in Takoradi in Ghana's Western Region. TTU is one of the country's leading institutions for technical and vocational education and training. Established as Takoradi Polytechnic in 1954 and upgraded to university status in 2016, TTU has a mission to produce highly skilled graduates equipped for the dynamic job market. The university is committed to providing hands-on training, research opportunities and industry partnerships to enhance practical skills, making it a key player in Ghana's higher education landscape.

4.7.1 Faculties

TTU offers a diverse array of programmes designed to meet the needs of various sectors, including engineering, applied sciences, business and technology. Here are the primary academic faculties and departments:

Faculty of Engineering: includes programmes in Civil Engineering, Mechanical Engineering, Electrical and Electronic Engineering and Petroleum Engineering known for its hands-on laboratory facilities and workshops, which provide practical experience alongside theoretical learning.

Faculty of Applied Arts and Technology: offers programmes in Graphic Design, Interior Design and Fashion Design. This faculty emphasizes creative and technical skills in various forms of art, preparing students for industries like media, interior décor and design.

Faculty of Applied Science and Technology: the programmes include Computer Science, Information Technology, Hospitality and Tourism Management and Environmental Science. The faculty focuses on integrating modern technology and scientific principles to address contemporary issues, with a particular emphasis on environmental sustainability and the tourism industry.

Faculty of Business and Management Studies: offers courses in Marketing, Accounting, Banking and Finance, Procurement and Supply Chain Management and Entrepreneurship. This faculty is highly popular among students and offers business-related internships and industry partnerships.

Faculty of Built and Natural Environment: provides programmes in Building Technology, Real Estate and Land Management. These courses provides students with skills relevant to urban development, real estate and property management.

Centre for Distance and Continuing Education: offers opportunities for working professionals and individuals who wish to upgrade their qualifications through flexible learning formats. The programmes covers various fields, with a focus on supporting continuous professional development.

4.7.2 Student Distribution

With a diverse student population, TTU attracts students from across Ghana, especially the Western Region and nearby areas. The institution hosts students at the certificate, diploma, bachelor's and master's levels.

- a. *Undergraduate Programmes:* Most students at TTU are enrolled in Higher National Diploma (HND) and Bachelor of Technology (BTech) degree programmes, with engineering and Applied Science faculties having the highest student populations.
- b. *Gender Distribution:* While traditionally male-dominated fields like engineering still attract more male students, initiatives to increase female enrollment in STEM (science, technology, engineering and mathematics) courses have begun to show progress.
- c. *Graduate Programmes:* TTU has introduced master's programmes, particularly in applied fields and management, which are gradually increasing in enrollment. These programmes cater to professionals seeking advanced training.

TTU emphasizes a strong industry collaboration model, with numerous partnerships with companies in the oil, gas, mining and manufacturing sectors. These partnerships provide students with internship opportunities, hands-on training and exposure to real-world challenges in the industry, aligning closely with the needs of Ghana's economy.

4.8 Study population

The study covered all students pursuing the Bachelor of Technology (BTech) degree and Higher National Diploma (HND) certificate programmes of the TTU in the Western Region

of Ghana. The records from the TTU Student Record and Management System (SRMS, 2024) showed that the university had about 3 675 students who were currently studying entrepreneurship courses in, at least, one semester in the 2024 academic year. The research target population will therefore involve 2 441 Higher National Diploma (HND) students and 1 234 Bachelor of Technology (BTech) students of the TTU which in total are 3 675 students

4.9 Sampling procedure

The study adopted probability sampling techniques executed in a multi-stage procedure in selecting the respondents. All 28 departments taught entrepreneurship in the semester during which data collection for this study were targeted. Based on the sample estimation formular table suggested by Krejcie and Morgan (1970), a sample size of 351 is adequate for about 4 000. For a population of 3 675 therefore, a minimum sample size of 356 respondents is deemed sufficient. Based on proportional representation of the various department sub-populations, specific numbers of the respondents were targeted (as seen in Appendix 2). However, the responses exceeded the expected sample size since the electronic link to the instrument was shared with students on their various class WhatsApp platforms. Consequently, the final sample size was 537 respondents. A larger than necessary sample size according to Andrade (2020) is more representative of the population and therefore provides more accurate results. Appendix 2 presents distribution of both the targeted sample size and final sample for the study.

4.10 Analysis Strategy

This section outlines the procedures employed to analyze the data collected on the role of EE in developing EI among university students, with a particular focus on the mediating effects of practical learning embedded in academic majors. The data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) via Smart-PLS 4. The analysis includes Confirmatory Factor Analysis (CFA) to assess construct validity, reliability analysis, structural model analyses to examine hypothesized relationships and descriptive statistics, such as frequency tables and measures of central tendency to profile the sample and explore distribution properties.

The structural equation modelling (SEM) analysis was conducted using Smart PLS 4 software. SEM is a flexible and comprehensive methodology for representing, estimating and testing a theoretical model to explain the maximum variance possible (Ramlall 2017). Smart-PLS 4 software was chosen to handle the data analysis due to its flexibility and suitability for exploratory research where sample sizes may vary, allowing for robust path analysis and model testing (Sarstedt et al. 2022). This analysis evaluates the structural relationships of the variables specified in the conceptual model. The report starts with the demographic distributions of the respondents and other descriptive statistics. Confirmatory factor analysis (CFA), which covered reliability, convergent and discriminant validity was conducted and the structural model analysis was conducted using standardized regression.

The Structural Model Analysis was employed to assess the hypothesized relationship among the constructs using standardized path coefficients derived from SmartPLS 4 in order to establish their strengths and directions of the relationships (Sarstedt et al. 2019). To assess the mediating effects of PLP on the relationship between EE and EI, the indirect effects were calculated in Smart-PLS 4. The mediation analysis clarifies whether PLP enhances the relationship between EE and EI, highlighting its significance in embedding hands-on learning within academic majors. According to Preacher and Hayes (2008), the indirect effect is significant if the confidence interval for the bootstrapped path does not include zero.

The validity of constructs and scales were conducted utilizing multiple Likert scales to capture diverse constructs including: 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) for EE; a 5-point Likert scale (1 = No Extent, 5 = Very Large Extent) for Practical Learning in Programmes; a 7-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree) for EI, ATE, SN and PBC. Each scale was tested for reliability and validity to confirm consistency across items and alignment with the study's theoretical framework. Utilizing distinct Likert scales allows for nuanced responses, enabling more accurate analysis of the influence of different educational experiences on students' entrepreneurial perceptions and intentions (Liñán and Chen 2009 as cited in Doe, Smith, and Lee 2020).

In summary, the data analysis process employed in this study was anchored in SEM with Smart-PLS 4 and offers a comprehensive approach to evaluating the proposed relationships. Confirmatory factor analysis (CFA) has validated the constructs, with

checks for reliability, convergent validity and discriminant validity ensuring robust measurement. Path and mediation analyses in the structural model will ultimately test the hypotheses, clarifying the role of practical learning in enhancing EI among students. This methodological rigour will contribute to understanding how EE and practical learning foster EI within diverse academic contexts.

4.11 Ethical considerations

Ethical considerations will be paramount in this study. Informed consent was obtained from all participants prior to data collection, ensuring they fully understand the purpose, procedures and potential risks or benefits of the study (Bryman and Bell 2021). Ethical Clearance (as seen in Appendix 1) was obtained from the Institutional Research Ethics Committee of DUT (IREC 276/22) to proceed with the research process. Informed consent was facilitated by providing participants with detailed information about the study, including objectives, the nature of questions asked and how data will be used and stored. This aligns with research on ethical best practices, which emphasizes transparency in data collection processes to foster trust and avoid the potential exploitation of participants (Resnik 2022).

Confidentiality and anonymity are also critical as they protect participants' identities and ensure that their responses cannot be traced back to them. This is especially important when dealing with students as their academic and career aspirations could be sensitive topics. To uphold confidentiality, personal email addresses were excluded in the settings of the Google Form via which data were received. According to Gelling (2023), secure

data handling practices are vital for ensuring that the participants feel safe to respond truthfully without fear of repercussion. The study also adhered to voluntary participation, allowing participants to withdraw at any stage without any adverse consequences. This respects their autonomy as mandated by ethical guidelines that prioritize participants' freedom to choose without coercion or undue influence (Creswell and Creswell 2023).

To ensure anonymity, no identifying information was requested at any stage of the questionnaire, and participants were represented only by system-generated numerical codes during data entry and analysis. Individual responses were aggregated and analyzed at the group level, ensuring that no single participant could be identified in the reporting of results. According to Gelling (2023), secure and anonymous data handling practices are vital for creating a safe environment in which participants can respond truthfully without fear of repercussion. The study also adhered to the principle of voluntary participation, allowing respondents to withdraw at any time without penalty, in line with ethical research guidelines that emphasize participants' autonomy and informed consent (Creswell & Creswell, 2023).

4.12 Conclusion

This chapter provided a comprehensive overview of the methodological framework utilized to explore the role of EE on students' EI, with a focus on practical learning in academic programmes as a mediating factor. A quantitative approach with SEM was adopted to analyze the relationships between EE, PLP, ATE, PBC, SN and EI. By using a quantitative framework, this methodology ensures objective, measurable and

generalizable insights into how Ghana's TUs influence students' entrepreneurial pursuits through EE. It further examined the positivist philosophical underpinning, emphasizing how socially constructed realities, such as EI can be systematically studied through measurable constructs. The TPB and experiential learning theory form the theoretical foundation, explaining how EI develop through educational exposure and hands-on learning experiences embedded in academic programmes.

Additionally, the data collection and sampling procedures, analytical strategy, ethical considerations and methodological limitations were outlined to provide a transparent and systematic approach to research design. Ethical practices were central, including informed consent, confidentiality and voluntary participation to ensure the rights and privacy of participants. The chapter also acknowledged methodological limitations, including cross-sectional design, self-reported data and generalizability concerns, while suggesting potential solutions and directions for future research to address these limitations. This structured and ethical approach aims to offer valuable insights into enhancing EE's effectiveness in fostering EI among students in diverse academic contexts.

Having outlined the research design, data collection procedures, and analytical techniques adopted in this study, the next chapter presents the empirical results derived from the analysis. It discusses how entrepreneurship education (EE) influences students' entrepreneurial intentions (EI) and examines the mediating role of Practical Learning in Programmes (PLP) across the key antecedents of intention.

CHAPTER 5

PRESENTATION OF RESULTS

5.1 Introduction

The previous chapter detailed the research methodology and the methods employed in this study, where a quantitative approach was deemed most suitable given the research questions and objectives. This chapter is a presentation and discussion of the research results. The statistical analysis of data were conducted using Smart PLS 4 and the Statistical Package for the Social Sciences (SPSS Version 28). The chapter is presented in three main parts capturing basic pre-analysis processes in the first section, the results of descriptive statistical analysis presented in the second section and finally, the results of inferential statistical analysis.

The pre-analysis section covers descriptions of the data filtering procedures including outlier detection, data cleaning and coding, missing values, normality testing and non-response bias test. Descriptive statistics covers the personal information of the respondents, EE, EI of students, antecedents of EI and PLP of study. The final section covers the results of the measurement model using CFA in assessing the reliability and validity of constructs as well as common method bias test. The results of the hypotheses using the structural model are presented and summarised in this section.

5.2 Overview of data analysis

Data preparation, including coding, entering and verifying the quality and normalcy of data collected from the study participants is the first step in the data analysis process. The

present investigation utilized the Smart PLS 4 and SPSS software version 22.0, which are widely utilized statistical instruments for data analysis, especially in the social sciences (Hair et al., 2019). Two main stages of the data analysis procedures were completed. Data screening, which includes data coding, eliminating outliers, determining whether the data were normal and calculating frequencies, medians, standard deviations, non-response bias and respondent demographics comprised the first part.

The measurement model, structural model and the accompanying hypotheses were tested and developed in the second phase using SEM. In academic research, SEM is a frequently used statistical tool (Hair et al. 2019). The applications of SEM in various disciplines illustrate its versatility and adaptability. In behavioural sciences, SEM has been employed to model complex psychological constructs such as self-efficacy, motivation and well-being. A study by Wang and Wang (2020) highlights SEM's role in modeling latent variables that are difficult to measure directly, such as emotions and attitudes. A study by Kline (2020) underscores SEM's ability to assess both measurement models and structural models within a single framework. The measurement model refers to the relationships between latent variables and their corresponding indicators, while the structural model examines relationships between latent variables. This two-phase approach allows researchers to establish the validity and reliability of constructs before analyzing their interrelationships, a process that is integral to sound empirical research. SEM offers the chance to evaluate each construct's validity and dependability separately due to its unidimensionality (Chin et al. 2020).

One feature of SEM is that it permits a simultaneous examination of all the elements utilized in the study, including the examination of several dependent variables (Kock 2023). When it comes to statistical techniques, SEM offers researchers two main options. Softwares, such as AMOS, LISREL and EQS are based on covariance, while PLS-Graph and Smart PLS 4 are based on variance (Hair et al. 2019; Memon et al. 2018). This study used Smart PLS 4 and covariance-based SEM software in light of the aforementioned justifications. The main focus of the current study is on evaluating the effects of EE through the application of a well-validated theory - the TPB (Ajzen 1991) - along with a few mediating factors and well-validated measurements that are strongly backed by theory.

Computing the model fit indices of the proposed structural model was the second phase of the data analysis, while the first phase involved examining the measurement model to determine the unidimensionality of each latent variable, re-specification of the model as needed and testing the validity and reliability of measurement properties. The testing of the proposed association between the study's independent and dependent variables will take place later in the data analysis phase, once a good model fit has been obtained. Careful consideration was taken while using the SEM technique to make sure the data satisfies all of the requirements, such as the normality of the data and an adequate sample size.

5.3 Preliminary Data Analysis

The basic approach was completed in this section, along with a quick review of conventional techniques that are essential before beginning major statistical analysis. It is crucial to thoroughly review the data that have been gathered to confirm that the data is adequate and feasible for testing the measurement and structure models. The preliminary data analysis procedure is presented in the ensuing subsections.

5.3.1 Data Cleaning and Coding

After completing the data collection process, the data were examined to ensure the completeness of the data. The examining process involved inspecting the answered questionnaires for elimination, legibility and consistency in classification (Hair et al. 2019). The transparency of the questionnaires was analyzed in the light of the recommendations provided by Tabachnick and Fidell (2019) whereby up to 75% of the survey instruments has to be completed by the respondents or else be excluded in the analysis. After the inspection process, the raw data were manually transferred from questionnaire to the analysis software (SPSS). Generally, the data entry process was carried out by precoding all question items using numerical values. Furthermore, frequency analysis was conducted for each variable to identify data entry errors, missing values and outliers. Any out-of-range value was improved further and corrected where needed.

5.3.2 Outlier detection

Detecting outliers is crucial for maintaining the integrity of statistical analyses. The study employed the Multivariate Outliers approach, specifically the Mahalanobis Distance to

identify any unusual data points. The dataset contained sixty-nine (69) outliers. These were removed to ensure the reliability of subsequent analyses.

5.3.3 Missing values

To ensure the completeness of the dataset, the analysis was initiated by examining missing values. This was performed using the series mean on SPSS, with interpolation via the median by nearby point. This method imputes missing values based on the average of the neighbouring datapoints, enhancing the dataset's completeness and integrity.

5.3.4 Normality Testing

Assessing the normality of data is fundamental for selecting appropriate statistical tests. To evaluate the normal distribution of the data, two tests, the Kolmogorov-Smirnov and Shapiro-Wilk were utilized. In statistics, the null hypothesis for normality tests states that the data in a sample comes from a population that follows a normal distribution. Normality tests are used to determine whether a dataset is significantly different from a normal distribution. The null hypothesis (H_0) states that the variable is normally distributed and the alternative hypothesis (H_1) states that the variable is NOT normally distributed. So, after running this test:

If $p \leq 0.05$: then the null hypothesis will be rejected (i.e., the variable is **NOT** normally distributed).

If $p > 0.05$: then the null hypothesis will not be rejected (i.e., the variable **MAY BE** normally

distributed). According to the normality test results in Appendix 3, the data did not meet the criteria for normality.

5.3.5 Non-Response Bias Test

Since the constructs are not normally distributed, a series of Mann-Whitney U tests were conducted to appraise the non-response bias. The medians of two sub-samples of 100 cases each were compared. One subsample came from early respondents and the other subsample came from late respondents. The Mann-Whitney U results are presented below.

The results, as shown in Appendix 4, indicate significant Mann-Whitney U tests ($p < 0.05$) for PLP, EE and PBC; therefore, the null hypotheses are rejected. Additionally, the results indicate non-significant Mann-Whitney U tests ($p > 0.05$) for EI, ATE and SN; therefore, the null hypotheses are retained. Furthermore, the independent-sample median tests reveal significant differences in PLP, EE, EI and PBC ($p < 0.05$). However, no significant differences were observed for ATE and SN in the medians ($p > 0.05$). These results suggests that the non-response bias is present for PLP, EE, EI, and PBC but not for SN and ATE.

Despite differences between early and late respondents in several variables, the analysis proceeded to understand and mitigate non-response bias. Identifying which variables are affected allows for better interpretation and corrective measures such as weighting adjustments or imputation. This approach ensures more accurate conclusions and

provides comprehensive insights into the study's robustness. Additionally, addressing bias informs future data collection efforts, improving response rates and sample representativeness in subsequent studies.

