EFFECT OF ENTREPRENEURSHIP EDUCATION ON INTENTION OF ENGINEERING STUDENTS IN TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING INSTITUTIONS IN KENYA

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DECLARATION AND APPROVAL

Declaration

This thesis is my original work and has not been submitted for qualifications at any other academic institution.

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DEDICATION

I dedicate this thesis to my parents, the late Mr. JAK Ayuo and Perez Ayuo whose value for education has been a source of inspiration to me.

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ABSTRACT

Globally, both scholars and policy-makers concur that entrepreneurship is instrumental for new venture formation, economic growth and technological progress. Theoretically, there is a general inclination that entrepreneurship education automatically yields entrepreneurial intention. However, few empirical studies examining the direct influence of entrepreneurship education on entrepreneurial intention have yielded inconsistent results. Though personality traits and attitudes are critical factors in determining entrepreneurial intention, their effect on the relationship between entrepreneurship education and entrepreneurial intention has received inadequate attention. With the high rate of unemployment in Kenya, self-employment and small enterprise initiatives are presently high on the county's national development agenda with the hope that the entrepreneurial initiatives will provide alternative channels of employment. The purpose of this study was to examine the effect of personality traits and attitude on the relationship between entrepreneurship education and entrepreneurial intention of students in Technical, Vocational Education, and Training institutions in Kenya. Specifically, the study sought to: determine the effect of entrepreneurship education on entrepreneurial intention, determine the influence of personality traits on the relationship between entrepreneurship education and entrepreneurial intention, examine the influence of attitude on the relationship between entrepreneurship education and entrepreneurial intention, and determine the joint effect of entrepreneurship education, personality traits, and attitude on entrepreneurial intention. The study adopted a cross-sectional survey design. Data was collected from a sample of 265 third year students drawn from a population of 855 engineering students. Data was analyzed with the aid of Statistical Package for Social Sciences, (SPSS). Profiles of students and study variables were described by use of means and standard deviation. The hypotheses were tested by simple, hierarchical, and multiple regression analyses. The results showed a positive correlation between entrepreneurship education and entrepreneurial intention. Further, the results revealed that personality traits moderated the relationship between entrepreneurship education and entrepreneurial intention; while attitude partially mediated the relationship. The combined effect of entrepreneurship education, personality traits and attitude was higher on entrepreneurial intention. The study contributed to entrepreneurship education theory and management policy and practice by arguing that the effect of entrepreneurship education on entrepreneurial intention is contingent on interaction of personality traits and attitudes. The understanding of the contingency perspective of the relationship between entrepreneurship education and entrepreneurial intention would inform an effective entrepreneurship education curriculum. Finally, the study recommends a longitudinal study to explore the cause of low variation in entrepreneurial intention explained by entrepreneurship education. Future tracer studies should be conducted on the link between nascent entrepreneurial intention and actual implementation of intentions. This would fill the gap between intention and actual behavior in relation to venture formation.

TABLE OF CONTENTS

DECLARATION AND APPROVAL ..... **ii**

COPYRIGHT ..... **iii**

DEDICATION ..... **iv**

ACKNOWLEDGEMENT ..... **v**

ABSTRACT ..... **vi**

LIST OF TABLES ..... **xi**

LIST OF FIGURES ..... **xii**

ABBREVIATIONS AND ACRONYMS ..... **xiii**

CHAPTER ONE: INTRODUCTION **1**

1.1 Background of the Study 1

1.1.1 Entrepreneurship Education 2

1.1.2 Personality Traits 4

1.1.3 Attitude 5

1.1.4 Entrepreneurial Intention 5

1.1.5 Technical and Vocational Education and Training Institutions in Kenya 6

1.1.6 Engineering Students in TVET Institutions 7

1.2 Statement of the Problem 7

1.3 Purpose of the Study 8

1.4 Objectives of the Study 9

1.5 Research Hypotheses 9

1.6 Significance of the Study 9

1.7 Limitations of the Study 10

1.8 Delimitation of the Study 11

1.9 Assumptions of the Study 11

1.10 Operational Definition of Terms 11

1.11 Summary of the Chapter 12

1.12 Organization of the Thesis 13

CHAPTER TWO: LITERATURE REVIEW **14**

2.1 Introduction 14

2.2 Entrepreneurship Education and Entrepreneurial Intention 14

2.3 Entrepreneurship Education, Personality Traits and Entrepreneurial Intention 16
2.4 Entrepreneurship Education, Attitudes and Entrepreneurial Intention 18
2.5 Entrepreneurship Education, Personality Traits, Attitudes and Entrepreneurial Intention 20
2.6 Summary of Past Empirical Studies relating Entrepreneurship Education with Entrepreneurial Intention and knowledge gaps 20
2.7 Theoretical Framework 24
2.7.1 Learning Approaches in Entrepreneurship Education 24
2.7.2 Personality Traits Theory 26
2.7.3 Theory of Planned Behaviour 27
2.8 Conceptual Framework 28
2.9 Summary of the Chapter 30
CHAPTER THREE: RESEARCH METHODOLOGY 31
3.1 Introduction 31
3.2 Philosophical Orientation 31
3.3 Research Design 32
3.4 Study Location 33
3.5 Population of the Study 33
3.6 Sampling Design 33
3.7 Instrumentation 36
3.8 Operationalization of Study Variables 37
3.9 Pre-Testing of the Draft Questionnaire 39
3.9.1 Test-Retest of the Study Instrument 40
3.9.2 Test of Reliability 40
3.9.3 Test of Validity 41
3.10 Tests for the Assumptions of Regression Analysis 42
3.10.1 Linearity and Homoscedasticity 42
3.10.2 Test for Normality 43
3.10.3 Test for Multicollinearity 44
3.11 Data Collection Procedure 44
3.12 Data Analysis 45

3.13 Ethical Considerations 52
3.14 Summary of the Chapter 52
CHAPTER FOUR: DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSION 53
4.1 Introduction 53
4.2 Response Rate 53
4.3 Descriptive Statistics 53
4.3.1 Profile of Respondents 54
4.3.2 Entrepreneurship Education 55
4.3.3 Personality Traits 57
4.3.4 Attitude 60
4.3.5 Entrepreneurial Intention 61
4.4 Correlation Analysis 63
4.5 Test of Hypotheses 64
4.5.1 Entrepreneurship Education and Entrepreneurial Intention 64
4.5.2 Entrepreneurship Education, Personality Traits and Entrepreneurial Intention ..... .65
4.5.3 Entrepreneurship Education, Attitudes and Entrepreneurial Intention 68
4.5.4 Entrepreneurship Education, Personality Traits, Attitudes and Entrepreneurial Intention 74
4.6 Discussion of Results 75
4.6.1 Entrepreneurship Education and Entrepreneurial Intention 75
4.6.2 Entrepreneurship Education, Personality Traits and Entrepreneurial Intention 76
4.6.3 Entrepreneurship Education, Attitude and Entrepreneurial Intention 77
4.6.4 Entrepreneurship Education, Personality Traits, Attitude and Entrepreneurial Intention 78
4.7 Summary of Results of Tests of Hypotheses 79
4.8 Summary of the Chapter 81
CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS 82
5.1 Introduction 82
5.2 Summary of Findings 82