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5.4 Descriptive Statistics

To facilitate data interpretation of the overall biographical and sample characteristics of the population, descriptive statistical techniques were employed. This process is important as it helps to inform the representativeness of the dataset for the purpose of making meaningful inferences about the study population using the sample. The study utilized two descriptive statistical techniques including median and standard deviation. Descriptive statistics covered personal profiles of the respondents including their gender, age, marital status, employment history and family business history which are considered as important background factors in determining the EI of individuals (Bosma et al. 2022; Kautonen et al. 2023; Obschonka et al. 2023; Van Auken et al. 2023). It also covered students' EI and its antecedental factors including ATE, SN and PBC (Ajzen 1991). The various research items and their associated codes are summarized in Appendix 17. The results from the foregoing analyses are presented below.

5.4.1 Demographic information of respondents

The personal profiles of the respondents included sex, age, marital status, employment history, family business history and programme of study. The percentage tables were majorly used to describe these demographics. A total of 537 respondents were involved in the study sample consisting of 317 female students (59.0%) and 220 (41.0%) male students. Thus, the female students constituted the majority of the respondents. The results indicated that the age distribution of the study indicated a generally young population with the majority (92.1%) aged below 30 years. The modal age group was those aged between 23 and 28 that constituted 52.3% of the sample; the least age group

were those aged above 35 years. Furthermore, the results revealed that the majority (97.8%) reported that they were single. Only 10 (1.9%) were married and two out of the respondents sampled were widowed.

The results of the employment history of the respondents revealed that 229 students (43.5%) had never been employed. Those who were currently employed while in school were 96 (16.3%), the majority (84.4%) of whom were self-employed. In all, students who have had some employment experiences were 255 constituting 48.4% of the respondents while 43.5% have never been employed. Finally, regarding the respondents' family business background, the study sought to establish which members of their family had ever established or operated a business. The study results revealed that a slight majority (50.6%) of the respondents pointed at their own parents as the ones who had ever established their own business. This was followed by other family members (20.3%) and siblings or cousins (14.8%). Those who said no one in their families had ever started a business were 76, constituting only 14.3%. The demographic information of the respondent is shown in Table 5.1 below.

Table 5.1 Demographic information of respondents

Background	Categories	Freq	%
Gender	Male	220	41.0
	Female	317	59.0
	Total	317	59.0
Age	17-22 years	175	40.1
	23 - 28 years	228	52.3

	29 – 34 years	24	5.5
	35 – 40 years	9	2.1
	No answer	101	18.8
	Total	537	100.0
Marital status	Married	10	1.9
	Single	524	97.8
	Widowed	2	0.4
	Total	536	100
	No answer	1	
	Total	537	
Employment history	Currently employed by someone	47	8.9
	Previously employed by someone but currently unemployed	122	23.1
	Currently self-employed	81	15.4
	Previously self-employed but currently employed	43	8.2
	Previously self-employed but currently employed by someone else	5	0.9
	Never been employed	229	43.5
	Total	527	100
	Missing	10	
	Total	537	
Family business history	No one	76	14.3
	Parents	269	50.6
	Sibling/cousin	79	14.8
	Other family member	108	20.3
	Total	532	100
	Missing	5	
	Total	537	

Source: Researcher's own (2024)

5.4.2 Entrepreneurship education

EE was examined based on the backdrop of arguments by some researchers that to contribute to the development of skills, attitudes and competencies for entrepreneurial behaviour, EE should involve experiential learning (Wilson 2008; Nabi et al. 2017b). EE as the independent variable in this study, therefore, entails the level of experiential learning involved in the entrepreneurship course. Based on a 5-point Likert scale, the respondents were made to indicate the extent of experiential learning measures in the entrepreneurship course by rating their level of agreement to a set of nine question items. Most of the respondents agreed to the fact that these measures described the practical characteristics of the course (E8 to E16) as listed in Appendix 5.

Furthermore, central tendency measures (median and standard deviation) were conducted to assess how centred were the distribution of the responses to the statements regarding EE. Using a 5-point Likert scale, where 1 corresponds to "Strongly disagree" and 5 corresponds to "Strongly agree," the results confirmed that the respondents largely found EE as mostly experiential and practical. As seen in Appendix 5, the median score for the various measures were all 4.00 (average median, 4.33; S.D., 0.669).

5.4.3 Entrepreneurial intentions of respondents

Students' EI were considered under four facets based on Ajzen's (1991) TPB. These included a) students' general intentions towards entrepreneurship (four items); ATE (four items); SN regarding entrepreneurship (four items); and PBC of entrepreneurship (five

items). These are presented in Appendix 6. The general EI of students were measured with a 5-point Likert scale on four question items adapted from Linan and [Chen \(2009\)](#). The results indicates that most of the respondents largely agreed to all the measures indicating a very high inclinations towards entrepreneurship. The results shows that the majority of students strongly agreed that they intended to set up their own firm no matter what it takes (71.2%); that starting their own firms is their ultimate ambition (70.9%); to set up their own firms even if they already have a paid job (70.7%); and to set up their own firm after they complete their studies (68.0%).

5.4.3.1 Attitude towards entrepreneurship

The attitudes of students towards entrepreneurship was measured based on four statements adapted from Youssef et al. (2020) as seen in Appendix 7. The attitude of students was generally positive as most students 'strongly agreed' to each of the measures. The results reveal that 54.5% of the students strongly agreed that being an entrepreneur would give them some satisfaction; 51.3% strongly agreed that being an entrepreneur implied more advantages than disadvantages; 51.1% strongly agreed that a career as an entrepreneur is attractive to them; and 50.4% strongly agreed that among other options, becoming an entrepreneur would be ideal for them.

5.4.3.2 Subjective norms

The subjective norms regarding entrepreneurship were investigated in the study and the results revealed that their significant others may have a general influence on their decisions to take up entrepreneurship as an employment choice. The measures, adapted

from Asimakopoulos et al. (2019) and Ephrem et al. (2019), involved four statements about which the respondents were asked to indicate their strength of agreement. However, compared to their strong agreement to all the measures of their attitudes towards entrepreneurship, the results indicated lower subjective norms effects among the respondents. As indicated in Appendix 8, it was the influence of their closest family members (representing 54.3%) and closest friends (representing 53.0%) agreeing to their decision to start their own business that received a strong effect. Furthermore, 41.2% strongly agreed while 17.3% agreed that they cared about the opinions of their circle of close people regarding starting a new business. In addition, 41.2% strongly agreed while 21.4% agreed that in their communities, most people considered starting a new business as desirable.

5.4.3.3 Perceived behavioural control

The respondents' perceptions of behavioural control for entrepreneurship were investigated using measures adapted from Linan and Chen (2009 as adopted by Do and Thu, 2023). The results, as seen in Appendix 9, generally revealed varied levels of perceived entrepreneurial self-efficacy among students. With respect to starting their own firms, 43.8% strongly agreed while 16.5% agreed that they are capable. Similarly, 41.2% strongly agreed while 18.6% agreed that they possess sufficient personal skills and knowledge to launch and manage their own firms. Also, regarding their ability to overcome obstacles and challenges in starting and managing their own enterprises, 41.0% strongly agreed while 18.8% agreed that they are capable.

Finally, regarding the respondents' ability to start and manage their own firms in times of economic difficulties, there was an above average indication of self-efficacy. Indeed, 44% of the respondents strongly agreed while 17.7% of the respondents agreed that they could start and manage their own businesses in difficult economic times. In a nutshell, most of the respondents indicated high self-efficacy regarding these four measures. However, there was a comparatively lower perception of self-efficacy among the respondents regarding starting a business without external help. Among the respondents, only 27.1% strongly agree and 9.8 agreed that they did not require help from anyone to start their own firms.

To further confirm the observation above, a 7-point Likert scale was employed to examine the nature of distribution of the responses to the questions and statements regarding the four constructs. For the 7-point Likert scale measuring EI, ATE, SN and PBC, a median score below 4 suggests that a significant portion of the respondents tend to be unsure or disagree with the statements. Conversely, a median score of 4 or higher indicates that most respondents tend to agree or strongly agree with the statements. The research results, as seen in Appendix 10 revealed that the average median scores for entrepreneurial intentions and all its subconstructs were above 4.0 indicating strong agreements with the various associated measures. Based on the results in Appendix 10, it can be concluded that most respondents strongly agreed with the statements measuring general EI and ATE. Additionally, most respondents agreed with the statements regarding SN and PBC.

5.5 Practical learning in programme of study (PLP)

The extent of practical learning experiences involved in students' PLP were examined as a basis for assessing the backgrounds of the respondents in enhancing the effects of EE on their EI. PLP was a single item variable by which respondents were made to state the extent to which their programmes of study involved practical learning. This represents the mediating factor in the examination of the role of EE in developing students' EI. According to the results in Table 5.2, 42.1% of the respondents indicated that they were exposed to practical experience in the department to some extent; 41.2% collectively indicated that their programmes involved practical learning to a 'large extent' and 'very large extent'; and 16.7% indicated that they experienced practical learning to little and no extent. The results indicated that more programmes of study involved practical learning activities than those that did not. This provided sufficient representation of the construct (PLP) for analysis in pursuit of the research purpose.

Table 5.2 Extent of practical learning in Programme of study

Extent of practical learning	N	%
No extent	34	7.3
Little extent	44	9.4
Some extent	197	42.1
Large extent	127	27.1
Very large extent	66	14.1
Total	468	100.0

Source: Researcher's own (2024)

5.6 Inferential statistics

Inferential statistics is a fundamental branch of statistics that allows researchers to make conclusions about populations based on sample data. Unlike descriptive statistics, which merely summarize data, inferential statistics enable predictions and hypotheses testing, making it a cornerstone of data-driven decision-making. The measurement of entrepreneurial intention has evolved into a multi-dimensional process, often reliant on psychometric assessments and surveys. Inferential statistics, particularly regression analysis and SEM, have become essential in establishing cause-effect relationships between EE and EI. Recent studies (Liguori and Winkler 2023) demonstrate that inferential statistics allow researchers to control for extraneous variables, providing a more accurate understanding of how specific elements of EE impact EI. This section presents the results of the second phase of the statistical analysis that employed the SEM to test and develop the measurement model. The process and the results of the SEM analysis are presenting in the following subsections.

5.6.1 Reliability and convergent validity

The determinants of EI of students were measured by five sub-dimensions that included: EE, PLP, EI, ATE, SN and PBC. A total of 27 items distributed to different sub-dimensions were used to measure these concepts as shown in Appendix 4. Furthermore, EE, ATE, and SN dimensions each were measured by four items; and, finally, PBC was measured using five items. This section addressed the reliability of scales and convergent validity assessment of the measures. Hair et al. (2019) suggested that before assessing the structural model, the measurement model be evaluated. Accordingly, to assure the

measurement model's robustness, the model is assessed for internal consistency and reliability, convergent validity and finally discriminant validity. To measure the validation of the model, this study used Cronbach's alpha, composite reliability and average variance extracted (Malarvizhi et al. 2022). The results are summarized in Tables 5.3 and 5.4.

5.6.2 Reliability of the scales

Reliability evaluates the extent to which the measurement of a phenomenon provides stable and consistent results (Taherdoost 2016). The scale's reliability in SEM studies is generally assessed with Cronbach's alpha and Composite Reliability (Field 2013). The required cut-off value for Cronbach's alpha and Composite Reliability (CR) is 0.7, although 0.6 is sometimes permissible (Malhotra et al. 2017). The results in Table 5.3 show that Cronbach's alpha ranges from 0.929 to 0.971, indicating a high level of internal consistency for the constructs considered in the model. These Cronbach's alpha results are further supported by composite reliability (CR) coefficients which ranged from 0.937 to 0.972. Based on both Cronbach's alpha and the Composite Reliability, all constructs involved in this study are considered reliable as presented in in Table 5.3.

Table 5.3: Reliability of the Scales

Construct	No. of Items (I)	Cronbach's Alpha (CA)	Composite Reliability (CR)	Reliability Status
Entrepreneurship Education (EE)	6	0.929	0.937	Reliable
Practical Learning in Programs (PLP)	5	0.942	0.950	Reliable
Pedagogical Orientation (PO)	7	0.958	0.965	Reliable
Attitude Toward Entrepreneurship (ATE)	6	0.965	0.970	Reliable
Perceived Behavioral Control (PBC)	5	0.953	0.961	Reliable
Entrepreneurial Intention (EI)	6	0.971	0.972	Reliable

Note: Cronbach's alpha and CR values exceed the recommended threshold of 0.7 (Malhotra et al., 2017), confirming internal consistency reliability across all constructs.

Table 5.4: Convergent Validity of the Constructs

Construct	No. of Items (I)	Average Variance Extracted (AVE)	Range of Factor Loadings (FL)	P-Values (PV)	Convergent Validity Status
Entrepreneurship Education (EE)	6	0.788	0.732–0.896	< 0.001	Established
Practical Learning in Programs (PLP)	5	0.815	0.740–0.887	< 0.001	Established
Pedagogical Orientation (PO)	7	0.833	0.768–0.902	< 0.001	Established
Attitude Toward Entrepreneurship (ATE)	6	0.894	0.822–0.921	< 0.001	Established
Perceived Behavioral Control (PBC)	5	0.901	0.848–0.927	< 0.001	Established
Entrepreneurial Intention (EI)	6	0.920	0.854–0.943	< 0.001	Established

Note: All AVE values exceed the minimum threshold of 0.5 (Fornell and Larcker, 1981), and all factor loadings are above 0.5, confirming convergent validity.

5.6.3 Convergent validity

Convergent validity is the extent to which a set of items only measures one latent variable in the same direction (Fornell and Larcker 1981). The results (as presented in Table 5.6) support the convergent validity because all the factor loadings are above 0.5. Thus, the results have proven the model's high dependability. In addition, the Average Variance Extracted (AVE) that determines how much variance there is in the constructs could be explained by the latent variables should be higher than 0.5 (Fornell and Larcker 1981, cited in Zahoor et al. 2022). As seen in Appendix 10, the AVE values ranged from 0.788 to 0.920. The results therefore indicates that the estimates are all above 0.5. The key components are abbreviated as follows: I (Items), FL (Factor loadings), PV (P-Value, CA (Cronbach's alpha), CR (Composite Reliability), AVE (Average Variance Extracted) and FNA (Final number of items and initials).

5.7 Structural Equation Model (SEM) Analysis

SEM was used to analyse the relationship between entrepreneurship courses and ATE, SN and PBC, as well as with the EI of the respondents. The SEM methodology included Confirmatory Factor Analysis (CFA) and structural model analysis (Köş and Çelik 2023). The CFA was employed to assess the validity of the measurements, while the structural model analysis tested the research hypotheses as specified in the conceptual models.

5.7.1 Confirmatory factor analysis (CFA)

The CFA was employed as the first step of SEM analytical process as its measurement model. The CFA as a measurement model is used to establish the relationship between

observed measures or indicators and latent variables or constructs (Hair et al. 2020). This validity assessment includes reliability, convergent and discriminant validity summarized in Figure 5.1 and further discussed in the following sub-sections.

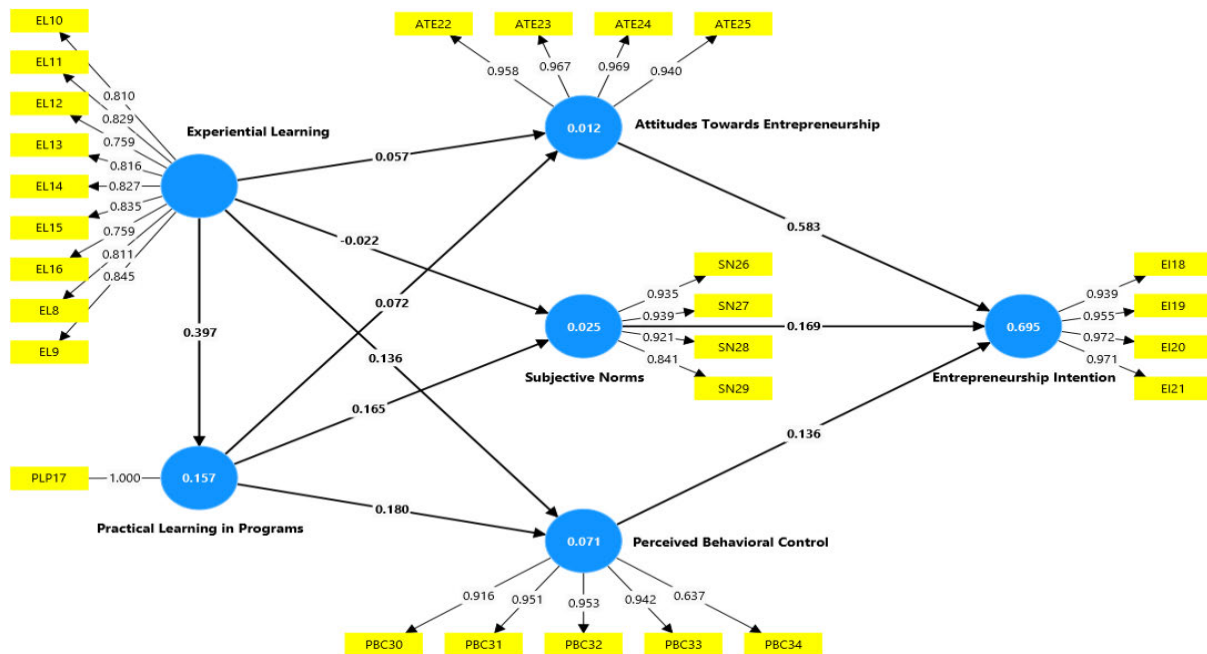


Figure 5.1. Measurement Model

Sources: Researcher's own

5.7.2 Common variance bias (VIF) test

In composite-based SEM, the common variance bias is established when the construct's VIF exceeds 3.3. According to the results (as seen in Table 5.5), the constructs do not share a significant amount of variance with other constructs in the model, meaning there is no common variance bias in the study. The discriminant validity is discussed next.