5.3 Conclusions 83
5.4 Implications of the Research Findings and Recommendations 84
5.4.1 Implications for Entrepreneurship Education Theory 85
5.4.2 Implications for Management Policy and Practice 86
5.5 Recommendations for Further Research 87
REFERENCES……89
APPENDICES……100
Appendix I: Study Questionnaire 100
Appendix II: List of Public Technical and Vocational Education and Training Institutions in Kenya 107
Appendix III: List of Sampled Institutions 110
Appendix IV: Invitation to Take Part in a Survey 112
Appendix V: Research Authorization Letter 113
Appendix VI: Research Permit 114
Appendix VII: Map of Kenya 115

LIST OF TABLES

Table 2.1: Summary of past studies (relating Entrepreneurship Education with Entrepreneurial Intention) and knowledge gaps 24
Table 3.1: Distribution of Population and Sub-sample by Institution 36
Table 3.2: Operationalization f the Study Variables..... 39
Table 3.3: Reliability Statistics 41
Table 3.4: Results of the Test of Multicollinearity 44
Table 3.5: Summary of Objectives, Hypotheses and Analysis Techniques 52
Table 4.1: Distribution of Respondents by Course, Gender and Region..... 54
Table 4.2: Mean and Standard Deviation for Measures of Entrepreneurship Education . 56
Table 4.3: Mean and Standard Deviation for Personality Traits 58
Table 4.4: Mean and Standard Deviation Measures of Attitude..... 60
Table 4.5: Mean and Standard Deviation for Entrepreneurial Intention 61
Table 4.6: Correlation Matrix for Entrepreneurship Education, Personality Traits, Attitude and Entrepreneurial Intention 63
Table 4.7: Simple Regression Results for Effect of Entrepreneurship Education on Entrepreneurial Intention 64
Table 4.8: Hierarchical Regression Results for Moderating Effect of Personality Traits on the Relationship between Entrepreneurship Education and Entrepreneurial Intention 66
Table 4.9: Simple Regression Results for Effect of Entrepreneurship Education on Entrepreneurial Intention 68
Table 4.10: Simple Regression Results for Effect of Entrepreneurship Education on Attitude 69
Table 4.11: Simple Regression Results for Effect of Attitudes on Entrepreneurial Intention 70
Table 4.12: Hierarchical Regression Results for Effect of Entrepreneurship Education on Entrepreneurial Intention, Controlling for the Effect of Attitude 72
Table 4.13: Multiple Regression Results for Joint Effect of Entrepreneurship Education, Personality Traits and Attitude on Entrepreneurial Intention 74
Table 4.14: Summary of the Hypotheses Test Results 80

LIST OF FIGURES

Figure 2.1 Relationships among entrepreneurial education, personality traits, attitudes and entrepreneurial intention. 29
Figure 3.1: Scatter plot of ZRESID against ZPRED 42
Figure 3.2: Normal Probability Plot..... 43
Figure 4.1: Regression Coefficients for Statistical Test of Mediation..... 73

ABBREVIATIONS AND ACRONYMS

EE	Entrepreneurship Education
EI	Entrepreneurial Intention
IT	Institute of Technology
MoEST	Ministry of Education, Science and Technology
NGO	Non- Governmental Organization
NP	National Polytechnic
SPSS	Statistical Package for the Social Sciences
TTI	Technical Training Institute
TVET	Technical, Vocational and Education Training
UK	United Kingdom
USA	United States of America
VIF	Variance Inflation Factor
YP	Youth Polytechnic
KUCCPS	Kenya Universities and Colleges Central Placement Service

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Entrepreneurship has a history that dates back to 1732, when the Irish economist Richard Cantillon coined the term from the French word *entreprendre*, meaning to "undertake". Entrepreneurship was used to refer to a person who purchased goods at known prices to later resell them in the market at unknown prices, bringing stability to the market system (Rusu, Isac, Cureteanu, & Csorba, 2012). The term entrepreneur, however, has evolved with time and to date, it is viewed as a multidimensional process devoid of specific definition (Rusu et al., 2012). In an attempt to gain insight on this elusive term, Hoppe (2016) defines entrepreneurship as a dynamic process, where people or groups of people identify opportunities and do something with them to reshape ideas to practical or aimed activities in social, cultural, or economic contexts. In another contribution, entrepreneurship is simply the process of doing something new and something different for the purpose of creating wealth for the individual and adding value to the society (Neck, Greene, & Brush, 2014). These definitions are just examples of the definition of entrepreneurship. Depending on the audience, the definition of entrepreneurship concept varies. Although there is no accepted universal definition of entrepreneurship, this study adopts the definition proposed by Mwiya (2014) that entrepreneurship refers to a process that involves the recognition, evaluation and exploitation of opportunities to meet market needs through organizing effort that previously had not existed.

Entrepreneurship has been attracting global attention of policy makers, scholars, and students (Ambad & Damit, 2015; Mohamad, Lim, Yosof, & Soon, 2015). This is because it is viewed as a source of employment, economic growth, innovation, and promotion of product and service quality. It is also a means by which people participate in economic and social development thereby enhancing population integration and social mobility (Hoppe, 2016). It is argued that as a dynamic process of vision, change and creation of new ventures, entrepreneurship requires to be taught for the transfer of its skills and knowledge from an expert to someone else (Ambad & Damit, 2015). Consequently, both

scholars and policy makers are becoming aware of the importance of entrepreneurship education.

1.1.1 Entrepreneurship Education

There exists an unresolved lack of consensus on the definition of entrepreneurship education. The lack of consensus on the definition of entrepreneurship education, consequently, has yielded various definitions pivoted on target audiences (Mwaslwiba, 2010). Entrepreneurship education is viewed as learning process whose objective is to influence attitudes, behavior and values or intentions towards entrepreneurship as a career option or as a means to participate in the development of the individual's role in the community (Mwasalwiba, 2010). It is described as a method whereby students practice how to create, find, and act on opportunities of creating value (Neck, Greene, & Brush, 2014). Entrepreneurship education includes all activities aiming to foster entrepreneurial mindsets, attitudes and skills and covering a range of aspects such as idea generation, start-up, growth and innovation (Arasti, Falavarjani, & Imanipour, 2012).