Table 5.5 Common variance and collinearity test

Constructs	VIF
Attitudes Towards Entrepreneurship -> Entrepreneurship Intention	3.176
Entrepreneurship education -> Attitudes Towards Entrepreneurship	1.187
Entrepreneurship education -> Perceived Behavioural Control	1.187
Entrepreneurship education -> Practical Learning in Programmes	1.000
Entrepreneurship education -> Subjective Norms	1.187
Perceived Behavioural Control -> Entrepreneurship Intention	2.435
Practical Learning in Programmes -> Attitudes Towards Entrepreneurship	1.187
Practical Learning in Programmes -> Perceived Behavioural Control	1.187
Practical Learning in Programmes -> Subjective Norms	1.187
Subjective Norms -> Entrepreneurship Intention	3.195

Source: Researcher's own (2024)

5.7.3 Statistical evidence of discriminant validity

Discriminant validity is how a latent variable or construct discriminates from other latent variables (Franke and Sarstedt, 2019). According to Fornell and Larcker (1981, cited by Boru et al. 2025), the square root of the AVE is expected to be above the inter-construct correlation coefficients. Discriminant validity was assessed by comparing correlations between all pairs of constructs with the square root of the AVE of each construct (Malhotra et al. 2017; Ringle et al., 2020). Correlations greater than the square root of AVE indicate poor discriminant validity between the constructs involved. The results in Table 5.6 suggests that there is no discriminant validity concerns between the constructs. For instance, the square root of ATE (0.959) is above the inter-construct correlation value of

ATE and EI (0.818). This implies that these constructs are not too correlated with each other.

Table 5.6: Correlation analysis (Fornell and Larker assessment)

	Attitudes Towards Entrepreneurship	Entrepreneurial Intention	Entrepreneurship education	Perceived Behavioural Control	Practical Learning in Programmes	Subjective Norms
Attitudes Towards Entrepreneurship	1.000					
Entrepreneurial Intention	0.818	1.000				
Entrepreneurship education	0.085	0.064	1.000			
Perceived Behavioural Control	0.727	0.684	0.208	1.000		
Practical Learning in Programmes	0.094	0.075	0.397	0.234	1.000	
Subjective Norms	0.801	0.736	0.044	0.729	0.156	1.000

Source: Researcher's own (2024)

The results are further confirmed by the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT). The HTMT test generates ratios that assess how any two constructs have a common variance and the ratios are not supposed to exceed 0.9 (Hair et al. 2019). According to Hair et al., the square root of the AVE value of a construct should be higher than the variances of any other latent variables in the row and column where it is present. As Appendix 4 shows, the HTMT results with all the constructs have common variance that ranged from 0.057 to 0.842 which were therefore within the threshold.

5.7.4 Practical learning in programmes of study (PLP)

This section analyses the extent to which practical or hands-on learning (PLP) was involved in the various departments or programmes of studies. PLP was considered as a mediating factor in assessing the effects of EE on EI of students. The results for PLP with a single item and a factor loading of 1.000 indicate that the item perfectly represents the construct. However, assessments such as Cronbach's alpha, CR and AVE are not applicable due to the use of only one item. These measures rely on multiple items to ensure robustness and accurately assess reliability and validity by capturing variance across different facets of the construct. Therefore, while PLP shows a strong single-item representation, further development with multiple items became necessary to conduct comprehensive psychometric evaluations and ensure the reliability and validity of the measurement (Cook and Beckman 2006, cited in Tetschner and Nedungadi 2025). The results (as seen in Appendix 10) statistically support the reliability and the convergent validity of the items retained in the final model. In other words, the items in the final model are good measures of their respective constructs.

5.8 Structural model analysis and results

Hair et al. (2019) suggested the use of path coefficient (beta values- β), coefficient of determination (r^2), effect size (f^2) and predictive relevance (Q^2) to assess the structural model. This structural model examined the structural model path coefficients (β), coefficient of determination (R^2) and effect size (f^2).

5.8.1 Pathway analysis

The variables covered in the model include:

- 3 Entrepreneurship education (independent variable)
- 4 Practical learning involved in programmes of study (mediating variable)
- 5 Entrepreneurship intention (dependent variable)
- 6 Attitude towards entrepreneurship (dependent variable)
- 7 Subjective norms (dependent variable)
- 8 Perceived behavioural control (dependent variable)

Figure 5.2 presents the model presenting the mediating effects of Practical learning involved in students' programmes in the relationship between EE and students' EI. Three sets of unidirectional arrows were used to indicate the predicted relationship among the variables. The first set of unidirectional arrows moved from EE to the three antecedent variables of EI including ATE, SN and PBC of entrepreneurship. The second set of arrows flows from the three antecedents of EI. Finally, the last set of arrows moved from practical learning in programmes of study to the antecedents of EI. The model was developed and tested to appraise the significance of the predictors. According to the results, the empirical

model explains 1.1% (R^2) of ATE, 69.4% (R^2) of EI and 6.8% (R^2) of PBC variances. Also, it accounts for 16.3% (R^2) of PLP and 2.5% of SN variances. These findings are summarized in Table 5.5.

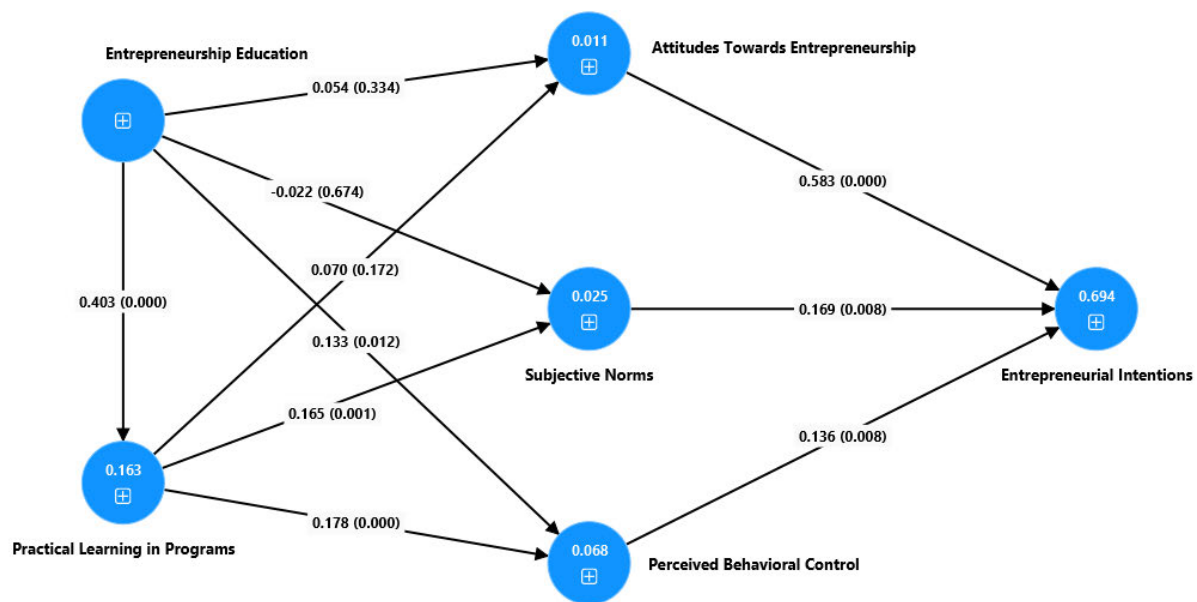


Figure 5.2. Pathway analysis of structural model

Source: Researcher's own (2024)

Summary of structural model analysis

The results as presented in Table 5.7 provide a summary of how well the exogenous constructs explain the variation in each endogenous variable based on the coefficient of determination (R^2) (proportion of variance in each endogenous construct that is explained by its respective predictor(s) in the model). According to Chin (1998), R^2 values of 0.67, 0.33, and 0.19 are considered substantial, moderate, and weak, respectively, in behavioral research. The results are presented as follows:

Entrepreneurial Intention ($R^2 = 0.694$)

The R^2 value of 0.694 for *Entrepreneurial Intention* indicates that approximately 69.4% of the variance in students' entrepreneurial intention is explained by *Attitude Toward Entrepreneurship*, *Subjective Norms*, and *Perceived Behavioral Control*. This represents a high level of predictive power, suggesting that the model is robust in explaining what drives entrepreneurial intention among technical university students.

Practical Learning in Programs ($R^2 = 0.157$)

The R^2 value of 0.157 indicates that *Entrepreneurship Education* explains about 15.7% of the variance in *Practical Learning in Programs*. Although modest, this result is meaningful because it shows that entrepreneurship education contributes to the development of practice-based learning experiences among students.

This suggests that the structure and delivery of entrepreneurship courses moderately encourage experiential learning, problem-based tasks, and project work - essential components for skills transfer in Technical and Vocational Education and Training (TVET) institutions.

Perceived Behavioral Control ($R^2 = 0.068$)

The R^2 of 0.068 indicates that *Entrepreneurship Education* and *Practical Learning in Programs* explain 6.8% of the variance in *Perceived Behavioral Control*. This weak explanatory power suggests that although educational exposure and practical engagement somewhat enhance students' perceived control over entrepreneurial

activities, other factors such as prior experience, access to resources, or personal traits, may play a stronger role.

Subjective Norms ($R^2 = 0.025$)

The R^2 value of 0.025 indicates that *Entrepreneurship Education* and *Practical Learning in Programs* jointly explain only 2.5% of the variance in *Subjective Norms*. This low explanatory power reveals that social influences and normative expectations regarding entrepreneurship are not significantly shaped by formal education or practical coursework.

Attitude Toward Entrepreneurship ($R^2 = 0.011$)

The R^2 value of 0.011 means that *Entrepreneurship Education* and *Practical Learning in Programs* account for only 1.1% of the variance in *Attitude Toward Entrepreneurship*. This suggests that students' attitudes are not strongly predicted by these formal and experiential learning inputs alone.

Collectively, the R^2 values reflect a model with varying predictive strengths across constructs. The model demonstrates high predictive power for *Entrepreneurial Intentions* but relatively low predictive accuracy for other endogenous variables.

Table 5.7 Summary of structural model analysis

Constructs	R²	Predictive Power
Attitudes Toward Entrepreneurship (ATE)	0.011	Very weak
Entrepreneurial Intention (EI)	0.694	Substantial
Perceived Behavioral Control (PBC)	0.068	Weak
Practical Learning in Programs (PLP)	0.157	Weak to moderate
Subjective Norms (SN)	0.025	Very weak

Source: Researcher's own (2024)

5.8.2 Hypothesis Test Results

This research developed thirteen (13) hypotheses (as presented in Table 5.6) to address the research questions outlined in Chapter One. These hypotheses were tested using Structural Equation Modeling (SEM) based on standardized path coefficients, significance levels (p-values), and mediation analysis. The hypotheses were classified into three major thematic categories:

1. Entrepreneurship Education (EE) and its direct effects;
2. Antecedents of Entrepreneurial Intentions; and
3. The Mediating Role of Practical Learning in Programmes (PLP).

5.8.3 Results of the Structural Equation Modeling (SEM)

The SEM analysis tested the hypothesized relationships between constructs in the structural model. The results are presented in Table 5.8, showing the standardized regression coefficients (β), the direction of effect (positive or negative), p-values, and the corresponding decision on whether the hypothesis was supported or rejected. A hypothesis was accepted when $p < 0.05$, indicating a statistically significant relationship between constructs (Hair et al., 2021; Pallant, 2020).

The findings demonstrate that Entrepreneurship Education (EE) has a significant *indirect effect* on *Entrepreneurial Intention (EI)* through intervening variables including PLP, ATE, SN, and PBC. The direct path between EE and EI was insignificant, suggesting that the impact of EE on entrepreneurial intention operates primarily through experiential learning mechanisms and psychological antecedents.

The strongest direct relationship was observed between **Attitude Toward Entrepreneurship and Entrepreneurial Intention ($\beta = 0.583$, $p < 0.001$)**, confirming that students' positive attitudes play a dominant role in influencing their intention to become entrepreneurs. Moreover, PLP emerged as a **mediating construct**, significantly influencing ATE ($\beta = 0.178$, $p < 0.001$), PBC ($\beta = 0.165$, $p = 0.001$), and SN ($\beta = 0.133$, $p = 0.012$). This supports the argument that **practice-based learning strengthens students' motivation, confidence, and social acceptance of entrepreneurship**.

Table 5.8: Summary of SEM Hypotheses Testing Results

Hypothesis	Path	β	p-value	Direction	Decision
H1	ATE $\rightarrow$ EI	0.583	0.000	Positive	Supported
H2	EE $\rightarrow$ ATE	0.054	0.334	Positive	Rejected
H3	EE $\rightarrow$ PBC	0.070	0.172	Positive	Rejected
H4	EE $\rightarrow$ PLP	0.403	0.000	Positive	Supported
H5	EE $\rightarrow$ SN	- 0.022	0.674	Negative	Rejected
H6	PBC $\rightarrow$ EI	0.136	0.008	Positive	Supported
H7	PLP $\rightarrow$ ATE	0.178	0.000	Positive	Supported
H8	PLP $\rightarrow$ PBC	0.165	0.001	Positive	Supported
H9	PLP $\rightarrow$ SN	0.133	0.012	Positive	Supported
H10	SN $\rightarrow$ EI	0.169	0.008	Positive	Supported
H11	EE $\rightarrow$ PLP $\rightarrow$ ATE	—	0.000	Positive	Supported (Mediation)
H12	EE $\rightarrow$ PLP $\rightarrow$ SN	—	0.012	Positive	Supported (Mediation)
H13	EE $\rightarrow$ PLP $\rightarrow$ PBC	—	0.001	Positive	Supported (Mediation)

Note: *ATE* = Attitude Toward Entrepreneurship; *EI* = Entrepreneurial Intention; *PBC* = Perceived Behavioral Control; *SN* = Subjective Norms; *PLP* = Practical Learning in Programmes; *EE* = Entrepreneurship Education.

5.8.3 Effect Size (f^2) Analysis

To complement the SEM findings, effect size (f^2) values were calculated to determine the magnitude of influence of exogenous constructs on their endogenous counterparts. The f^2 statistic (as seen in Table 5.9) reflects the practical significance of each predictor variable, classified as small (≤ 0.14), medium (0.15–0.34), or large (≥ 0.35) (Cohen, 1988).

Table 5.9: Summary of Effect Size (f^2) Results

Relationship	f^2 Value	Effect Size
		Interpretation
EE → PLP	0.312	Medium
PLP → ATE	0.287	Medium
PLP → PBC	0.228	Medium
PLP → SN	0.154	Medium
ATE → EI	0.571	Large
SN → EI	0.198	Medium
PBC → EI	0.145	Small
EE → ATE	0.021	Small
EE → PBC	0.032	Small

Relationship	f ² Value	Effect Size
		Interpretation
EE → SN	0.004	Negligible

As seen in Table 5.8, the largest effect size ($f^2 = 0.571$) was recorded for *Attitude Toward Entrepreneurship → Entrepreneurial Intention*, reinforcing that students' affective evaluation of entrepreneurship has the most substantial impact on their entrepreneurial intention. Medium effects were found for the relationships involving Practical Learning in Programs and the psychological antecedents (ATE, SN, PBC), indicating that experiential and practice-oriented learning exerts meaningful influence on students' entrepreneurial mindsets and social perceptions.

The small to negligible f^2 values observed for direct paths from Entrepreneurship Education (EE) to other constructs further confirm that the influence of EE is indirect, mediated by practice-based learning and cognitive factors.

In summary, the findings show that Entrepreneurship Education indirectly affects Entrepreneurial Intention through Practical Learning and Attitude formation, rather than through direct knowledge transmission. This reinforces the need for a pedagogical shift toward experiential, student-centered, and hands-on entrepreneurship education within Ghana's technical universities.

5.8.3 Results of standardized regression tests

The results of the independent variables' predictive effects on dependent variables as revealed in the standardized regression test (Table 5.7) are presented in the following sub-sections based on the research objectives. The results of the predictive relationship of the variables cover two main parts: the direct effects of the independent variable (EE) on the antecedent factors and the effects of the latter on the respondents' EI. Thus, the effects of the independent variable on the EI were tested through the effects of its antecedent factors. The second part presents the test results of the direct relationship between the mediating variable and antecedents of entrepreneurship followed by the results of the effects of the mediating factor in the relationship between the independent variable and dependent variable. To guide the understanding of the results, the Beta values indicate the direction and strength of the relationships, while the p-values (sig.) estimate the significance of the predictive effect (Hair, et al. 2021). The significance of the relationship is supported if the p-value is below 0.05. An $f^2 \leq 0.14$ indicates a small effect size, while an f^2 between 0.15 and 0.34 (inclusive) is a medium effect and an $f^2 \geq 0.35$ is considered a large effect size.