Despite lack of universal definition of entrepreneurship education, entrepreneurship education has been proposed as an avenue for educating students to take any academic discipline and be creative, innovative and entrepreneurial. Through entrepreneurship education flexibility, adaptability and resilience are imparted and applied to ensure success (Welsh, Tullar, & Nemati, 2016). Literature suggests that the past two decades have witnessed significant growth in entrepreneurship education programs in most countries (Neck et al., 2014; Singer, Amoros, & Arreola, 2014). In their view, Neck et al., (2014) attribute this significant growth of entrepreneurship education programs to global belief in the positive impact that entrepreneurship can have on the socio-economic and political infrastructure of a nation.

Public policy makers recognize the importance of entrepreneurship as promoter of economic development and hence support entrepreneurship education programs to increase entrepreneurial activity (Ambad & Damit, 2015). The European Commission, for example, reports that the primary purpose of entrepreneurship education is to promote entrepreneurial attitudes, develop entrepreneurial intention and influence mindsets of potential entrepreneurs (European Commission, 2010) and recommends integrating

entrepreneurship fully into university curricula. Elsewhere, Mwasalwiba (2010) asserts that the primary objective of entrepreneurship education involves development of entrepreneurial culture, spirit, and attitudes which lead to creation and growth of start-ups and hence job opportunities.

The study by Johannisson (1991) provides a classification of levels of learning or learning dimensions that are generally fused into the course content for achieving the objectives of entrepreneurship education. These learning dimensions should include entrepreneurial skills namely: "know-why" which reflects personal values and interest in learning and performing entrepreneurial behaviors; "know-who" reflecting learning at social level by interacting with entrepreneurial people, such as entrepreneurship teachers, business project mentors, and classmates. "Know-what" refers to the "theoretical part" of entrepreneurship, including definitions and basic concepts of entrepreneurship, knowledge of business management and new venture creation. "Know-how" is the practical part of entrepreneurial learning. Johannisson's (1991) learning dimensions have been adopted by researchers (Souitaris, Zerbinati, & Al-Laham, 2007; Fayolle, Gailly & Lessas-Clerk, 2006) in entrepreneurship education. This study will adopt learning dimensions as propounded by Johannison (1991) as items of entrepreneurship education course content.

Through various pedagogical approaches, entrepreneurship education course content can enhance entrepreneurship skills and knowledge as well as an understanding of the benefits of entrepreneurship (von Graevenitz, Harhoff, & Weber, 2010; Marques, Ferreira, Gomes, & Rodriguez, 2012). According to Kolb and Kolb (2005) pedagogical approaches to teaching entrepreneurship include traditional and non-traditional methods. Traditionally, entrepreneurship has been taught in classrooms using didactic approach, well-known as "teacher centered" where the students gain knowledge as the teacher is teaching. Non-traditional methods of learning entrepreneurship include experiential learning. Experiential learning is a process in which a student can create knowledge, skills and values from direct experience (Kolb & Kolb, 2005).

1.1.2 Personality Traits

Personality is the dynamic organization within the individual of those psychophysical systems that determine a person's characteristics, behavior and thought (Allport, 1937). Personality trait is an individual's consistent reaction caused by stimulation of external environment or situational factors (Ajzen, 2005). Some studies argue that personality traits of an individual may serve as a catalyst which influences the risk perception of entrepreneurs in decision making (Nga & Shamuganathan, 2010; Colakoglu & Gozukara 2016). This study adopted the most frequently cited personality traits that are closely associated with entrepreneurial values and behavior namely: need for achievement, internal locus of control, and innovativeness (Karabulut, 2016; Colakoglu & Gozukara, 2016; Long & Dong, 2017).

Need for achievement construct is an internally driven strong desire to compete, to excel against self- imposed standards, and to pursue and attain challenging goals (McClleland, 1965). The author argues that the specific behaviours and activities of individuals with a high need for achievement as opposed to a low need for achievement differ in respect to nature, intensity and outcome. More specifically, McClleland stated that individuals with a high need for achievement are more likely to be entrepreneurial (Colakoglu & Gozukara, 2016). Similarly, internal locus of control which relates to an individual's perceptions of ability to influence events in one's life (Karabulut, 2016) is one of the most frequently examined psychological variables in literature. Individuals with a higher internal locus of control are more entrepreneurial than ones with lower internal locus of control (Karabulut, 2016). Likewise, innovativeness as a personality trait is often viewed as an important element of entrepreneurship. Innovativeness is the process that turns an invention into marketable product (Colakoglu & Gozukara, 2016). It is argued that innovativeness is the process that turns an invention into marketable product hence a vital tool for an entrepreneur (Colakoglu & Gozukara, 2016). Elsewhere, Law & Breznik (2017) posit that innovation in business is related to perceiving and acting upon business activities in new and unique ways hence innovativeness plays a significant role in new venture creation.

1.1.3 Attitude

Attitude is a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a situation (Law & Breznik, 2017; Schwarz, Wdowiak, Almer-Jarz, & Breitenecker, 2009). In particular, there are three fundamental attitudinal antecedents of intention: personal attitude toward outcomes of behavior, perceived social norm, and perceived behavioural control. They have proven to account for a large part of the variance in intentions (Fishbein & Ajzen, 2005). Attitudes are relatively less stable than personality traits and can be changed both across time and situations in virtue of the individual's interaction with the environment (Schwarz et al., 2009). Although new venture creation is an important feature in entrepreneurship education, entrepreneurship has more to do with an individual's perspective or attitudes (Schwarz et al., 2009). This study intends to investigate attitudes toward entrepreneurship and three general attitudinal dispositions namely: attitudes toward change, money, and competitiveness.

1.1.4 Entrepreneurial Intention

Entrepreneurial intention evidences the intention of an individual to decide to be an entrepreneur. People who have entrepreneurial intentions plan to scan the environment, identify opportunities to take advantage of, marshal resources, and put the ideas into action by establishing their own ventures. Entrepreneurial intention is the cognitive state of mind immediately prior to executing a behavior or initiating action (Izedomni & Okafor, 2010). An entrepreneurial intention is concerned with the inclination of an individual to initiate an entrepreneurial venture in the future. In this study entrepreneurial intention is defined as a cognitive representation of actions for exploiting a business opportunity by applying knowledge and skills (Thompson, 2009). Studies on entrepreneurial intention have become common (Fayolle & Linan, 2014; do Paco, Ferreira, Raposo, & Rodrigues, 2015; Bae, Qian, Miao, & Fiet, 2014). It is argued that intentions have proven to be a strong predictor of future entrepreneurial behavior. In this sense, intention acts as a force that propels entrepreneurial intention and behavior and as a catalyst for action (do Paco et al., 2015). The studies that have been conducted on entrepreneurial intention suggest that intention is a reliable predictor of entrepreneurial actions as starting a new venture is typically a planned behavior and therefore applicable

for intention models (Haase, & Lautenschlager, 2010; Schwarz et al., 2009). It is therefore, a key determinant of the action of new venture creation moderated by exogenous variables such as personality traits, attitudes and education.

1.1.5 Technical and Vocational Education and Training Institutions in Kenya

Technical and Vocational Education and Training (TVET) is a comprehensive term referring to educational process. It involves general education, the study of technologies and related sciences and the acquisition of practice, skills and knowledge relating to an occupation in various sectors of economic social life. Specifically, TVET encompasses both technical as well as vocational courses including an array of subjects such as business education, agriculture, information technology, media and communication and tourism, in addition to technical subjects (Nyerere, 2009).

One of the features of TVET is its orientation towards the world of work and emphasis of the curriculum on acquisition of employable skills. TVET delivery systems are therefore well placed to train the skilled and entrepreneurial workforce that Kenya needs to create wealth and emerge out of poverty. Further, entrepreneurship education has been integrated into TVET curriculum to provide trainees with business techniques (Simiyu, 2010). Consequently, TVET is viewed as a tool for achieving Kenya's Vision 2030, according to Ministry of Higher Education, Science and Technology (MoHEST, 2014; Ministry of Higher Education, 2012) thereby placing it at the center stage as an avenue for economic development.

In Kenya, TVET programs are offered in Youth Polytechnics, Technical Institutes, Institutes of Technology and National Polytechnics. There are also other public as well as private institutions that offer TVET spread across government ministries. The current study focused on public TVET institutions directly managed by Ministry of Education, specifically, Technical Training Institutes and Institutes of Technology. The institutions are deemed homogenous in terms of approach to common TVET curriculum implementation, human capital capacity, training facilities, entry behavior of students and national status of the institutions.

1.1.6 Engineering Students in TVET Institutions

The study focused on students taking diploma in engineering courses in TVET institutions. The engineering programs offered in these institutions include: electrical, mechanical, automotive, building technology, survey, agricultural and civil engineering among others. The students comprise both male and female youths of between 19 and 25 age bracket. The students are taught entrepreneurship education as a compulsory subject from the first to the third year of study.

1.2 Statement of the Problem

In the recent past, there has been an upsurge of entrepreneurship education initiatives the world over (Mwasalwiba, 2010). Consequently, there has been renewed global academic interest in entrepreneurship education by policy makers and scholars (Rodriguez, Raposo, Ferreira, & do Paco, 2010). This is not surprising since the objective of entrepreneurship education is to generate positive attitude towards entrepreneurial activities and make students acquire thinking skills which can enable them to pursue self-employment opportunities (Bae et al., 2014).

With the high rate of unemployment in Kenya, self-employment and small enterprise initiatives are presently high on the county's national development agenda with the hope that the entrepreneurial initiatives will provide alternative channels of employment (Republic of Kenya, 2016). It is estimated that unemployment rate in Kenya is at 40% with the youth aged between 15-30 constituting 67% of unemployed in 2013 (Trading Economics, 2016). Whereas TVET institutions in Kenya are reported to churn thousands of graduates annually, the graduation ceremonies are short lived as the efforts are overwhelmed by jobless graduates who have become a burden to the society (Diener, Hansen, Omolo, & Beti, 2014). In an effort to equip students with entrepreneurial skills and improve their employability, policy makers have introduced entrepreneurship education component as a compulsory subject of study in TVET institutions and examinable by Kenya National Examinations Council (KNEC).

Although scholars report a theoretical concurrence on the effect of entrepreneurship education on entrepreneurial intention, empirical evidence on the contingency effect of entrepreneurship education on intention are scanty. The few empirical studies that have

been conducted to examine the relationship between the two variables have mainly considered the direct influence of entrepreneurship education on intention (Erturna & Gurel, 2011). Further, studies focusing on the direct effect of entrepreneurship education on entrepreneurial intention have yielded inconsistent results. Whereas some studies (Bae et al., 2014; Otuya, Kibas, & Gichira, 2012; Ngugi, Gakure, & Waithaka, 2012) reported a significant and positive effect of entrepreneurship education on intention, other scholars (Von Graevenitz et al., 2010; Oosterbeek, van Praag, & Ijsselstein, 2010; Olomi & Sinyamule, 2009) have reported a negative effect. Furthermore, a study by Souitaris et al. (2007) found insignificant and mixed results on influence of entrepreneurship education on intention among university students.

The inconsistent findings regarding the direct effect of entrepreneurship education on entrepreneurial intention is an insinuation that there could be other factors either moderating or mediating the relationship. When studying relationships between variables, especially where inconsistencies abound concerning direct relationships, it is recommended to consider a contingency approach (Lee, Li, & Liu, 2010). Theoretical literature (Ertuna & Gurel, 2011; Gurel, Altinay, & Daniele, 2010) identify personality traits and attitudes as potential situational influencers of the effect of entrepreneurship education on intention. However, past studies have not considered this contingency perspective to examine the influence of personality traits and attitudes on the relationship between entrepreneurship education and intention.

To harmonize these apparently conflicting findings, this study sought to adopt a contingency perspective to develop an integrative model interconnecting variables by answering the question: What is the influence of personality traits and attitudes on the relationship between entrepreneurship education and entrepreneurial intention of engineering students in TVET institutions in Kenya?

1.3 Purpose of the Study

The purpose of the study was to determine the influence of personality traits and attitudes on the relationship between entrepreneurship education and entrepreneurial intention of engineering students in TVET institutions in Kenya.

1.4 Objectives of the Study

The specific objectives of the study were to:

i) Determine the effect of entrepreneurship education on entrepreneurial intention.

ii) Determine the influence of personality traits on the relationship between entrepreneurship education and entrepreneurial intention.

iii) Examine the influence of attitude on the relationship between entrepreneurship education and entrepreneurial intention.

iv) Determine the joint effect of entrepreneurship education, personality traits and attitudes on entrepreneurial intention.

1.5 Research Hypotheses

This study sought to test the following hypotheses:

H01: There is no statistically significant effect of entrepreneurship education on entrepreneurial intention.

H02: The effect of entrepreneurship education on entrepreneurial intention is not moderated by personality traits.

H03: The effect of entrepreneurship education on entrepreneurial intention is not mediated by attitude.

H04: Entrepreneurship education, personality traits and attitudes jointly do not have a statistically significant effect on entrepreneurial intention.