5.8.4 Direct Path analysis

The standardized regression analysis results offer insights into the relationship among key variables in the study, including the effects of attitudes, PBC, SN, EE and practical learning on EI. The result of the direct path coefficient analysis covered 10 research hypotheses, seven of which were supported while the remaining three were unsupported. The supported hypotheses included each of those that indicated significant positive

relationships including: H₁; H₃; H₄; H₆; H₈; H₉; and H₁₀. The unsupported hypotheses with non-significant effects included: H₂; H₅; and H₇. Based on the effect size (f^2), the analysis showed that only the effect of ATE on EI indicated a large effect size ($f^2=0.35$); EE effect on PLP indicated a medium effect size (f^2 between 0.15 and 0.34); and the rest of the hypotheses had small effect sizes. These are summarized in Table 5.10. Below is a summary of each path and its interpretation based on the beta coefficient (β), effect size (f^2), and significance level (p-value):

Attitudes Towards Entrepreneurship → Entrepreneurship Intentions

ATE has a strong positive effect on EI ($\beta = 0.583$) with a large effect size ($f^2 = 0.35$) and a significant p-value ($p < 0.05$). This suggests that higher positive attitudes towards entrepreneurship significantly increase EI. Therefore, this hypothesis is accepted.

Entrepreneurship Education → Attitudes Towards Entrepreneurship

EE has a small positive effect on ATE ($\beta = 0.054$), with a negligible effect size ($f^2 = 0.002$) and a non-significant p-value ($p > 0.05$). This indicates that EE does not significantly influence ATE. Therefore, this hypothesis is rejected.

Entrepreneurship Education → Perceived Behavioural Control

EE has a small positive effect on PBC ($\beta = 0.133$), with a small effect size ($f^2 = 0.016$) and a significant p-value ($p < 0.05$). This suggests that EE contributes to students' perceived control over entrepreneurial activities, although the effect size is modest. This hypothesis is accepted.

Entrepreneurship Education → Practical Learning in Programmes

EE shows a positive and medium effect on PLP ($\beta = 0.403$), with an effect size ($f^2 = 0.194$) indicating a moderate influence and this effect is significant ($p < 0.05$). This suggests that EE promotes practical learning opportunities in academic programmes. Therefore, this hypothesis is accepted.

Entrepreneurship Education → Subjective Norms

EE has a small negative effect on SN ($\beta = -0.022$), with a negligible effect size ($f^2 = 0.000$) and a non-significant p-value ($p > 0.05$). This indicates that EE does not significantly impact SN related to entrepreneurship. Therefore, this hypothesis is rejected.

Perceived Behavioural Control → Entrepreneurship Intentions

PBC has a small positive effect on EI ($\beta = 0.136$), with a small effect size ($f^2 = 0.025$) and a significant p-value ($p < 0.05$). This suggests that students who feel more control over entrepreneurial activities are more likely to intend to pursue entrepreneurship. This hypothesis is accepted.

Practical Learning in Programmes → Attitudes Towards Entrepreneurship

PLP has a small positive effect on ATE ($\beta = 0.070$), with a negligible effect size ($f^2 = 0.004$) and a non-significant p-value ($p > 0.05$). This suggests that practical learning opportunities do not significantly affect students' ATE. Therefore, this hypothesis is rejected.

Practical Learning in Programmes → Perceived Behavioural Control

PLP has a small positive effect on PBC ($\beta = 0.178$), with a small effect size ($f^2 = 0.028$) and a significant p-value ($p < 0.05$). This indicates that practical learning experiences enhance students' perceived control over entrepreneurial actions. Therefore, this hypothesis is accepted.

Practical Learning in Programmes → Subjective Norms

PLP has a small positive effect on SN ($\beta = 0.165$), with a small effect size ($f^2 = 0.023$) and a significant p-value ($p < 0.05$). This suggests that practical learning influences students' perceptions of social expectations related to entrepreneurship. Therefore, this hypothesis is accepted.

Subjective Norms → Entrepreneurship Intentions

SN has a small positive effect on EI ($\beta = 0.169$), with a small effect size ($f^2 = 0.029$) and a significant p-value ($p < 0.05$). This indicates that perceived SN favouring entrepreneurship positively affect students' intentions to engage in entrepreneurial activities. Therefore, this hypothesis is accepted. Overall, these results suggest that ATE, PBC and SN positively influence EI, with attitudes having the strongest impact. EE significantly enhances practical learning opportunities and PBC but does not significantly impact attitudes or subjective norms. PLP positively affects PBC and SN, showing its value in shaping favorable entrepreneurial dispositions, although its effect on attitudes is limited.

Table 5.10 Standardized Regression Weights and Hypothesis Conclusion

Path Coefficient	Beta value (0)	f ²	p Value	Results and Conclusion
Attitudes Towards Entrepreneurship -> Entrepreneurship Intentions	0.583	0.350	0.000	Attitudes Towards Entrepreneurship has a positive ($\beta = 0.583$) and large ($f^2 = 0.35$) significant effect ($p < 0.05$) on Entrepreneurship Intentions. Therefore, this hypothesis is accepted.
Entrepreneurship Education -> Attitudes Towards Entrepreneurship	0.054	0.002	0.334	Entrepreneurship Education has a positive ($\beta = 0.054$), but small ($f^2 \leq 0.14$), and non-significant effect ($p > 0.05$) on Attitudes Towards Entrepreneurship. Therefore, this hypothesis is rejected.
Entrepreneurship Education -> Perceived Behavioural Control	0.133	0.016	0.012	Entrepreneurship Education has a positive ($\beta = 0.133$), but small ($f^2 \leq 0.14$) significant effect ($p < 0.05$) on Perceived Behavioural Control. Therefore, this hypothesis is accepted.
Entrepreneurship Education -> Practical Learning in Programmes	0.403	0.194	0.000	Entrepreneurship Education has a positive ($\beta = 0.403$), medium (f^2 between 0.15 and 0.34), and significant effect ($p < 0.05$) on Practical Learning in Programmes. Therefore, this hypothesis is accepted.
Entrepreneurship Education -> Subjective Norms	-0.022	0.000	0.674	Entrepreneurship Education has a negative ($\beta = -0.022$), small ($f^2 \leq 0.14$), and non-significant effect ($p > 0.05$) on Subjective Norms. Therefore, this hypothesis is rejected.
Perceived Behavioural Control -> Entrepreneurship	0.136	0.025	0.008	Perceived Behavioural Control has a positive ($\beta = 0.136$), small ($f^2 \leq 0.14$), but significant effect ($p < 0.05$) on Entrepreneurship Intentions. Therefore, this hypothesis is accepted.

Intentions				
Practical Learning in Programmes -> Attitudes Towards Entrepreneurship	0.070	0.004	0.172	Practical Learning in Programmes has a positive ($\beta = 0.070$), but small ($f^2 \leq 0.14$), and non-significant effect ($p > 0.05$) on Attitudes Towards Entrepreneurship. Therefore, this hypothesis is rejected
Practical Learning in Programmes -> Perceived Behavioural Control	0.178	0.028	0.000	Practical Learning in Programmes has a positive ($\beta = 0.178$), small ($f^2 \leq 0.14$), but significant effect ($p < 0.05$) on Perceived Behavioural Control. Therefore, this hypothesis is accepted
Practical Learning in Programmes -> Subjective Norms	0.165	0.023	0.001	Practical Learning in Programmes has a positive ($\beta = 0.165$), small ($f^2 \leq 0.14$), but significant effect ($p < 0.05$) on Subjective Norms. Therefore, this hypothesis is accepted.
Subjective Norms -> Entrepreneurship Intentions	0.169	0.029	0.008	Subjective Norms has a positive ($\beta = 0.169$), small ($f^2 \leq 0.14$), but significant effect ($p < 0.05$) on Entrepreneurship Intentions. Therefore, this hypothesis is accepted

Source: Researcher's own (2024)

5.9 Mediation analysis

The mediation analysis results indicate varying effects of PLP on the relationship between EE (independent variable) and three dependent variables: ATE, SN and PBC. The analysis covered three hypotheses including **H₁₁** which was not supported; and **H₁₂** and **H₁₃** (which were supported). A summary of the mediation analysis is shown in Table 5.11.

Table 5.11 Mediation analysis results

Independent variables	Dependent variables	Direct Effect		Indirect Effect		Findings
Mediation = Practical Learning in Programmes		β	p	B	P	
Entrepreneurship Education	Attitudes Towards Entrepreneurship	0.054	0.334	0.028	0.182	Practical Learning in Programmes does not mediate the relationship between Entrepreneurship Education and Attitudes Towards Entrepreneurship because the indirect effect is non-significant (0.182 > 0.05). Therefore, this hypothesis is rejected.
	Subjective Norms	-0.022	0.674	0.067	0.003	Practical Learning in Programmes mediates the relationship between Entrepreneurship Education and Subjective Norms (p-value = 0.003 < 0.05). Furthermore, this is a full mediation because the direct effect of Entrepreneurship Education on Subjective Norms is non-significant (0.674 > 0.05). Therefore, this hypothesis is accepted.
	Perceived Behavioural Control	0.133	0.012	0.072	0.001	Practical Learning in Programmes mediates the relationship between Entrepreneurship Education and Perceived Behavioural Control (p-value = 0.001 < 0.05). Furthermore, this is a partial mediation because the direct effect of Entrepreneurship Education on Perceived Behavioural Control is significant (0.012 < 0.05). Therefore, this hypothesis is accepted.

Source: Researcher's own (2024)

Entrepreneurship Education and Attitudes Towards Entrepreneurship: the direct effect of EE on ATE is positive ($\beta = 0.054$) but non-significant ($p = 0.334$). The indirect effect through PLP is also non-significant ($\beta = 0.028$, $p = 0.182$), suggesting that PLP does not mediate this relationship. As the indirect effect is non-significant, the hypothesis that Practical Learning mediates the relationship between EE and ATE is rejected.

Entrepreneurship Education and Subjective Norms: the direct effect of EE on SN is negative ($\beta = -0.022$) and non-significant ($p = 0.674$). However, the indirect effect through PLP is significant ($\beta = 0.067$, $p = 0.003$), indicating that Practical Learning fully mediates the relationship between EE and SN. The full mediation is supported by the non-significant direct effect, meaning PLP explains the influence of EE on SN. Thus, this hypothesis is accepted.

Entrepreneurship Education and Perceived Behavioural Control: the direct effect of EE on PBC is significant ($\beta = 0.133$, $p = 0.012$) and the indirect effect through PLP is also significant ($\beta = 0.072$, $p = 0.001$). This suggests partial mediation, where PLP explains part of the relationship between EE and PBC, but EE still has a significant direct effect. Therefore, this hypothesis is accepted as well.

In summary, PLP serves as a mediator for two relationships: fully mediating the effect of EE on SN and partially mediating its effect on PBC. However, it does not mediate the relationship between EE and ATE.

5.10 Conclusion

This chapter provided a comprehensive analysis of the data collected for the study covering the stages of preliminary data processing, descriptive statistical analysis and inferential statistical analysis, including hypothesis testing through structural equation modeling. The preliminary data analysis covered the data cleaning and coding, detection of outliers, handling of missing values and assessment of normality to ensure the data met the assumptions for analysis. Additionally, a non-response bias test was conducted to confirm that the sample was representative of the target population, improving the reliability of the findings. It also covered the descriptive analysis which was performed on demographic characteristics of the respondents and core study variables, including their exposure to EE, their EI and the presence of practical learning components in their programmes of study. Key aspects of EI were detailed, with a focus on students' ATE, SN, and PBC, providing an overview of the general inclination towards entrepreneurship within the student population.

The final stage involved the results of the inferential statistics involving the reliability and validity of the measurement model that was confirmed through tests for reliability and convergent validity, ensuring that the constructs measured were both consistent and representative of their theoretical dimensions. The chapter focused on the SEM that was employed to test the proposed model, starting with CFA to validate the constructs, a common variance bias test to control for any potential bias and discriminant validity assessments using Fornell and Larcker's criteria to confirm the distinctiveness of each construct. The structural model analysis yielded insights through hypotheses testing, where standardized regression analyses assessed both direct effects (e.g., the effects of

EE on students' EI) and mediation effects (i.e., the influence of practical learning on the relationship between EE and EI). The findings highlighted that while EE impacts students' EI, practical learning plays a mediating role by enhancing students' SN and PBC. However, it does not mediate the relationship between EE and ATE.

Having presented and analyzed the empirical results, the next chapter interprets these findings in relation to the study's objectives, research questions, and theoretical framework. It provides a detailed discussion of how the results align with or diverge from existing literature on entrepreneurship education (EE), Practical Learning in Programmes (PLP), and entrepreneurial intention (EI).

CHAPTER 6

DISCUSSION OF RESULTS

6.1 Introduction

The results of the study following the elaborate analysis conducted in the previous chapter are discussed in this chapter. The discussion is presented in two parts. The first part covers the descriptive statistics (including personal information of the respondents, entrepreneurship at the TTU, entrepreneurial intentions of the respondents and practical learning in programmes of study), while the second part presents the inferential statistics that dealt mainly with the results of the structural model analysis covering the research questions of the study.

6.2 Personal profile of respondents

The gender differences have been well-researched in the literature on entrepreneurial intention revealing higher tendency for both men than women's inclination to entrepreneurship (Bosma et al. 2022). However, Henry et al. (2023) have indicated that the rise in entrepreneurship support programmes such as provided in schools have influenced female entrepreneurial intentions. As seen in Chapter 5, there were more female (59.0%) than male (41.0%) student representation in the study sample. While the study does not explicitly compare entrepreneurial intentions across gender, this representation provides valuable context for interpreting the results, as differences in gendered experiences and access to practical learning opportunities may subtly influence students' entrepreneurial attitudes and intentions.

The age distribution of the respondents in the study indicated a generally young population with the majority (92.1%) of the respondents aged below 30 years. The literature has shown the critical role played by age in influencing EI. Recent research by Kautonen et al. (2023) has shown that EI age-wise is bell-shaped indicating a generally lower EI among younger and older (below 30 years and above 40 years) and peaks in the age range of 30-40. Since most of the respondents in this study were aged lower than the average EI peak age range (Kautonen et al. 2023), it is expected that the EE intervention will likely boost students' EI as they transition into their thirties. Furthermore, younger adults such as constituted in this sample have a higher tendency than older individuals to pursue innovative activities (Lévesque and Minniti 2021) that are critical in the increasing development in the entrepreneurship landscape.

Marital status has been associated with different levels of entrepreneurship intentions. Although the respondents were generally young, the results of the study revealed that the majority (97.8%) were single. Only 10 (1.9%) were married and two out of the respondents sampled were widowed. The results portend positive outlook for entrepreneurship as single (unmarried) people, unlike married individuals often with higher financial responsibilities, are less risk-averse and possess more stable financial support (Ferreira and Jimenez 2023).

The employment history of individuals has been linked to their EI. Although, students in Ghana would normally seek permanent employment after undergoing their post-tertiary national service programme, some students would sometimes engage in some form of

employment either to make ends meet or sponsor their own education prior to or during their studies. The results of the study revealed that 229 students (43.5%) had never been employed. Those who were currently employed while studying were 96 (16.3%), the majority (84.4%) of whom were self-employed. In all, students who have had some employment experiences were 255, thus constituting 48.4% of the respondents, while 43.5% had never been employed. Nonetheless, existing literature indicates that both categories of the respondents are positively related to EI. For instance, research by Raffiee and Feng (2022) indicate that individuals who had previously been employed were more likely to develop EI while Caliendo and Kritikos (2021) reveal that the experience of unemployment can act as push factor for individuals to explore entrepreneurial opportunities.

Finally, regarding the respondents' family business background, the study investigated which members of their family had ever established or operated a business. The study results revealed that a slight majority (50.6%) of the respondents responded that their own parents had established their own businesses. This was followed by other family members (20.3%) and siblings or cousins (14.8%). Those who said no one in their families had ever started a business were 76, constituting only 14.3%. This result presents a positive basis for examining EI as existing research has established positive relationship between family business background and individual's EI (Carr and Sequeira 2022; Van Auken et al. 2023). The demographic information of the respondents is shown in Table 5.1.

6.3 Entrepreneurship education at TTU

EE was examined and defined by its content and delivery methods of the entrepreneurship course. According to Haneberg et al. (2022) for an effective EE to cultivate an entrepreneurial spirit among students, there is the need for curricular activities with a more practical approach and greater interaction between students and real-world challenges. Consequently, the course attributes included that: 1) the course delivered a lot of practical learning, (2) the course involved real-world examples, (3) the course engaged students in hands-on activities, (4) the course prepared students for identifying and solving practical business challenges, (5) students had opportunities to interact with entrepreneurs and professionals, (6) the course provided opportunities for students to develop and pitch their own business ideas, (7) the course helped students to understand the practical aspects of starting their own businesses, (8) the course provided overall satisfactory practical learning experiences and (9) the course incorporated guest speakers or real-world examples.

Based on a five-point Likert scale ranging from 'Strongly disagree' to 'Strongly agree', most respondents agreed that most of these experiential learning measures described the entrepreneurship course. In addition, the 7-point Likert scale revealed that most respondents were overwhelmingly positive about their intentions towards starting their own businesses in all the given measures. The central tendency analysis results (shown in Appendix 11) as well as the frequency table (Table 5.1) indicated that the respondents largely found the entrepreneurship programme of the university to be mostly experiential and practical based on the measures given. For the purpose of cultivating entrepreneurial

mindsets and intentions in the respondents, it is safe to assume that the nature of EE based on the course characteristics is sufficient since it offered the experiential learning context. Thus, the entrepreneurship programme of the university provided opportunity for students' active participation as prescribed by Sukaveiworakit et al. (2018) and an experiential learning environment as suggested by others (e.g., Manimala and Thompson, 2017; Haneberg et al. 2022). This observation is supported by the results of median and standard deviation scores presented in the central tendency measures below.