1.6 Significance of the Study

This study has made contributions to both theory and practice. First, the study conceptualized and empirically investigated the effect of personality traits and attitude on the relationship between entrepreneurship education and entrepreneurial intention. This relationship has often been assumed and entrepreneurial intention is considered an automatic consequence of entrepreneurship education. This study adds to the existing literature in entrepreneurial intention by arguing that mere entrepreneurship education

does not automatically guarantee entrepreneurial intention. A series of hypotheses to support this argument were developed drawing from entrepreneurship education and entrepreneurial intention literatures and from learning theories, personality traits theory, and theory of planned behavior.

Second, the effect of entrepreneurship education on entrepreneurial intention in previous studies has generated inconsistent results. This study used a contingency perspective to empirically examine the relationship between entrepreneurship education and entrepreneurial intention. This has brought to light the moderating effect of personality traits and mediating effect of attitude on the relationship between entrepreneurship education and entrepreneurial intention. This indirect relationship had in previous studies received little attention. The contingency perspective has enhanced the policy makers' and practitioners' understanding of influencers of entrepreneurship intention, which has further shed light on causes of varying findings by past studies on the effect of entrepreneurship education and entrepreneurial intention.

Finally, the findings and recommendations will be useful to policy makers in enhancing entrepreneurship education by developing appropriate curriculum that is not only content focused but is also pedagogically sound hence likely to yield positive results. Thus, the practical significance of this study will reflect on its implication for entrepreneurship education practice.

1.7 Limitations of the Study

All research has limitations and this study was of no exception. First, due to budget constraints, the study was limited to only 265 third year students taking engineering courses at diploma level. The findings are therefore specific to only students taking engineering courses and cannot be generalized to students in other disciplines or levels of education. Respondents from other academic disciplines or levels of education such as undergraduate and master university students might have different perceptions about entrepreneurial intention. Second, this study was cross-sectional and, therefore, the findings may be time specific and lack generalizability over time. The third limitation was in relation to research context. The study used empirical data from a single

developing country and, thus, the findings may be limited to Kenya and not generalizable to developed countries as a result of cultural settings.

1.8 Delimitation of the Study

Due to time and financial limitations, the study was cross sectional and was conducted from 15th to 30th July 2017. The available research timeline did not allow the researcher to measure entrepreneurial intention at two points in time, one at the beginning and the other at the end of training. The population of the study was students taking diploma in engineering courses, drawn from 27 public TVET institutions in Kenya. Though entrepreneurship education is taught in all institutions of higher learning in Kenya, the study population did not include students in other disciplines such as business studies and or from non TVET institutions. The independent variable was restricted to entrepreneurship education. The moderating variable was personality traits while the mediating variable was attitudes. The dependent variable was entrepreneurial intention as a measure of influence of entrepreneurship education and as a predictor for future behavior.

1.9 Assumptions of the Study

The study was based on specific assumptions. First, the study focused on intentionality of students. The study assumed that the intentions had been developed in the students at the time of study and that these intentions in future would turn into actual behavior. Second, the study also assumed that respondents would voluntarily participate in the study and give accurate and reliable responses.

1.10 Operational Definition of Terms

Attitude: Attitude is a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a situation. The study restricted itself to attitude toward: competitiveness; change; money and entrepreneurship.

Course content: This describes the variations of topics which are incorporated into an entrepreneurship education curriculum or program.

Engineering students: Refers to students taking courses at diploma level in Electrical, Automotive, Mechanical, Building Technology, Agricultural, and Civil Engineering programs.

Entrepreneurial intention: A cognitive representation of actions for exploiting a business opportunity by applying knowledge and skills. The study conceptualized entrepreneurial intention in terms of desirability and self-prediction in relation to starting a business.

Entrepreneurship education: Used interchangeably with entrepreneurship education program, refers to a kind of learning process that is meant to influence attitudes, behavior and values or intentions towards entrepreneurship as a career option or as a means to participate in the development of their role in the community.

Entrepreneurship: A process that involves the recognition, evaluation and exploitation of opportunities to meet market needs through organizing efforts that previously had not existed.

Pedagogical approach: Any conscious activity by one person designed to enhance learning in another.

Personality trait: Personality is an individual's consistent reaction caused by stimulation of external environment or situational factors. In this study entrepreneurial traits refer to internal locus of control, need for achievement and innovativeness.

Special School: A special school is one which caters for students who have special educational needs due to severe learning difficulties, physical disabilities or behavioural problems.

Technical and Vocational Education and Training: The educational program that encompasses the study of technologies and related sciences and the acquisition of practice, skills and knowledge relating to an occupation in various sectors of economic and social life.

1.11 Summary of the Chapter

This chapter discussed the background of the study, described the study variables namely: entrepreneurship education, personality traits, attitudes and entrepreneurial intention. It also presented an overview of the TVET sector. The chapter then presented the statement of the problem, purpose, objectives, scope, assumptions, and significance of

the study, hypotheses and operational definition of terms and organization of the thesis. The next chapter presents literature review, theoretical framework and conceptual framework of the study.

1.12 Organization of the Thesis

This thesis is divided into five chapters. The first chapter is the introduction and discusses the background, purpose, objectives and hypotheses of the study. The chapter also discusses significance, scope, delimitations and assumptions of the study. The chapter concludes with operational definition of terms.

The second chapter focuses on review of related literature. The chapter discusses the linkages between concepts and constructs related to entrepreneurship education, personality traits, attitudes and entrepreneurial intention. The theoretical framework and conceptual framework are also presented.

The third chapter explains the methodology adopted in this study. The chapter describes the philosophical orientation, research design, study location, population of the study, sampling design and instrumentation. The chapter also discusses operationalization of study variables, reliability and validity tests, data collection procedures and data analysis techniques. The tests for regression assumptions and statistical techniques used to summarize data are also presented.

The fourth chapter presents data analysis, findings and discussion of results. First, the results of descriptive and statistics of the profiles of respondents and study variables are discussed. The chapter concludes by presenting the results of tests of hypotheses and discussion of results of the study.

The fifth and final chapter presents a summary of major findings and conclusions of the study. The implications of the study for management theory and management policy and practice, and suggestions for further research are also presented.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter examines literature related to the study. It includes theoretical and empirical literature, theoretical framework of the study and relationships between study variables. The chapter concludes with a conceptual framework.

2.2 Entrepreneurship Education and Entrepreneurial Intention

Entrepreneurship education is regarded as a process where learners practice creating, finding, and acting on opportunities that have value (Neck, Greene, & Brush, 2014). In an academic set up, entrepreneurship education entails activities such as co-curricular activities, curriculum and research efforts (Arasti, Falavarjani, & Imanipour, 2012). Entrepreneurship education has emerged as a means of inculcating confidence, identity development and intentions. In that sense, it acts as a means to educate students on the skills for being creative and innovative (Welsh et al., 2016; Rae & Woodier-Harris, 2013).