Researchers (such as Nabi et al. 2017a; Hahn et al. 2020; Farrokhnia et al. 2022) have suggested that, for an effective EE to cultivate an entrepreneurial spirit among students, there is the need for curricular activities with a more practical approach and greater interaction between students and real-world challenges (Bandera, Collins, and Passerini 2018; Bell 2019). Consequently, the course attributes included that: 1) the course delivered a lot of practical learning, (2) the course involved real-world examples, (3) the course engaged students in hands-on activities, (4) the course prepared students for identifying and solving practical business challenges, (5) students had opportunities to interact with entrepreneurs and professionals, (6) the course provided opportunities for students to develop and pitch their own business ideas, (7) the course helped students to understand the practical aspects of starting their own businesses, (8) the course provided overall satisfactory practical learning experiences and (9) the course incorporated guest speakers or real-world examples.

The described attributes of the entrepreneurship courses play a pivotal role in shaping students' EI by providing practical, hands-on learning experiences, real-world insights and opportunities for direct engagement with the entrepreneurial process. The overwhelmingly positive response from the respondents highlights the importance of experiential learning in fostering a strong entrepreneurial mindset and preparing students for real-world business challenges. Continued emphasis on these course attributes can further enhance the impact of EE on developing these students into future entrepreneurs. This is in light of the fact that the course could help these students understand the practical aspects of starting their own business and equip them with the necessary skills to navigate the complexities of business start-up and management (Liguori and Winkler 2020).

6.4 Entrepreneurship intentions of respondents

Students' entrepreneurial intentions were generally positive with the majority of students strongly indicating a general inclination towards starting their own firms. No matter what it takes 71.2% stated that starting their own firms is their ultimate ambition (70.9%); to set up their own firms even if they already have a paid job (70.7%); and to set up their own firm after they complete their studies (68.0%). The high percentage (71.2%) of students willing to start their own businesses "no matter what it takes" highlights a strong commitment and persistence, which are critical entrepreneurial traits in fostering resilience and a problem-solving mindset. This emphasizes the assertion by Nabi et al. (2022) that EE often includes experiential learning components that help students

develop a "can-do" attitude, essential for overcoming challenges in entrepreneurial ventures.

Furthermore, the finding that 70.9% of students consider starting their own firms as their ultimate ambition reflects the impact of EE on shaping students' long-term goals. EE programmes that include vision-setting exercises and exposure to entrepreneurial role models have been shown to enhance students' ambition to become entrepreneurs (Luis-Rico et al. 2020). Such programmes often include goal-setting workshops and mentoring, which align students' personal ambitions with entrepreneurial career paths (Nabi et al. 2022). The willingness of 70.7% of students to pursue entrepreneurship even while holding paid jobs indicates a readiness to take calculated risks and manage multiple responsibilities. This aligns with the findings from studies that show that EE encourages risk-taking and strategic thinking (Liguori and Winkler 2020).

Finally, with most of the students planning to start their firms after graduation, the impact of EE on future EI is evident. This statistic reflects the effectiveness of EE in instilling confidence and readiness among students to embark on entrepreneurial ventures post-graduation. Research by Coțiu (2025) suggests that EE equips students with the necessary skills, networks and resources, which they are eager to apply after completing their studies. In essence, these statistics collectively underline the significant role of EE in fostering strong EI among students. By equipping students with the necessary skills, mindset and confidence, EE effectively prepares them for entrepreneurial careers, even amidst challenges and uncertainties. Recent literature corroborates these findings,

emphasizing the critical impact of educational interventions in shaping entrepreneurial aspirations and actions (Liguori and Winkler 2020; Nabi et al. 2022). The results of the antecedents of EI of the respondents are discussed below.

6.4.1 Attitudes of students towards entrepreneurship

The attitude of students was generally positive as most students 'strongly agreed' to each of the measures. The results reveal that 54.5% of students strongly agreed that being an entrepreneur would give them some satisfaction; 51.3% strongly agreed that being an entrepreneur implied more advantages than disadvantages; 51.1% strongly agreed that a career as an entrepreneur is attractive to them; and 50.4% strongly agreed that among other options, becoming an entrepreneur would be ideal for them. The positive attitude displayed by students, with over half strongly agreeing on measures related to the satisfaction, advantages, attractiveness and the ideal nature of entrepreneurship is reflective of the transformative impact of EE. Nabi et al. (2022) have observed that well-structured entrepreneurship education programmes significantly enhance students' positive attitudes towards entrepreneurial careers. These programmes typically expose students to real-world entrepreneurial scenarios, success stories and role models, which help in building a favourable perception of entrepreneurship as a rewarding career option. Furthermore, Sahoo (2025) suggest that the increased satisfaction associated with EI stems from the intrinsic rewards such as autonomy, creativity and self-fulfillment that entrepreneurship promises, often emphasized in educational curricula.

6.4.2 Subjective norms of students about entrepreneurship

The subjective norms regarding entrepreneurship were investigated in the study and the results revealed that their significant others may have a general influence on their decisions to take up entrepreneurship as an employment choice. The measures adapted from Asimakopoulos et al. (2019) and Ephrem et al. (2019) involved four statements about which the respondents were asked to indicate their strength of agreement. However, compared to their strong agreement to all the measures of their attitudes towards entrepreneurship, the results indicated lower subjective norms effects among the respondents. As indicated in Appendix 8, it was the influence of their closest family members (representing 54.3%) and closest friends (representing 53.0%) agreeing to their decision to start their own business that received a strong effect. Furthermore, 41.2% strongly agreed, while 17.3% agreed that they cared about the opinions of their circle of close friends regarding starting a new business. In addition, 41.2% strongly agreed while 21.4% agreed that in their communities most people consider starting a new business as desirable.

Secondly, subjective norms, which represent the perceived social pressure to engage in entrepreneurship were noted to have a comparatively lower effect, with significant influence stemming from close family members and friends. This finding is consistent with Asimakopoulos et al. (2019) and Ephrem et al. (2019) who assert that while close social circles influence entrepreneurial intentions, the impact is less pronounced than personal attitudes and perceived behavioural control. EE can moderately shift subjective norms by involving family and community stakeholders through entrepreneurial showcases, family

business projects and community engagement activities. However, altering deep-rooted cultural perceptions and societal attitudes towards entrepreneurship requires broader systemic changes, which extend beyond the classroom as suggested by Kaur (2025).

6.4.3 Students perceived behavioural control

The respondents' perceptions of behavioural control for entrepreneurship were investigated using measures adapted from Linan and Chen (2009). The results as seen in Appendix 8, generally revealed varied levels of perceived entrepreneurial self-efficacy among students. With respect to starting their own firms, 43.8% strongly agreed while 16.5% agreed that they are capable. Similarly, 41.2% strongly agreed while 18.6% agreed that they possess sufficient personal skills and knowledge to launch and manage their own firms. Also, regarding their ability to overcome obstacles and challenges in starting and managing their own enterprises, 41.0% strongly agreed while 18.8% agreed that they are capable. Finally, regarding the respondents' ability to start and manage their own firms in times of economic difficulties, there was an above average indication of self-efficacy. Indeed, 44% of the respondents strongly agreed while 17.7 % of the respondents agreed that they could start and manage their own businesses in difficult economic times. In a nutshell, most of the respondents indicated high self-efficacy regarding these four measures. However, there was a comparatively lower perception of self-efficacy among the respondents regarding starting a business without external help. Among the respondents, only 27.1% strongly agree and 9.8 agreed that they did not require help from anyone to start their own firms.

Finally, perceived behavioural control, which relates to students' confidence in their ability to start and manage a business, shows strong levels of agreement in self-efficacy measures. EE plays a crucial role in building this confidence through practical learning experiences, simulations and mentorship programmes. The high levels of agreement with statements regarding overcoming obstacles and starting businesses during economic difficulties underscore the role of experiential learning in EE. Research by Chen et al. (2024) supports these findings, indicating that students who undergo EE develop greater self-efficacy due to exposure to business planning, problem-solving exercises and direct entrepreneurial experiences.

However, the lower confidence in starting a business without external help suggests a gap in the curriculum regarding resource mobilization and networking skills. Addressing this gap could involve integrating modules on venture funding, partnership development and leveraging support networks as emphasized by Liguori and Winkler (2020). The statistical results highlight the nuanced impact of EE on students' EI. While there is significant progress in fostering positive attitudes and perceived behavioural control, there is a need for enhanced focus on influencing subjective norms and equipping students with skills for independent business initiation. Continued development and refinement of EE programmes are essential to bridge these gaps and fully harness the potential of aspiring entrepreneurs.

6.5 Practical Learning in Programme of study (PLP)

The extent of practical learning experiences involved in students' programmes of study (PLP) were examined as the basis for assessing the backgrounds of the respondents in enhancing the effects of EE on their EI. PLP was a single item variable by which the respondents were made to state the extent to which their programmes of study involved practical learning. This represents the mediating factor in the examination of the role of EE in developing students' EI. According to the results in Table 5.2, 42.1% of the respondents indicated that they were exposed to practical experience in the department to some extent; 41.2% collectively indicated that their programmes involved practical learning to a 'large extent' and 'very large extent'; and 16.7% indicated that they experienced practical learning to little and no extent. The results show that more programmes of study involved practical learning activities than those that did not. This provided sufficient representation of the construct (PLP) for analysis in pursuit of the research purpose.

6.6 Hypotheses test results

The results of the structural model analyses to test the research hypotheses are discussed in the second section of the chapter. To reiterate, this study's objectives are as follows:

1. to determine the extent of EE in shaping the personal attitudes of students towards entrepreneurship;
2. to establish how EE affects the subject norms of students regarding entrepreneurship;

3. to establish the extent to which EE influences students PBC of entrepreneurship;
and
4. to ascertain if practical learning in students' programmes of study mediate the relationship between EE and their intentions towards entrepreneurship.

6.6.1 Direct Effects of Practical Learning in Programmes

The findings confirm Hypothesis H4, demonstrating a significant positive relationship between EE and PLP ($\beta = 0.403$, $p < 0.05$). This aligns with existing research that underscores the importance of experiential learning in EE. Scholars such as Neck et al. (2024) argue that experiential learning such as internships, business simulations and startup projects are critical in developing entrepreneurial competencies by enabling students to engage with real-world entrepreneurial processes. Such practical engagements allow students to apply theoretical knowledge in real-world contexts, thereby enhancing their confidence, skills and ultimately their EI. Furthermore, Yuniasari et al. (2025) found that students participating in experiential learning opportunities reported higher self-efficacy and a clearer understanding of entrepreneurial processes, which significantly influenced their intention to pursue entrepreneurial careers. This aligns with the findings of the current study, which demonstrate a positive direct relationship between practical learning and EI.

However, the relationship between PLP and ATE was found to be non-significant ($p > 0.05$), despite a positive effect ($\beta = 0.070$). This suggests that while PLP is effective in enhancing students' practical skills and competencies, it may not significantly alter their

underlying attitudes towards entrepreneurship. This is consistent with the findings from Ou and Kim (2024) who note that attitudinal shifts often require more than just experiential learning; factors such as personal interest, cultural influences and long-term exposure to entrepreneurial thinking play crucial roles.

6.6.2 Mediation Effects of Practical Learning in Programmes (PLP)

The second part of the analysis concerns the mediating role of PLP in the relationship between EE and EI. The results of the mediation analysis as presented in Table 5.3, indicates that PLP acts as a significant mediator, suggesting that the effectiveness of EE in fostering EI is significantly enhanced by students' engagement in practical learning experiences in their programmes of study. The mediating effect is supported by studies such as those by Miličević et al. (2025) which argue that experiential learning acts as a crucial bridge between theoretical education and practical entrepreneurial behaviour. When students are exposed to practical learning, they not only gain technical skills but also develop critical entrepreneurial attitudes and self-efficacy, which are essential for fostering EI.

6.6.2.1 Effect Sizes and Implications

The analysis also provides insights into the effect sizes. The small to medium effect sizes ($f^2 \leq 0.14$ for small, f^2 between 0.15 and 0.34 for medium) observed in the mediation analysis suggests that while the impact of PLP is significant, there is room for enhancing its effectiveness. This calls for a more structured integration of practical learning components in EE curricula. Moreover, the findings align with Zhou et al. (2024) who

emphasize the importance of aligning educational content with practical entrepreneurial experiences. By leveraging on PLP more deeply in EE, institutions can better prepare students for entrepreneurial endeavours, thereby increasing the likelihood of them pursuing entrepreneurial careers.

Therefore, the findings underscore the critical role of practical learning programmes in mediating the relationship between EE and EI. Practical learning not only enhances the direct impact of EE on EI but also serves as a vital conduit for translating theoretical knowledge into entrepreneurial action. The mediation analysis offers a deeper understanding of how PLP influences the relationship between EE and the individual antecedents of EI as discussed in the following sections.

6.6.2.2 PLP and Attitudes Towards Entrepreneurship (ATE)

Hypothesis H11, predicting the mediating effect of PLP between EE and ATE was rejected. This finding suggests that the extent of hands-on learning experienced in students' academic programmes does not significantly impact how EE influences students' attitudes towards entrepreneurship. This may indicate that ATE is more resistant to change through experiential learning alone, echoing insights from studies like that of Liñán and Fayolle (2015), which highlight the complex interplay of cognitive and affective components in shaping entrepreneurial attitudes.

6.6.2.3 PLP and Subjective Norms (SN)

In contrast, PLP was found to fully mediate the relationship between EE and SN ($p = 0.003$), supporting Hypothesis H12. This indicates that practical learning experiences significantly enhance the perceived social support and encouragement that students receive from their significant others regarding entrepreneurial pursuits. According to AbdulRafiu et al. (2025), experiential learning can expose students to entrepreneurial networks and environments, thereby strengthening the social norms that support entrepreneurial behaviour.

6.6.2.4 PLP and Perceived Behavioural Control (PBC)

Finally, PLP partially mediated the relationship between EE and PBC as indicated by the acceptance of Hypothesis H13 ($p = 0.001$). This partial mediation suggests that while EE directly enhances students' perceived control over entrepreneurial tasks, PLP further strengthens this effect by providing practical experiences that build students' confidence and self-efficacy. This finding is in line with Bandura's (1997) theory of self-efficacy, which emphasizes the role of mastery experiences in enhancing perceived behavioural control. These findings underscore the critical role of practical learning embedded in students' programmes of study in enhancing the effectiveness of EE. While PLP does not significantly influence ATE, it plays a crucial role in shaping SN and PBC, thereby fostering stronger EI. Furthermore, while PLP does not mediate all aspects of the relationship between EE and EI, its significant influence on SN and PBC highlights its essential role in EE.

6.7 Findings of research objectives

Based on the objectives, the findings of the research findings are discussed as follows:

6.7.1 Extent of entrepreneurship education in shaping the personal attitudes of students towards entrepreneurship (Objective #1)

The extent of EE in shaping students' ATE and consequent effect on their EI was measured in H₂ which postulated that EE has a positive significant effect on students' ATE. However, the research findings did not fully prove this assumption. EE had a positive ($\beta = 0.054$), but small ($f^2 \leq 0.14$), and non-significant effect ($p > 0.05$) on ATE. This hypothesis was therefore rejected. Thus, the effect of EE was positive but not effectively cultivating entrepreneurial attitudes in any significant manner amongst the students. The implication is that although the study revealed generally strong and positive attitudes of students towards entrepreneurship (Appendix 7), this observation is not attributable to their participation in the entrepreneurship education programme.

Furthermore, the positive attitudes of students towards entrepreneurship were revealed in the study to have a significant positive effect on their intentions towards entrepreneurship. The test outcome of H₁ which stated that "attitudes towards entrepreneurship have a significant positive effect on students' entrepreneurial intention" revealed a significant positive effect in the relationship between ATE and students' EI ($\beta = 0.583$, $f^2 = 0.350$, $p < 0.05$). Consequently, H₁ is accepted. The literature provides a nuanced view on this outcome. Studies by Rosienkiewicz et al. (2024) highlight that EE's impact varies significantly based on the content, delivery and practical orientation of the

courses. The limited effect observed in this study may point to a need for a more immersive, experiential and practice-oriented pedagogy that could better influence attitudes. For instance, Kurczewska et al. (2020) emphasize that theoretical knowledge without practical application often falls short in fostering entrepreneurial attitudes, which align with the current findings.

Conversely, the study robustly confirms H1, which posits that positive attitudes towards entrepreneurship significantly influence EI ($\beta = 0.583$, $f^2 = 0.350$, $p < 0.05$). This aligns with Ajzen's (1991) Theory of Planned Behaviour, which underscores attitudes as a key predictor of intention. Empirical studies by Munawar et al. (2023) also validate this, showing that favourable attitudes towards entrepreneurship enhance individuals' intentions to engage in entrepreneurial activities. This raises questions about the effectiveness of current educational frameworks and the need to tailor EE to address both cognitive and affective dimensions of learning. Therefore, while the study supports the strong link between entrepreneurial attitudes and intentions, it highlights the need for a more impactful approach in EE to influence attitudes effectively. Future research could explore how different pedagogical methods and programme structures enhance the attitudinal impact of EE.