It is argued that some issues inherent in entrepreneurship education content such as idea generation process, market analysis, and business planning to mention a few, can be enhanced by education (Bae et al., 2014; Martin et al., 2013). Another stream of thought on entrepreneurship education suggest that education contributes to intention by fostering the right mindset, by raising awareness of career opportunities as an entrepreneur or as a self-employed person, and by providing relevant business skills. According to do Paco et al. (2015) entrepreneurship education not only improves knowledge, skills and information needed to pursue an opportunity but also equips individuals with analytical ability and knowledge of entrepreneurial process. Similarly, Neck et al. (2014) contends that entrepreneurship education is a human capital investment to prepare a student to start a new venture through integration of experience, skills and knowledge important to develop and expand a business. Other scholars posit that entrepreneurship education aims at equipping people with skills and enhances their abilities to recognize, evaluate, marshal resources and to initiate and run the business (do Paco et al., 2015; Neck et al., 2014).

Empirical studies that have investigated the influence of entrepreneurship education on entrepreneurial intention of participants are less unanimous on the results. While some scholars report positive effects (Bae et al., 2014; Otuya et al., 2012; Ngugi et al., 2012) others find mixed (von Graevinitz et al., 2010) and negative (do Paço et al., 2015; Marques et al., 2012; Oosterbeek et al., 2010; Olomi & Sinyamule, 2010; Souitaris et al., 2007).

Bae et al. (2014) conducted a meta-analysis that focused on the relationship between entrepreneurship education and entrepreneurial intention among the youth in Belgium. The findings suggest a significant but small correlation between entrepreneurship education and entrepreneurial intention. However, Bae et al. (2014) report that when they controlled for pre-education intention of respondents, post-education intention was not significant. In another study, Otuya et al. (2012) conducted a survey on the influence of entrepreneurship education on entrepreneurial intention using a sample of university students in Kenya. Based on the theory of planned behaviour, the findings show that entrepreneurship education positively influences entrepreneurial intentions. Elsewhere, Ngugi et al. (2012) used Shapero's Model to determine the relationship between entrepreneurship education and entrepreneurial intention among university students in selected universities in Kenya. The findings further confirm that entrepreneurship education may help to develop entrepreneurial intention and the necessary abilities to be an entrepreneur among students.

In contrast, a number of studies, however, have found that entrepreneurship education has either no discernible influence or a negative influence on entrepreneurial intention (do Paço et al., 2015; Marques et al., 2012; Oosterbeek et al., 2010; Olomi & Sinyamule, 2010; Souitaris et al., 2007). A study by do Paco et al. (2013) compared the psychological attributes and behaviours associated with entrepreneurship as well as entrepreneurial intention among students attending a sports school in Portugal. The results report that despite their not receiving any kind of entrepreneurship education, the students at the neighbouring sports school tended to have higher entrepreneurial intention which suggests that there are other factors influencing entrepreneurial intention other than entrepreneurship education.

In a similar vein, Marques et al. (2012) assessed the impact of entrepreneurship education, psychological and demographic factors in prediction of entrepreneurial intention among secondary school students in Portugal and reported that entrepreneurship education does not have a significant influence on entrepreneurial intention. Elsewhere, Oosterbeek et al. (2010) analyzed the impact of entrepreneurship education program on college students' entrepreneurship skills and motivation. The scholars (Oosterbeek et al., 2010) found that the effect of entrepreneurship education on students' self-assessed skills was insignificant and the effect on intentions to become an entrepreneur was even negative.

Further, Olomi and Sinyamule (2009) investigated the effect of an entrepreneurship program offered in Vocational and Training Centers in Tanzania using a sample of professionals and reported that entrepreneurship education process program had no significant effect on start-up intentions. Similarly, Souitaris et al. (2007) examined the influence of entrepreneurship education on entrepreneurial attitudes and intent of university students in Germany. The study concluded that exposure to entrepreneurship education process increases some attitudes and overall intentions of students. More so, von Graevinitz et al. (2010) studied the effect of entrepreneurship education on intention of learners in Munich School of Management in Germany. The study reported mixed results. According to the findings, students' intentions decline with education but the program had a significant positive effect on self-assessed entrepreneurial skills of the students.

2.3 Entrepreneurship Education, Personality Traits and Entrepreneurial Intention

Personality traits are an individual's consistent reaction caused by stimulation of external environment or situational factors. Scholars argue that individual personality of entrepreneurs provides the impetus to high will power that drives their passions, innovativeness and interactions (McClleland, 1965). In a separate argument, McClleland (1965) posits that some individuals have certain psychological characteristics that determine whether or not one finds the tasks or roles of entrepreneurship attractive and viable. This argument is supported by the proposition that given entrepreneurship education, one is more likely to pursue an entrepreneurial opportunity (Gurel, Altinay, and Danielle, 2010). Furthermore, Mwiya (2014) suggests that personality traits are

partly developed by innate nurturing, socialization and education. The widely documented personality traits in previous studies include internal locus of control, need to achieve and innovativeness ((Karabulut, 2016; Colakoglu & Gozukara, 2016; Long & Dong, 2017). Nevertheless, the nexus among entrepreneurship education, personality traits, and entrepreneurial intention have elicited empirical responses among scholars.

In separate but related studies, (Nga & Shamuganathan, 2010; Zhao, Seibert & Lumpkin, 2010; Colakoglu & Gozukara, 2016) have undertaken studies linking personality traits and entrepreneurial intention. Specifically, Zhao et al., (2010) analyzed the relationship between personality traits and entrepreneurial intention using the big five personality trait model. The big five factors include: extraversion; conscientiousness; openness to experience; neuroticism and agreeableness. The findings confirm a positive and significant relationship between personality traits and entrepreneurial intention. In another study, Nga and Shamuganathan (2010) analyzed the effect of the big five personality traits on social entrepreneurial intentions among university students in Germany. The findings reveal that the big five personality traits positively impact on intentions. Similar studies on the influence of need for achievement and entrepreneurial intention have been separately undertaken (Ryan, Syed, & Zeffane, 2011; Volery, Muller, Oser, Naepflin, & Rey 2013). Generally the findings confirm that these traits positively influence entrepreneurial intention. Innovativeness has also been reported to be positively and significantly associated with entrepreneurial intention (Karabulut, 2016; Altinay, Madanoglu, Daniele, & Lashley, 2012).

In a study focusing on the influence of psychological traits on entrepreneurial intention among university students in hospitality and tourism studies in UK, Altinay et al., (2012) report that innovativeness positively influences entrepreneurial intention while internal locus of control has no significant influence on entrepreneurial intention. Similarly, Karabulut (2016) conducted a study on the relationship between personality traits among graduate students in Turkey. The results confirm that innovativeness is significantly and positively associated with entrepreneurial intentions and that innovativeness directly influences possibility of developing entrepreneurial intention. In separate studies, scholars (Hsiao, Lee & Chen, 2016; Long & Dong, 2017) confirm that other than

innovativeness, internal locus of control also positively and significantly influences entrepreneurial intention.

In summary, studies linking personality traits and entrepreneurial intention suggest that entrepreneurship education may inculcate new or activate latent personality traits in an individual. Consequently, personality traits of entrepreneurs provide the impetus to high will-power that makes them develop entrepreneurial intentions. This suggests that the relationship between entrepreneurship education and entrepreneurial intention may be contingent upon personality traits. Thus, in essence, personality traits are likely to modify the effect of entrepreneurship education on entrepreneurial intention. Studies that have been conducted on the relationship between entrepreneurship education and entrepreneurial intention have been focused on the direct effect of the independent variable on the dependent variable. Hence, studies which have considered interaction effect of personality traits or the influence of personality traits as moderator variable on the relationship between entrepreneurship education and intention are scanty. Based on personality traits theory, this study considered the interaction effect of personality traits on the relationship between entrepreneurship education and intention.

2.4 Entrepreneurship Education, Attitudes and Entrepreneurial Intention

Attitude has been defined by different authors in different ways. For example, Gordon Allport, as reported in Bohner and Dickel (2011) defined attitude as a mental and neutral state of readiness organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related. From another perspective, Fishbein and Ajzen (1985) defined attitude as a learned predisposition to respond in a consistently favourable manner with respect to a given object. This definition confirms that attitude can be learned and changed through education. Studies further assert that in general, the more favourable the attitude towards the behavior, the stronger should be the individual's intention to perform it (Fishbein & Ajzen, 1975; Rauch & Hulsink, 2015). Based on the definitions, it suffices to observe that attitude is a vital factor in developing entrepreneurial intention.

The theory of planned behavior argues that attitudes are precursors to intentions which are an antecedent to behaviours (Fishbein & Ajzen, 1975). More specifically, attitudes

have a behavioural component that consists of behavioural intentions and predispositions to act in a particular way toward some subject (Schlaegel & Koenig, 2014). Prior studies have shown that these intentions play a crucial role in explaining the entrepreneurial process and students' attitude tend to stimulate their intentions and willingness to start a new venture in the future (Law & Breznik, 2017; Dinc & Budic, 2016). Extant literature opined that attitude of an individual to participate in entrepreneurship is motivated by push and pull factors. The push factors represent negativities such as unemployment opportunities, economic upheavals and societal neglect whereas the pull factors refer to positive aspects such as social mobility and lucrative business opportunities (Neck et al., 2014).

Empirical evidence (Rauch & Hulsink, 2015) confirms that exposure to entrepreneurship education influences students' attitude towards behavior. More recently a number of scholars (Gibcus, de Kok, Snijders, Smit, & Linden, 2012) investigated the effect of entrepreneurship education on attitude and entrepreneurial intention of students in selected European countries and in Portugal. The findings suggest that entrepreneurship education positively affects attitudes and consequently influencing entrepreneurial intention. Further, Souitaris et al. (2007) studied the effect of entrepreneurship education on attitude of a group of students in a French engineering school. The findings further confirm that students in entrepreneurship education program increased their entrepreneurial attitude and intention. The findings get support from evidence presented by other scholars (Schlaegel & Koenig, 2014) who are emphatic that entrepreneurship education positively influences attitude toward entrepreneurship.

The importance of attitude both in general and toward entrepreneurship, in explaining entrepreneurial intention has been recognized and empirically confirmed (Colakoglu & Gozukara, 2016). In another study, Marques et al., (2012) investigated the relationship between entrepreneurial intention and personal attitude of secondary school students. The findings affirm that personal attitude is positively correlated with entrepreneurial intention.

In summary, literature suggests that entrepreneurship education is presumed to influence attitudes hence entrepreneurial intention. However, existing studies rarely focus on

intervening or indirect effect of attitudes on the relationship between entrepreneurship education and entrepreneurial intention. It is therefore necessary to confirm whether attitudes are likely to mediate the relationship between entrepreneurship education and entrepreneurial intention. The study intends to fill this gap.

2.5 Entrepreneurship Education, Personality Traits, Attitudes and Entrepreneurial Intention

For entrepreneurial intention to be realized there is need to have a match between entrepreneurship education, personality traits and positive attitude critical to enhance entrepreneurial intention. The theory of planned behavior postulates that in order to increase a person's intention to perform behavior, attitude toward that behavior has to be favourable. Though intention is an antecedent of behavior, in reality not all intentions may be actualized due to influences by factors such as personality traits and attitudes (Nga & Shamuganathan, 2010). It is argued that while personality traits are innate and may not be changed, attitudes can, however, be changed and made favourable by entrepreneurship education (Fayolle & Gailly, 2015).

Thus, entrepreneurship education may activate latent personality traits and consequently inculcate positive attitudes that enhance entrepreneurial intention in an individual. Past studies (Fayolle & Gailly, 2015; Colakoglu & Gozukara, 2016; Karabulut, 2016) examining entrepreneurship education, personality traits, attitudes and entrepreneurial intention have largely focused on individual relationships in isolation rather than developing an integrated model that interconnects the variables to examine the interaction effects. This study seeks to adopt an integrative perspective of the variables to portray a more complete picture of the relationships among the variables. This will contribute to new knowledge on effect of entrepreneurship education on entrepreneurial intention, especially on moderating and mediating roles of personality traits and attitudes respectively which are rarely fused in studies as integrated model.

2.6 Summary of Past Empirical Studies relating Entrepreneurship Education with Entrepreneurial Intention and knowledge gaps

Literature suggests that entrepreneurship education is critical in determining entrepreneurial attitudes and intention. Few studies have been conducted to examine the

relationship between entrepreneurship education in terms of course content and pedagogical approaches and entrepreneurial intention; and the results of the few studies that have been conducted are vividly inconsistent. Some studies have reported direct positive effect while others found no direct and significant effect. Further, only a few empirical studies have considered contingency perspective that emphasizes the importance of moderating or intervening variables when studying the relationship between entrepreneurship education and entrepreneurial intention.

Review of literature also reveals that the studies that have examined the relationship between variables, have only examined individual relationships in isolation rather than developing an integrated model that interconnects the variables. Further, none of the studies examining the relationship between entrepreneurship education and entrepreneurial intention has been conducted in TVET institutions in Kenya. To bridge these knowledge gaps, this study seeks to adopt contingency perspective to develop an integrated model to examine the interaction effects of entrepreneurship education, personality traits and attitudes in explaining entrepreneurial intention of students in TVET institutions in Kenya. Table 2.1 helps to delineate a summary of studies relating entrepreneurship education and entrepreneurial intention and knowledge gaps.