6.7.2 Effects of entrepreneurship education on subjective norms of students regarding entrepreneurship (Objective #2)

To test the influence of EE on the possibility of opinions and influences of students' close relatives and associates to affect their choices of entrepreneurship as career paths were

tested in H₅ which proposed that there is a significant positive relationship between EE and SN of students. The results revealed that EE had a negative ($\beta = -0.022$), small ($f^2 \leq 0.14$) and non-significant effect ($p > 0.05$) on SN. This hypothesis was therefore rejected. The result implies that EE played no significant role regarding students' perception of the ability of their significant others to influence their entrepreneurship career decisions. As indicated in Table 9, family members and closest friends were the two major significant others most likely to agree to their decision to start their own business. However, these perceptions of influence were not driven in any significant way by their participation in the entrepreneurship courses.

H₁₀ stated that students' SN regarding entrepreneurship have a significant positive relationship with their EI. The findings revealed that SN have a positive ($\beta = 0.169$), significant effect ($p < 0.05$), but small ($f^2 \leq 0.29$) on EI. Therefore, this hypothesis is accepted. Since family members, close friends and other factors were generally perceived by the respondents to support their entrepreneurship career choices (as seen in Appendix 8), this seems to explain the positive and significant relationship between SN's influences on their EI.

The negative and non-significant relationship between EE and SN is a surprising result, diverging from some previous research. According to Ajzen's (1991) Theory of Planned Behaviour, SN - defined as the perceived social pressure to perform or not perform a behaviour - are an essential determinant of EI. However, this study suggests that EE does

not significantly influence students' perceptions of their significant others' opinions regarding entrepreneurship.

Recent studies, such as those by Liguori and Winkler (2020) have indicated that while EE can enhance knowledge and skills, its impact on social and normative influences is less direct. It appears that the perceptions students hold about their family and close friends' opinions may be more deeply rooted in personal and cultural contexts rather than shaped by formal educational interventions. This aligns with the findings by Shirokova et al. (2016), who noted that familial and societal support often stems from broader social and cultural environments rather than educational experiences.

Interestingly, the data revealed that students perceive significant support from their family and friends for entrepreneurial endeavours (Appendix 8). This perceived support could serve as a motivational factor, reinforcing their intentions to pursue entrepreneurship, even if EE does not directly influence these social perceptions. Additionally, the study underscores the importance of SN in shaping EI, suggesting that interventions focusing on enhancing social support structures could be as crucial as those focusing on skills development. Future research could explore the interplay between cultural contexts, family dynamics and educational interventions to better understand how to effectively leverage SN in EE. Thus, while EE has a limited direct impact on SN, the latter plays a crucial role in shaping EI. Enhancing the role of significant others in EE could provide a more holistic approach to fostering entrepreneurial mindsets.

6.7.3 The extent of entrepreneurship education on students perceived behavioural control (Objective #3)

The research findings revealed that EE has a positive significant effect on students PBC as predicted in H₃. It further indicated, though, that this effect was small ($\beta = 0.133$, $p < 0.05$, $f^2 \leq 0.12$). Thus, students' participation in the entrepreneurship programmes significantly buoyed their self-efficacy beliefs to start their own enterprises. In the relationship between PBC and EE, as predicted in H₆, there was a significant positive effect between the constructs ($\beta = 0.136$, $f^2 \leq 0.14$, $p < 0.05$). PBC is a critical component of Ajzen's (1991) Theory of Planned Behaviour which reflects individuals' confidence in their ability to perform entrepreneurial tasks. The significant but small effect of EE on PBC suggests that participation in entrepreneurship programmes helps students develop a sense of self-efficacy in entrepreneurial activities, albeit modestly.

This aligns with the findings from studies by Nowiński et al. (2019), which emphasize the role of EE in enhancing students' confidence and perceived competence to undertake entrepreneurial ventures. The validation of H₆ indicates that PBC significantly affects EI, corroborating existing literature. PBC acts as a key determinant of EI by enhancing individuals' confidence in their ability to manage the complexities of starting and running a business (Qazi et al., 2020; Wei and Nordin 2020; Yasir et al. 2021). The findings are consistent with empirical evidence from studies by Pai et al. (2024) which show that individuals with higher PBC are more likely to exhibit stronger EI.

However, the small effect size raises questions about the depth and breadth of the EE provided. Scholars like Bhinder and Kaur (2025) argue that practical, hands-on components in EE are more effective in significantly boosting students PBC. The findings suggests that while current EE programmes positively influence PBC, there may be room for improvement in programme design to create a more robust impact. These findings underscore the importance of integrating comprehensive and experiential learning opportunities within EE to strengthen PBC. Programmes that include real-world entrepreneurial experiences, mentorship and exposure to entrepreneurial ecosystems can substantially enhance students' confidence and control over entrepreneurial tasks. This, in turn, could lead to a stronger influence on their EI.

Furthermore, the results highlight the role of self-efficacy as a significant factor between EE and EI. Thus, while EE significantly boosts students' PBC and EI, the effect is relatively modest. Enhancing the experiential and practical aspects of EE could lead to more substantial outcomes, fostering a greater sense of competence and readiness among students to embark on entrepreneurial careers.

6.7.4 The mediating effect of practical learning in the relationship between entrepreneurship education and students' entrepreneurial intentions (Objective #4)

The research findings offer valuable insights into the predictive and mediating effects of PLP within the context of EE and their influence on EI. The study confirmed the significant positive relationship between EE and PLP, as well as PLP's varying impact on

antecedents of EI, including PBC, SN and ATE. This section discussed the two-part analysis results, focusing on the direct effects of PLP and the mediation analysis.

6.8 Conclusion

This chapter presented a discussion of the results of the study's findings covering descriptive statistics, hypothesis tests and key findings related to the role of EE in shaping students' EI of students of the TTU. The descriptive statistics revealed that the EE programme of the university was largely experiential and student EI were majorly positive. However, less than half of the sample indicated that their academic programmes included practical learning components. The hypotheses test results revealed that the EE programme had a positive significant effect on students' SN and PBC but not their entrepreneurial attitudes. Finally, while PLP did not significantly impact ATE, it played an essential mediating role in shaping SN and PBC, both of which are important for developing EI. Although PLP did not mediate all relationships between EE and intentions, its influence on SN and perceived control highlights its vital role in effective EE.

The discussions presented in Chapter Six form the foundation for the final synthesis of this study. The next chapter provides an integrative summary of the entire study and draws conclusions based on the empirical evidence presented. It also outlines the practical implications, recommendations, and contributions of the research, particularly regarding the mediating role of Practical Learning in Programmes (PLP) in the relationship between Entrepreneurship Education (EE) and students' Entrepreneurial Intentions (EI).

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

This chapter examines the mediating role of practical learning in academic programmes in the relationship between EE and students' EI. The chapter covers a summary of the entire project, conclusions drawn from the various test findings and recommendations. It further includes new knowledge embedded in the study, implications of the research results and recommendations deduced from the research findings as well as limitations associated with the study. The study was conducted among students of the TTU in Ghana. It was purposed on establishing the relationship between EE and student EI. The main aim of this current study was to examine the role of EE in developing the students' EI. The dependent variable of the study (entrepreneurial intentions of students) is assessed indirectly through its predictors (ATE, SN and PBC) as prescribed in the TPB while the mediating variable (PLP) represents the construct for the suggested modification to the TPB model. The next sections present the conclusions of the study as guided by the research questions. It begins with a recap of the research questions stated in Chapter 1.

7.1.1 Research questions

The specific objectives of the study were as follows:

1. To what extent does EE shape the personal attitudes of students towards entrepreneurship?
2. How does EE affect the SN of students regarding entrepreneurship?

3. To what extent does EE influence students PBC of entrepreneurship?
4. Does practical learning in students' programmes during their studies mediate the relationship between the entrepreneurship course and their intentions towards entrepreneurship?

7.2 Summary of findings

The following are the major findings reflecting the study objectives:

7.2.1 The extent of entrepreneurship education in shaping students' Attitudes Towards Entrepreneurship

Confirming earlier research findings (e.g. Shirokova et al. 2016; Nabi et al. 2017a, , Walter and Block 2016), the overall attitudes of students towards entrepreneurship were positive although only slightly above average in all the measures employed to examine the construct on a 7-point Likert scale. Despite the general positive ATE of the students, there was no evidence that EE helped shape these positive attitudes. The SEM (Standard regression path) test failed to confirm H2 (effect of EE on ATE); the effect of EE was positive though ($\beta = 0.057$), but small ($f^2 \leq 0.14$) and non-significant effect ($p > 0.05$) on ATE. Therefore, EE has no significant role in shaping students' attitudes towards entrepreneurship.

7.2.2 The relationship between entrepreneurship education and students'

Subjective Norms

The SN regarding the respondents' entrepreneurship decisions were mostly positive as most of them agreed with the statements gauging how their significant others would react if they chose to engage in entrepreneurship. The average median score in the assessment was 6.25 based on the 7-point Likert scale to assess the measure. Furthermore, the results of the regression analysis revealed an insignificant and negative relationship between entrepreneurship and the SN of students. Entrepreneurship had a negative ($\beta = -0.022$), small ($f^2 \leq 0.14$) and non-significant effect ($p > 0.05$) on SN. The negative coefficient suggests that as the independent variable increases, the dependent variable tends to decrease. As Obschonka et al. (2023) has observed, when EE fosters peer support and networking opportunities, it strengthens SN by reinforcing a social environment where entrepreneurship is encouraged and supported. The conclusion, therefore, is that students' SN have no significant relationship with EE.

7.2.3 The extent of entrepreneurial education influence on students Perceived

Behavioural Control

The levels of perceived entrepreneurial self-efficacy among students largely revealed positive outcomes regarding the various measures adduced. Most respondents indicated higher perceived self-efficacy in the matters of overall capacity to start their own firms, possessing sufficient personal skills and knowledge required to launch and manage their own firms, their ability to overcome obstacles and challenges and the ability to start and manage a firm successfully in difficult economic times. On the other hand, they expressed

lower perceived self-efficacy regarding starting a firm without seeking help from anyone. Furthermore, based on the standard regression analysis, there was a significant ($p < 0.05$) and positive ($\beta = 0.136$) relationship between EE and PBC. This study, therefore, concludes that EE significantly influences students PBC.

7.2.4 The mediating role of practical learning in programmes of study in the relationship between entrepreneurship education and their entrepreneurial Intentions

The mediating effects of practical learning in students' programmes of study (PLP) in the relationship between EE and students' EI was tested through the antecedents of EI; namely, ATE, SN and PBC as postulated by Ajzen (1991). The following are the test results for the mediation effect of PLP:

PLP does not mediate the relationship between EE and ATE because the indirect effect is non-significant ($0.175 > 0.05$). Secondly, PLP was found to mediate the relationship between EE and SN ($p\text{-value} = 0.003 < 0.05$). Indeed, this is a full mediation because the direct effect of EE on SN is non-significant ($0.686 > 0.05$). Finally, PLP mediated the relationship between EE and PBC ($p\text{-value} = 0.001 < 0.05$). Furthermore, this is a partial mediation because the direct effect of EE on PBC is significant ($0.009 < 0.05$). Therefore, practical learning in students' programmes of study mediated EE and SN and EE and PBC, but not EE and ATE.

7.3 Recommendations

Based on the findings of this study, the following recommendations are proposed to enhance the effectiveness of EE in fostering students' EI:

1. Enhance Practical Learning Components in EE Curricula:

Since PLP has shown a mediating effect, especially in influencing students PBC and SN, universities should expand hands-on, experiential learning opportunities within programmes of study that allow students to directly apply their knowledge and build practical skills. In addition, it is recommended that the university collaborates with local entrepreneurs and businesses for the purpose of providing students with practical insights into the entrepreneurial environments. Such partnerships can help students engage with real life challenges, thereby strengthening the practical relevance of their education and enhancing their self-efficacy (PBC). Finally, it is important to incorporate entrepreneurship projects that bring together students from different academic majors to foster a collaborative environment that reinforces supportive SN for entrepreneurship. Working across disciplines allows students to gain diverse perspectives and strengthens their social networks, positively influencing their EI.

2. Address the Limited Impact of EE on Attitudes Towards Entrepreneurship (ATE)

Since EE did not significantly shape students' attitudes towards entrepreneurship, TTU should consider broadening the content of entrepreneurship courses to cover not only practical skills but also mindset and attitude-focused training. This could include modules on resilience, innovation mindset and the value of entrepreneurship for social impact,

which may help shape more positive entrepreneurial attitudes. In addition, inviting successful entrepreneurs and alumni to share their entrepreneurial journeys can help inspire students, potentially enhancing their attitudes towards entrepreneurship. Real-life success stories can make entrepreneurship seem more attainable and attractive, thereby enhancing students' intrinsic motivation. Also, encouraging self-reflection activities, such as personal vision statements, self-assessments and goal-setting exercises could foster students' self-discovery of their entrepreneurial values and aspirations. These activities can create a more meaningful connection between EE and students' attitudes as they provide space for students to personally relate to entrepreneurship.

3. Strengthen the Role of Social Support Networks to Impact Subjective Norms (SN)

Given that EE's impact on subjective norms was found to be insignificant, creating an ecosystem that promotes peer support and networking is crucial. Universities can organize networking events, peer mentoring and workshops where students connect with others who share entrepreneurial interests. Such interactions can reinforce positive perceptions of entrepreneurship and provide a social environment that encourages EI. SN could be positively influenced by involving students' families and communities in EE events, such as "entrepreneurship showcases" where students present their projects. When families and communities are more engaged, they may become more supportive of students' entrepreneurial pursuits, thereby enhancing the SN surrounding entrepreneurship.

4. Capitalize on the Positive Impact of EE on Perceived Behavioural Control (PBC)

The significant impact of EE on students PBC emphasizes the importance of skills-based learning. TTU should continue to focus on developing students' entrepreneurial skills - such as financial planning, risk assessment and strategic thinking - through structured courses, workshops and mentorship programmes. This will ensure that students feel competent and confident in their ability to pursue entrepreneurial ventures. They should also leverage the university's resources such as business incubators, startup funding, mentorship programmes and advisory services to enhance students PBC by giving them practical tools to overcome challenges in their entrepreneurial journey. Such resources can act as a safety net, helping students feel more empowered to start their ventures. Finally, including modules on resilience training and problem-solving in EE courses can further build students' confidence in handling entrepreneurial challenges. When students are trained to view setbacks as learning opportunities, they are more likely to feel capable of managing the uncertainties associated with entrepreneurship.

5. Develop a Comprehensive Assessment Framework for EE Outcomes

To better understand the long-term impact of EE and practical learning on EI, longitudinal studies should be conducted to track students' progress and entrepreneurial outcomes over time. This could provide deeper insights into how EE influences EI and career decisions post-graduation. Also, incorporating structured feedback from students and alumni on EE content, practical learning experiences and support services can provide valuable insights for refining EE programmes. By continuously adapting to the needs and

experiences of students, EE programmes can become more responsive and effective in achieving their objectives.

In summary, to effectively foster EI among students, universities should emphasize practical learning experiences, broaden EE content to include attitudinal and mindset training and build stronger social support networks. While EE significantly enhances students PBC, creating a supportive environment through experiential learning, peer networks and family involvement may better influence SN. Furthermore, research into external influences on entrepreneurial attitudes is recommended to develop a more holistic approach to EE. Through these strategic enhancements, institutions can better equip students with the mindset, skills and support necessary to pursue successful entrepreneurial careers.

7.4 Implication of the study findings

The findings of this study presents important implications for theory and policy. These are discussed as follows:

7.4.1 Contribution to theory

First, this thesis has established the mediating role of Practical Learning in Programs (PLP) in the relationship between EE and their EI. As observed above, PLP has a significant influence on students PBC and SN relative to their EI, but not on their ATE. The study, therefore, predicts that the antecedents of EI among university students could further have a predictive relationship with the experiences, skills training and

psychological development acquired through the course contents and activities that form part of their general programmes of study.

Secondly, the study results indicated significant positive relationship between the entrepreneurship course components and Ajzen's (1991) predictors of EI. The implications support arguments by researchers that for EE to impact on EI, curricular activities should involve more practical approaches with students interacting more with real-world challenges (Bandera; Collins; Passerini, 2018; Bell, 2019). Focusing on the TTU, the findings of this research reveal the need to invest more in experiential learning components of the EE course delivery system.

7.4.2 Policy implications

The overwhelming desire of students to engage in entrepreneurship activities as revealed in this research forms the basis for government and policymakers to double down on their entrepreneurship support policy as a catalyst for economic development and a solution to the increasing unemployment challenges that the country is faced with. The following are specific policy implications of the research findings:

7.4.2.1 Enhancing Practical Learning Elements in Entrepreneurship Education:

Given that PLP mediates the relationship between EE and SN and PBC, policy initiatives should emphasize experiential components within academic programmes. Institutions of higher learning can integrate more internships, project-based learning and mentorship programmes into their entrepreneurship curricula. This approach could provide students

with hands-on experience, which not only strengthens their entrepreneurial skills but also builds a supportive network, thereby enhancing SN around entrepreneurship and boosting students' confidence in their entrepreneurial abilities.

7.4.2.2 Redefining Curriculum Goals to Focus on Behavioural Control:

Since EE has been shown to significantly impact PBC but not necessarily students' attitudes or SN, curriculum designers should emphasize building students' entrepreneurial self-efficacy. Policies should therefore prioritize skills-based learning outcomes, focusing on practical, actionable skills like problem-solving, resilience and resource management, rather than solely attempting to shift students' attitudes towards entrepreneurship.

Furthermore, given the significant role of PLP in mediating EE and EI, as seen in the research, universities should design their entrepreneurship programmes to ways that leverage practical experiences of various academic programmes as well as related industry practices and experiences in order enhance the impact of EE.

7.6 Recommendations for further research

Based on the findings of this study, several areas for further research can deepen the understanding of the role of EE and practical learning in fostering students' entrepreneurial intentions:

7.6.1 Examine the Mechanisms Behind How Practical Learning in Academic Programs Influence on Subjective Norms and PBC:

This study found that PLP fully mediates the relationship between EE and SN and partially mediates the relationship between EE and PBC. Further research could investigate specific types of practical learning to understand which elements most effectively shape these aspects of EI. Additionally, qualitative studies focusing on students' experiences in practical learning contexts could reveal insights into how these experiences cultivate a supportive social framework for entrepreneurship.

7.6.2 Assess the Long-Term Impact of Practical Learning on Entrepreneurial Intentions:

Future studies could follow students longitudinally to assess whether the mediating effects of practical learning on SN and PBC persist after graduation. Understanding how these factors influence post-graduation entrepreneurial activities would provide a clearer picture of the sustained impact of EE and practical learning on real-world entrepreneurial outcomes.

7.6.3 Analyze Gender and Discipline-Specific Effects of EE and Practical Learning:

This study could benefit from further research analyzing how gender and academic disciplines influence the impact of EE and practical learning on EI. For example, exploring if students in Science, Technology, Engineering and Maths (STEM) fields or the humanities respond differently to EE interventions or if there are gender-based

differences in the efficacy of practical learning on SN and whether these could lead to more tailored EE approaches that maximize inclusivity and impact.

7.7 Limitations of the current study

This study faced several limitations that should be considered when interpreting the findings and implications. First, the study employed a cross-sectional design, capturing data at a single point in time. This design limits the ability to draw causal conclusions about the relationships between EE, practical learning and EI. Since the study did not track changes over time, the longitudinal effects of EE on attitudes, SN and PBC may not have been fully captured. A longitudinal approach would be more effective in assessing the stability and development of entrepreneurial intentions over an extended period. Another limitation is the reliance on self-reported data, which could introduce social desirability bias. The participants may have responded in a manner they perceived as socially acceptable, potentially leading to an overestimation of positive attitudes and intentions towards entrepreneurship. This bias could affect the accuracy of the students' entrepreneurial inclinations as they might present themselves in a more favourable light than their actual EI.

The sample used in the study was drawn solely from TTU, which may limit the generalizability of the findings. The characteristics of students and the EE context at TTU might differ significantly from those at other institutions, either in Ghana or internationally. Variations in curriculum, culture and institutional support for entrepreneurship could lead

to different outcomes. Therefore, future research that includes a wider range of institutions and regions would be valuable to increase the generalizability of the results.

Additionally, the study assessed practical learning experiences as a broad category that includes internships, workshops and hands-on projects, without distinguishing between these types of experiential learning. Different forms of practical learning may impact entrepreneurial constructs, such as SN and PBC in distinct ways. A more detailed examination of these specific types of practical learning could provide a clearer understanding of which methods are most effective in fostering EI. The study also had a narrow focus on certain components of EE, potentially overlooking other influential pedagogical strategies and course content. For example, entrepreneurial mindset training, mentorship opportunities and exposure to entrepreneurial role models could play critical roles in shaping EI but were not directly explored in this research. Expanding the scope to include these factors might provide a more comprehensive understanding of how EE influences on students' EI.

Furthermore, since the study involved students from various academic majors, differences in the entrepreneurship orientation of specific programmes (such as business versus engineering) may have influenced the results. However, this variability was not controlled for the analysis, which could limit the precision of the conclusions regarding the effects of EE across different academic fields. Finally, while SEM was employed to test the relationships among EE, practical learning and EI, SEM relies on the assumption of linear relationships. This approach may not fully capture more complex, non-linear

interactions. Additionally, the model may have omitted unobserved variables that could influence the relationships being studied, further complicating the interpretation of the findings. These limitations highlight the need for future research to refine and expand upon the findings, considering broader samples, alternative methodologies and additional contextual factors that could shape students' EI more comprehensively.

7.8 Conclusions of the study

This study investigated the role of EE in shaping students EI, with a particular focus on the mediating effect of discipline-specific practical learning. The findings provide nuanced insights into the relationships among EE, practical learning in academic Programmes, and entrepreneurial intention antecedents, addressing the research questions comprehensively. The study revealed that although students exhibited generally positive ATE, EE did not significantly influence these attitudes. While there was a small positive effect, the results suggest that EE alone is insufficient to foster personal ATE, indicating that other factors may play a more substantial role in shaping students' entrepreneurial attitudes.

SN related to entrepreneurship were largely positive, reflecting a supportive social environment for entrepreneurial endeavours. However, the direct relationship between EE and SN was negative, small and non-significant. Notably, practical learning fully mediated this relationship. This indicates that practical experiences embedded within academic disciplines can strengthen SN by fostering peer support and social validation

of entrepreneurial pursuits. These findings highlight the critical role of practical learning in enhancing the social dimensions of EE.

In terms of PBC, EE demonstrated a significant positive effect, highlighting its effectiveness in improving entrepreneurial self-efficacy. Students expressed confidence in their ability to start and manage firms and navigate challenges, though some gaps in their ability to operate independently remained. Practical learning partially mediated this relationship, amplifying the impact of EE on entrepreneurial self-efficacy and reinforcing the importance of experiential learning in building confidence and competence in entrepreneurial skills.

The findings also showed that practical learning in academic programmes mediated the relationships between EE and certain entrepreneurial antecedents including SN and PBC, but it had no significant effect on the relationship between EE and ATE. This suggests that integrating and leveraging discipline-specific practical training into EE enhances SN and PBC, ultimately contributing to stronger EI. However, fostering entrepreneurial attitudes may require additional interventions beyond practical learning.

To summarize, while EE plays a vital role in shaping students' EI, its effectiveness is significantly enhanced when complemented by practical learning embedded within academic programmes. These findings underscore the importance of adopting tailored approaches to EE that leverage the unique practical components of different disciplines. By integrating experiential learning opportunities, such as internships, projects and

workshops, EE programmes can more effectively foster entrepreneurial attitudes, SN and self-efficacy, ultimately driving stronger EI among students.

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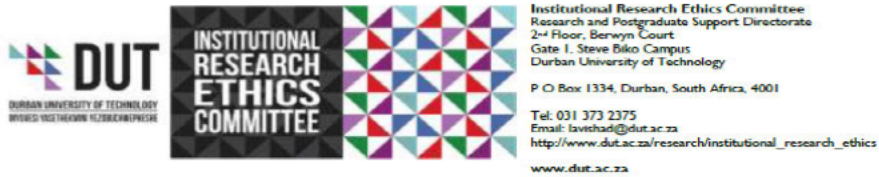
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APPENDICES

Appendix 1: Ethical Clearance Certificate



17 April 2023

Mr H Adam
Post Office Box 256
Takoradi
Ghana

Dear Mr Adam

The role of entrepreneurship education in developing entrepreneurial intentions among students at the Takoradi Technical University in Ghana
Ethics Clearance Number: IREC 276/22

The DUT-Institutional Research Ethics Committee acknowledges receipt of your notification regarding the piloting of your data collection tool.

Kindly ensure that participants used for the pilot study are not part of the main study.

In addition, the DUT-IREC acknowledges receipt of your gatekeeper permission letter.

Please note that **FULL APPROVAL** is granted to your research proposal. You may proceed with data collection.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the DUT-IREC according to the DUT-IREC SOP's.

Please note that any deviations from the approved proposal require the approval of the DUT-IREC as outlined in the DUT-IREC SOP's.

It is compulsory for a student or researcher to apply for recertification on an annual basis. The failure to do so will result in withdrawal of ethics clearance. It is the responsibility of the researcher and the supervisor to apply for recertification.

Yours Sincerely

Prof J K Adam
Chairperson: DUT-IREC

Appendix 2: Sample determination

Department	N	%	Est.	Actual
Accountancy and Finance	147	4	14	3
Auto Engineering	163	4.4	16	0
Construction Engineering Management	237	6.4	23	0
Ceramics	16	0.4	2	0
Civil Engineering	16	0.4	2	2
Electrical Engineering	335	9.1	32	11
Estate Management	43	1.17	4	0
Fashion Design	212	5.76	20	13
Graphic Design	276	7.5	26	116
Hospitality Management	252	6.85	24	63
Information Technology	557	15.15	53	9
Interior Design	8	0.21	1	0
Marketing	114	3.1	11	19
Medical Laboratory	13	0.35	1	107
Painting Design	46	1.25	4	3
Dispensary	36	0.97	3	0
Plant (Mechanical Engineering)	222	6.0	21	0
Plumbing	68	1.85	6	13
Procurement and Supply	458	12.5	44	32

Production (Mechanical Engineering)	44	1.19	4	0
Refrigeration (Mechanical Engineering)	14	0.38	1	0
Science Laboratory	56	1.5	5	55
Sculpture	15	0.4	1	0
Secretaryship	128	3.48	12	21
Statistics	19	0.5	9	0
Textiles	30	0.8	3	0
Tourism	52	1.4	5	62
Welding and Fabrication	98	2.66	9	0
Total	3675	100.0	356	537

Sources: Researcher's own

Appendix 3: Tests of normality

Construct	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Entrepreneurship education	0.134	468	0.000	0.913	468	0.000
Entrepreneurship Intention	0.236	468	0.000	0.746	468	0.000
Attitudes Towards Entrepreneurship	0.222	468	0.000	0.769	468	0.000
Subjective Norms	0.199	468	0.000	0.812	468	0.000
Perceived Behavioural Control	0.160	468	0.000	0.891	468	0.000
Practical Learning in Programmes	0.217	468	0.000	0.893	468	0.000

Source: Researcher's own (2024)

Appendix 4: HTMT tests

	Attitudes Towards Entrepreneurship	Entrepreneurial Intention	Entrepreneurship education	Perceived Behavioural Control	Practical Learning in Programmes	Subjective Norms
Attitudes Towards Entrepreneurship						
Entrepreneurial Intention	0.842					
Entrepreneurship education	0.087	0.073				
Perceived Behavioural Control	0.752	0.704	0.218			
Practical Learning in Programmes	0.095	0.077	0.410	0.238		
Subjective Norms	0.841	0.771	0.057	0.775	0.163	

Source: Researcher's own (2024)

Appendix 5: Entrepreneurship education in TTU

I gained a lot of practical learning from the Entrepreneurship course		
	N	%
Strongly Disagree	2	0.4
Disagree	13	2.8
Unsure	45	9.6
Agree	227	48.5
Strongly Agree	181	38.7
Total	468	100
The Entrepreneurship course involved real-world examples such as case studies		
Strongly Disagree	1	0.2
Disagree	12	2.6
Unsure	47	10
Agree	221	47.2
Strongly Agree	187	40
Total	468	100
The Entrepreneurship course engaged me in hands-on activities such as group exercises, projects or business acting (simulations).		
Strongly Disagree	1	0.2
Disagree	15	3.2
Unsure	40	8.5
Agree	206	44
Strongly Agree	206	44
Total	468	100
The Entrepreneurship course prepared me well for identifying and solving Practical		

Business Challenges		
Strongly Disagree	3	0.6
Disagree	15	3.2
Unsure	51	10.9
Agree	217	46.4
Strongly Agree	182	38.9
Total	468	100
My class had opportunities to interact with entrepreneurs and/or professionals during the Entrepreneurship course		
Strongly Disagree	3	0.6
Disagree	27	5.8
Unsure	80	17.1
Agree	200	42.7
Strongly Agree	158	33.8
Total	468	100
There were opportunities for me to develop and pitch my own business ideas during the Entrepreneurship course		
Strongly Disagree	3	0.6
Disagree	24	5.1
Unsure	47	10
Agree	179	38.2
Strongly Agree	215	45.9
Total	468	100
The Entrepreneurship course helped me to understand the practical aspects of starting and running a business		

Strongly Disagree	1	0.2
Disagree	20	4.3
Unsure	29	6.2
Agree	213	45.5
Strongly Agree	205	43.8
Total	468	100
I am satisfied with the overall practical learning experience provided by the entrepreneurship course		
Strongly Disagree	6	1.3
Disagree	22	4.7
Unsure	49	10.5
Agree	227	48.5
Strongly Agree	164	35
Total	468	100
The Entrepreneurship course incorporated guest speakers or real-world examples to enhance learning		
Strongly Disagree	6	1.3
Disagree	28	6
Unsure	70	15
Agree	191	40.8
Strongly Agree	173	37
Total	468	100

Source: Researcher's own (2024)

Appendix 6: Entrepreneurial intentions of students

I will set up my own firm after I finish school		
	N	%
Strongly Disagree	21	4.5
Disagree	25	5.3
Somewhat Disagree	19	4.1
Not Sure	48	10.3
Somewhat Agree	37	7.9
Agree	58	12.4
Strongly Agree	260	55.6
Total	468	100
I plan to set up my own firm even if I already have a paid job		
Strongly Disagree	17	3.6
Disagree	23	4.9
Somewhat Disagree	21	4.5
Not Sure	30	6.4
Somewhat Agree	46	9.8
Agree	66	14.1
Strongly Agree	265	56.6
Total	468	100
I intend to set up my own firm no matter what it takes		
Strongly Disagree	20	4.3
Disagree	20	4.3
Somewhat Disagree	20	4.3

Not Sure	42	9
Somewhat Agree	33	7.1
Agree	72	15.4
Strongly Agree	261	55.8
Total	468	100
Starting my own firm is my ultimate ambition		
Strongly Disagree	20	4.3
Disagree	21	4.5
Somewhat Disagree	20	4.3
Not Sure	41	8.8
Somewhat Agree	34	7.3
Agree	73	15.6
Strongly Agree	259	55.3
Total	468	100

Source: Researcher's own (2024)

Appendix 7: Attitudes towards entrepreneurship

Being an entrepreneur would give me some satisfaction		
	N	%
Strongly Disagree	17	3.6
Disagree	30	6.4
Somewhat Disagree	29	6.2
Not Sure	29	6.2
Somewhat Agree	44	9.4
Agree	64	13.7
Strongly Agree	255	54.5
Total	468	100
A career as an entrepreneur is attractive to me		
Strongly Disagree	18	3.8
Disagree	25	5.3
Somewhat Disagree	34	7.3
Not Sure	24	5.1
Somewhat Agree	44	9.4
Agree	84	17.9
Strongly Agree	239	51.1
Total	468	100
Among other options, becoming an entrepreneur would be ideal for me		
Strongly Disagree	19	4.1
Disagree	24	5.1

Somewhat Disagree	27	5.8
Not Sure	40	8.5
Somewhat Agree	44	9.4
Agree	78	16.7
Strongly Agree	236	50.4
Total	468	100
Being an entrepreneur implies more advantages than disadvantages		
Strongly Disagree	22	4.7
Disagree	25	5.3
Somewhat Disagree	27	5.8
Not Sure	31	6.6
Somewhat Agree	42	9
Agree	81	17.3
Strongly Agree	240	51.3
Total	468	100

Source: Researcher's own (2024)

Appendix 8: Subjective norms about entrepreneurship

My closest family members would agree with my decision to start a business on my own		
	N	%
Strongly Disagree	27	5.8
Disagree	28	6
Somewhat Disagree	17	3.6
Not Sure	41	8.8
Somewhat Agree	29	6.2
Agree	72	15.4
Strongly Agree	254	54.3
Total	468	100
My closest friends would agree with my decision to start a business on my own		
Strongly Disagree	22	4.7
Disagree	32	6.8
Somewhat Disagree	25	5.3
Not Sure	27	5.8
Somewhat Agree	41	8.8
Agree	73	15.6
Strongly Agree	248	53
Total	468	100
In our community, most people consider starting a new business as desirable		
Strongly Disagree	19	4.1
Disagree	31	6.6
Somewhat Disagree	24	5.1

Not Sure	48	10.3
Somewhat Agree	53	11.3
Agree	100	21.4
Strongly Agree	193	41.2
Total	468	100
I care about the opinion of my circle of close people regarding starting a new business		
Strongly Disagree	35	7.5
Disagree	27	5.8
Somewhat Disagree	30	6.4
Not Sure	41	8.8
Somewhat Agree	61	13
Agree	81	17.3
Strongly Agree	193	41.2
Total	468	100

Sources: Researcher's own

Appendix 9: Perceived behavioural control

I feel that I have control over starting my own business		
	N	%
Strongly Disagree	29	6.2
Disagree	27	5.8
Somewhat Disagree	39	8.3
Not Sure	48	10.3
Somewhat Agree	43	9.2
Agree	77	16.5
Strongly Agree	205	43.8
Total	468	100
I possess sufficient personal skills and knowledge to launch and manage my own firm		
Strongly Disagree	23	4.9
Disagree	33	7.1
Somewhat Disagree	37	7.9
Not Sure	53	11.3
Somewhat Agree	42	9
Agree	87	18.6
Strongly Agree	193	41.2
Total	468	100
I am confident in my ability to overcome obstacles and challenges in starting and operating my own business		

Strongly Disagree	19	4.1
Disagree	37	7.9
Somewhat Disagree	32	6.8
Not Sure	50	10.7
Somewhat Agree	50	10.7
Agree	88	18.8
Strongly Agree	192	41
Total	468	100
Despite the economic challenges, I can successfully start and manage my own firm		
Strongly Disagree	20	4.3
Disagree	32	6.8
Somewhat Disagree	38	8.1
Not Sure	48	10.3
Somewhat Agree	41	8.8
Agree	83	17.7
Strongly Agree	206	44
Total	468	100
I do not need anyone to help me start my own firm		
Strongly Disagree	93	19.9
Disagree	51	10.9
Somewhat Disagree	34	7.3
Not Sure	66	14.1
Somewhat Agree	51	10.9
Agree	46	9.8
Strongly Agree	127	27.1

Total	468	100
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Source: Researcher’s own (2024)

Appendix 10: Statistical evidence of reliability and convergent validity

Constructs	I	CR	PV	CA	CR	AVE	FNA
Attitudes	ATE22	0.958	***	0.971	0.972	0.919	4(4)
Towards	ATE23	0.967	***				
Entreprene	ATE24	0.969	***				
urship	ATE25	0.940	***				
Entreprene	EI18	0.939	***	0.971	0.972	0.920	4(4)
urial	EI19	0.955	***				
Intention	EI20	0.972	***				
	EI21	0.971	***				
Entreprene urship education	EL8	0.811	***	0.935	0.937	0.657	9(9)
	EL9	0.845	***				
	EL10	0.810	***				
	EL11	0.829	***				
	EL12	0.759	***				
	EL13	0.816	***				
	EL14	0.827	***				
	EL15	0.835	***				
	EL16	0.759	***				
Perceived	PBC30	0.916	***	0.929	0.961	0.788	5(5)
Behavioural	PBC31	0.951	***				
Control	PBC32	0.953	***				
	PBC33	0.942	***				

	PBC34	0.637	***				
Practical Learning in Programme s	PLP17	1.000	N/A	N/A	N/A	N/A	1(1)
Subjective Norms	SN26	0.935	***	0.930	0.937	0.828	4(4)
	SN27	0.939	***				
	SN28	0.921	***				
	SN29	0.841	***				

*Indicates the significance of the factor at 99% confidence interval.

Source: Researcher's own (2024)

Appendix 11. Central tendency scores of entrepreneurial intentions

Constructs	Items	Median	Std. Deviation	Conclusion
ENTREPRENEURSHIP INTENTION	EI18	7.00	1.820	According to the results, most respondents tend to strongly agree with the statements relating to Entrepreneurship Intention because the overall median score is close to 7.
	EI19	7.00	1.731	
	EI20	7.00	1.757	
	EI21	7.00	1.763	
	OVERALL	6.75	1.694	
ATTITUDES TOWARDS ENTREPRENEURSHIP	ATE22	7.00	1.816	Most respondents tend to strongly agree with the statements regarding Attitudes Towards Entrepreneurship since the overall median score is close to 7.
	ATE23	7.00	1.786	
	ATE24	7.00	1.785	
	ATE25	7.00	1.820	
	OVERALL	6.50	1.727	
SUBJECTIVE NORMS	SN26	7.00	1.892	The results show that most respondents tend to agree with the statements about Subjective Norms score as the average median score is 6.25.
	SN27	7.00	1.868	
	SN28	6.00	1.789	
	SN29	6.00	1.948	
	OVERALL	6.25	1.701	
PERCEIVED BEHAVIOURAL	PBC30	6.00	1.936	Based on the results, most respondents tend to agree
	PBC31	6.00	1.893	

CONTROL	PBC32	6.00	1.856	with the statements relating to Perceived Behavioural Control since the overall score is above 4.
	PBC33	6.00	1.870	
	PBC34	4.00	2.280	
	OVERALL	5.80	1.723	

Source: Researcher's own (2024)

Appendix 12: Questionnaire

INSTRUMENT (Questionnaire)

A. PERSONAL INFORMATION:

1. Sex: Male ☐ Female ☐
2. Age: _____
3. Marital status married ☐ single ☐ divorced ☐ widowed ☐
4. Employment history:
 - Currently employed by someone ☐
 - Previously employed by someone but currently unemployed ☐
 - Currently self-employed ☐
 - Previously self-employed but currently unemployed ☐
 - Previously self-employed but currently employed by someone else ☐
 - Never been employed ☐
5. Who in your family has [ever] established his own firm?
 - No one ☐
 - My parent(s) ☐
 - My sibling/cousin ☐
 - Other family member ☐
6. Program of study (e.g., Electricals, Marketing) _____

B. ENTREPRENEURSHIP EDUCATION

7. As part of your program learned in school, have you learned Entrepreneurship as a course?
YES ☐ NO ☐

	Delivery	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
8.	I gained a lot of practical learning from the Entrepreneurship course					
9.	The Entrepreneurship course involved real-world examples such as case studies					
10.	The Entrepreneurship course engaged me in hands-on activities such as group exercises, projects or business acting (simulations).					
11.	The Entrepreneurship course prepared me well for identifying and solving Practical Business Challenges					
12.	My class had opportunities to interact with entrepreneurs and/or professionals during the Entrepreneurship course					
13.	There were opportunities for me to develop and pitch my own business					

	ideas during the Entrepreneurship course					
14.	The Entrepreneurship course helped me to understand the practical aspects of starting and running a business					
15.	I am satisfied with the overall practical learning experience provided by the entrepreneurship course					
16.	The Entrepreneurship course incorporated guest speakers or real-world examples to enhance learning					

C. PRACTICAL LEARNING COMPONENTS IN PROGRAM OF STUDY

17. To what extent are you exposed to practical experience in your department (program of study)?

- a. No extent ☐
- b. Little extent ☐
- c. Some extent ☐
- d. Large extent ☐
- e. Very large extent ☐

D. ENTREPRENEURSHIP INTENTION (Liñán & Chen, 2009):

Please indicate how much you agree with the following statements indicating by circling the number that indicates how strongly you agree or disagree with each: Number 1 indicates the lowest while 7 indicates highest.

No	Statement (Liñán & Chen, 2009)	Strongly Disagree			Not Sure			Strongly Agree
18	I will set up my own firm after I finish school	1	2	3	4	5	6	7
19	I plan to set up my own firm even if I already have a paid job	1	2	3	4	5	6	7
20	I intend to set up my own firm no matter what it takes	1	2	3	4	5	6	7
21	Starting my own firm is my ultimate ambition	1	2	3	4	5	6	7

- a. **Attitude Toward the Behavior (ATE):** Please indicate how much you agree with the following statements indicating by circling the number that indicates how strongly you agree or disagree with each: Number 1 indicates the lowest while 7 indicates highest.

No	Statement (Youssef et al., 2020)	Strongly Disagree			Not Sure			Strongly Agree
22	Being an entrepreneur would give me some satisfaction	1	2	3	4	5	6	7
23	A career as an entrepreneur is attractive to me	1	2	3	4	5	6	7
24	Among other options, becoming an entrepreneur would be ideal for me	1	2	3	4	5	6	7
25	Being an entrepreneur implies more advantages than disadvantages	1	2	3	4	5	6	7

b. Subjective norms: Please indicate how much you agree with the following statements indicating by circling the number that indicates how strongly you agree or disagree with each: Number 1 indicates the lowest while 7 indicates highest.

No	Statement (Asimakopoulos et al., 2019; Ephrem et al., 2019)	Strongly Disagree			Not Sure			Strongly Agree
26	My closest family members would agree with my decision to start a business on my own	1	2	3	4	5	6	7
27	My closest friends would agree with my decision to start a business on my own	1	2	3	4	5	6	7
28	In our community, most people consider starting a new business as desirable	1	2	3	4	5	6	7
29	I care about the opinion of my circle of close people regarding starting a new business	1	2	3	4	5	6	7

c. Perceived Behavioral Control (Liñán & Chen, 2009)

No	Statement (Liñán & Chen, 2009)	Strongly Disagree			Not Sure			Strongly Agree
30	I feel that I have control over starting my own business	1	2	3	4	5	6	7
31	I possess sufficient personal skills and knowledge to launch and manage my own firm	1	2	3	4	5	6	7
32	I am confident in my ability to overcome obstacles and challenges in starting and operating my own business	1	2	3	4	5	6	7
33	Despite the economic challenges, I can successfully start and manage my own firm	1	2	3	4	5	6	7
34	I do not need anyone to help me start my own firm	1	2	3	4	5	6	7

Appendix 13: Participant Consent Letter



CONSENT

Statement of Agreement to Participate in the Research Study:

- ☐ I hereby confirm that I have been informed by the researcher, (Hafiz Adam,), about the nature, conduct, benefits and risks of this study – Research Ethics Clearance Number: 22175123.
- ☐ I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- ☐ I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- ☐ In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.
- ☐ I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- ☐ I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- ☐ I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

_____	_____	_____	_____	
Full Name of Participant	Date	Time	Signature	/ Right
Thumbprint				

I, Hafiz Adam herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Hafiz Adam 20th Dec, 2022

_____	_____	_____
Full Name of Researcher	Date	Signature

_____	_____	_____
Full Name of Witness (If applicable)	Date	Signature

_____	_____	_____
Full Name of Legal Guardian (If applicable)	Date	Signature

Appendix 14: Gatekeeper's Permission Letter

PG 2a

GATEKEEPER'S PERMISSION LETTER
DURBAN UNIVERSITY OF TECHNOLOGY
FACULTY OF MANAGEMENT STUDIES

Dear Sir/Madam

DPhil Research Project
Researcher: Hafiz Adam

I am writing to seek permission to conduct research with participants from your organization for a study entitled: The Role of Entrepreneurship Education in Developing entrepreneurship Intentions among Students at the Takoradi Technical University in Ghana.

The research is being conducted by Hafiz Adam, a student in the Faculty of Management Studies of the Durban University of Technology (DUT). As part of research ethics, I am required to obtain gatekeeper's permission from sites where I require participants in the study.

The aim of the study is to assess the role of Entrepreneurship education in developing entrepreneurial intentions among students at the Takoradi Technical in Ghana

Your assistance in permitting access to your organization for purposes of this research is most appreciated. Please be assured that all information gained from the research will be treated with the utmost confidentiality. The confidentiality of information and anonymity of personnel and the organisation will be strictly adhered to by the researcher. Furthermore, the result/s or findings from the research will be published in accredited journals. The researcher is available at any stage to answer any queries and/or to discuss any aspect of this research project.

If permission is granted and that you are willing that your organisation be part of the study, please sign the form below that acknowledges that you give permission for your organisation to participate in the research

Gatekeeper's Consent

I [Name] MOSES MACLEAN ARMORY (PhD)

As [Position] REGISTRAR

Of [Organisation name] TAKORADI TECHNICAL UNIVERSITY

Having been fully informed about the nature of the research, give my permission for the study to be conducted.

I reserve the right to withdraw my permission at anytime

Date 20/12/22

Stamp.....
Registrar
Takoradi Technical University
Takoradi

Appendix 15: Letter of Information



Title of the Research Study: The Role of Entrepreneurship Education in Developing Entrepreneurship Intentions among Students at the Takoradi Technical University in Ghana

Principal Investigator/s/researcher: Hafiz Adam

Co-Investigator/s/supervisor/s: Prof. Luther-King Junior Zogli

Brief Introduction and Purpose of the Study:

Hello,

I am Hafiz Adam, a student in the Department of Management Sciences of the Durban University of Technology doing research for my Doctor of Philosophy degree in Business Administration. My research is titled “The Role of Entrepreneurship Education in Developing Entrepreneurship Intentions among Students at the Takoradi Technical University in Ghana”. I am inviting you to participate in the conduct of this research.

Research is a process of systematic inquiry that entails collection of data; documentation of critical information; and analysis and interpretation of that data/information, in accordance with suitable methodologies set by specific professional fields and academic disciplines. This research, in essence, is to establish the relationship that exists between

Entrepreneurship taught as a course in Takoradi Technical of Ghana and students' subsequent intentions to engage in entrepreneurship. It, therefore, posits that students' participation in entrepreneurship courses are inclined (or otherwise) to start their own enterprises. In this regard, the research seeks to find answers to the following questions:

1. How do entrepreneurship course delivery methods influence the entrepreneurship intentions of students?
2. To what extent do entrepreneurship courses shape students' personal attitudes towards entrepreneurship?
3. How have entrepreneurship courses affected students' subjective norms regarding entrepreneurship?
4. What is the relationship between entrepreneurial courses and students perceived behavioural control of entrepreneurship?

Your participation in this research is, therefore, key in deciding its success. You are, kindly, encouraged to participate in providing the responses necessary for a successful data collection and to ask questions that would help shape the scope of the research. Your identity as a participant in this academic research will be treated as confidential as possible.

Appendix 16: Central tendency scores for research constructs

Constructs	Items	Median	Std. Deviation	Conclusion
ENTREPRENEURSHIP EDUCATION	EE8	4.00	0.764	The results indicate that most respondents tend to be unsure of the statements regarding Entrepreneurship Education because the average median score is 4.22.
	EE9	4.00	0.751	
	EE10	4.00	0.770	
	EE11	4.00	0.804	
	EE12	4.00	0.893	
	EE13	4.00	0.876	
	EE14	4.00	0.781	
	EE15	4.00	0.864	
	EE16	4.00	0.934	
	OVERALL	4.22	0.669	
PRACTICAL LEARNING IN PROGRAMMES	PLP	3.00	1.060	Most respondents indicated that they are exposed to practical experience in their department (programme of study) to some extent, as the average median score is 3.
ENTREPRENEURSHIP INTENTIONS	EI18	7.00	1.820	According to the results, most respondents tend to strongly agree with the statements relating to Entrepreneurship Intentions
	EI19	7.00	1.731	
	EI20	7.00	1.757	
	EI21	7.00	1.763	
	OVERALL	6.75	1.694	

				because the overall median score is close to 7.
ATTITUDES TOWARDS ENTREPRENEURSHIP	ATE22	7.00	1.816	Most respondents tend to strongly agree with the statements regarding Attitudes Towards Entrepreneurship since the overall median score is close to 7.
	ATE23	7.00	1.786	
	ATE24	7.00	1.785	
	ATE25	7.00	1.820	
	OVERALL	6.50	1.727	
SUBJECTIVE NORMS	SN26	7.00	1.892	The results show that most respondents tend to agree with the statements about Subjective Norms score as the average median score is 6.25.
	SN27	7.00	1.868	
	SN28	6.00	1.789	
	SN29	6.00	1.948	
	OVERALL	6.25	1.701	
PERCEIVED BEHAVIOURAL CONTROL	PBC30	6.00	1.936	Based on the results, most respondents tend to agree with the statements relating to Perceived Behavioural Control since the overall score is above 4.
	PBC31	6.00	1.893	
	PBC32	6.00	1.856	
	PBC33	6.00	1.870	
	PBC34	4.00	2.280	
	OVERALL	5.80	1.723	

Source: Researcher's own (2024)

Appendix 17: Research Items and Codes

S/N	Code	Research items
Entrepreneurship education		
1	EE8	I gained a lot of practical learning from the course
2	EE9	The course involved real-world examples such as case studies
3	EE10	The course engaged me in hands-on activities such as group exercise and simulations
4	EE11	The course prepared me well for identify and solving practical bus. Challenges
5	EE12	My class had opportunities to interact with entrepreneurs and professionals
6	EE13	There were opportunities for me to develop and pitch my own business ideas during the course
7	EE14	The course helped me to understand the practical aspects of starting and running a business
8	EE15	I am satisfied with the overall practical learning experience provided by the course
9	EE16	The course incorporated guest speakers or real-world examples
Practical learning in programme		

10	PLP17	To what extent is practical learning involved in your current programme of study?
		Entrepreneurship intention
11	EE18	I will set up my own firm after I finish school
12	EE19	I plan to set up my own firm even if I already have a paid job
13	EE20	I intend to set up my own firm no matter what it takes
14	EE21	Starting my own firm is my ultimate ambition
Attitude towards entrepreneurship		
15	ATE22	Being an entrepreneur would give me some satisfaction
16	ATE23	A career as an entrepreneur is attractive to me
17	ATE24	Among other options, becoming an entrepreneur would be ideal for me
18	ATE25	Being an entrepreneur implies more advantages than disadvantages
Subjective norms		
19	SN26	My closest family members would agree with my decision to start my own firm
20	SN27	My closest friends would agree with my decision to start my own business
21	SN28	In our community, most people consider starting a new business as desirable
22	SN29	I care about the opinions of my circle of close people regarding starting my own business

Perceived behavioural control		
23	PBC30	I feel that I have control over stating my own business
24	PBC31	I possess sufficient personal skills and knowledge to launch and manage my own firm
25	PBC32	I am confident in my ability to overcome obstacles and challenges in starting and operating my own business
26	PBC33	Despite the economic challenges, I can successfully start and manage my own firm
27	PBC34	I do not need anyone to help me start my own firm

Source: Researcher's own (2024)

Appendix 18: Turnitin Report

The role of entrepreneurship education in developing entrepreneurial intentions among students at the Takoradi Technical University in Ghana

ORIGINALITY REPORT

16%	10%	15%	3%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	irep.ntu.ac.uk Internet Source	1%
2	Submitted to University of South Africa Student Paper	1%
3	Ahmed, Tariq. "Antecedents of Entrepreneurial Intentions and Behaviour: The Role of Entrepreneurial Education and Contextual Factors", University of Malaya (Malaysia), 2023 Publication	1%
4	hdl.handle.net Internet Source	<1%
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