Study	Research Focus and Methodology	Key Findings	Knowledge Gaps	Focus of Current Study
Bae et al. (2014)	The relationship between entrepreneurship education (EE) and entrepreneurial intention (EI) The authors used meta-analyses which consisted of 73 studies. The study was quantitative in approach.	The relationship between EE and EI was significant and that there was a small correlation between EE and EI.	The study did not consider moderating or mediating effects which may be contingent upon the relationship between EE and EI.	The study sought to generate empirical evidence to explain the moderating and mediating effects of personality traits and attitude on the relationship between EE and EI.
4Volery et al. (2013)	An evaluation of the impact of entrepreneurship education (EE) and personality factors on human capital and entrepreneurial intention (EI) Used quantitative longitudinal from 2008-	Need for achievement positively significantly impact EI There was an overall negative impact of EE on EI.	The level of analysis was secondary school students in Switzerland, a developed country.	Focus was on developing country, Kenya and the unit of analysis was students who are at the final stage of completing diploma level of technical

	2009 using a sample of 494 secondary school students in Switzerland.			education.
Otuya et al. (2012)	Effect of entrepreneurship education programs on entrepreneurial intention Compared a sample of university students taking entrepreneurship education (EE) as a major with those taking EE education as a general course. The study applied the Theory of Planned Behavior to explain EI.	Entrepreneurship education influences entrepreneurial intention (EI).	The study did not consider effect of personality traits or entrepreneurial attitude on the relationship between entrepreneurship education and entrepreneurial intention.	Focus was on engineering students in their third and final year of study in 27 technical training institutions in Kenya. Moderating and mediating effects of personality traits and attitude respectively, on the relationship between EE and EI were considered.
Ngugi et al. (2012)	Application of Shapero's model in explaining entrepreneurial intentions Used a sample of Kenyan university students	Entrepreneurship education has positive impact on entrepreneurial intentions	Considered direct relationship between entrepreneurship (EE) education and entrepreneurial intention (EI)	Moderating effect of personality traits and mediating effect of entrepreneurial attitudes on the relationship between EE and EI was the focus.
Marques et al. (2012)	Impact of entrepreneurship education (EE), psychological and demographic factors in prediction of entrepreneurial intention. Used quantitative cross-sectional approach. The sample was drawn from 202 secondary school students in Portugal.	Attitude, subjective norms, perceived behavioural control positively influence intention. Need for recognition (positively) and tolerance for ambiguity (negatively) influence intention. Education does not have a significant influence on intention.	The focus was on direct influence of EE on entrepreneurial intention (EI). The authors did not consider contingent factors which may moderate or mediate the relationship between EE and EI. The study utilized a sample of secondary school students.	Focus was on students who possessed technical skills that they had acquired from training. The study considered personality traits and attitude as influencers of intention.
Gibcus et al. (2012)	Effects and impact of entrepreneurship education (EE) on entrepreneurial	EE has positive effect on entrepreneurial	The study was conducted in developed western	Focus was on engineering students taking diploma in

	attitudes, skills, intention, actual start-up and employability for higher education alumni The study was quantitative cross-sectional. The sample was drawn from 9 universities in 9 European countries.	attitudes.	countries. It focused on university students.	engineering courses at their final year of study in a developing country. The focus was middle level training institutions.
Oosterbeek et al. (2011)	The impact of entrepreneurship education (EE) on entrepreneurship skills and motivation Used quantitative longitudinal study of two groups (control and treatment) in a college in Netherlands.	Effect on students' self-assessed entrepreneurial skills is significant and the effect on intention to become an entrepreneur is negative.	Cultural setting is Netherlands based on Dutch education program. Did not consider moderating or mediating effects of other factors which may influence entrepreneurial intention .	Focus was on moderating and mediating variables which influence the relationship between entrepreneurship education and entrepreneurial intention.
Olomi and Sinyamule (2009)	Effect of an entrepreneurship education program offered to professionals in Vocational and Training Centers in Tanzania.	Participation in the entrepreneurship education course program has no significant effect on start-up intentions of the participants.	Respondents were professionals who had already made decisions on career choices. The study did not consider other factors which may influence the relationship between entrepreneurship education and entrepreneurial intention.	Focus was on students in their final year of study who were about to make decision on career paths. The study considered personality traits and attitude as possible influencers of entrepreneurial intention.
Souitaris et al. (2007)	Influence of entrepreneurship knowledge, inspiration, support services on entrepreneurial intentions Used quantitative longitudinal approach and a pre-test-post-test quasi experimental design.	Entrepreneurial intention, subjective norms increased attitudes toward behaviour and perceived behavioural control did not change. Not learning but	The study was conducted in developed countries (UK and France). The cultural setting is in developed country. The study did not consider other factors which	The study adopted a cross-sectional approach to determine the influence of personality traits and attitude on the relationship between entrepreneurship

		inspiration is the program's biggest benefit	may influence the relationship between entrepreneurship education and entrepreneurial intention.	education and entrepreneurial intention.

Table 2.1: Summary of past studies (relating Entrepreneurship Education with Entrepreneurial Intention) and knowledge gaps

2.7 Theoretical Framework

This section discusses the theories that underpin the study. It discusses learning approaches to entrepreneurship education, personality trait theory and theory of planned behavior.

2.7.1 Learning Approaches in Entrepreneurship Education

Learning approaches are conceptual frameworks describing how information is absorbed, processed and retained during learning (Piaget, 1936). Scholars argue that a universal approach to teach entrepreneurship does not yet exist hence techniques and modalities chosen depend on the objectives, contents and constraints imposed by the institutional context. As a result a wide range of approaches, pedagogical methods and modalities can be used to teach entrepreneurship (Kokouris, 2017). Despite lack of consensus on the method to teach entrepreneurship, two learning approaches to entrepreneurship education are evident in entrepreneurship literature, namely the traditional approach and the constructivist approach.

The traditional approach is behavioural in nature and deals with the acquisition of information. Being teacher-centered it assumes that the role of the teacher is to transmit information to passive students and encourages memorization of entrepreneurial facts. Traditional methods are based on the view that information is owned by the instructor ((Krueger, 2009). However, Lobler (2006) argues that the knowledge and skills developed through traditional methods often fail to transfer to the actual environment where they should be used.

The basis of constructivist approach can be traced to Dewey (1938) and Piaget (1932). The approach emphasizes the importance of active involvement of learners in constructing knowledge for themselves. Students are taught to use background knowledge and concepts to assist them in their acquisition of novel information (Dewey, 2013; 1938; Piaget, 1932). Scholars in entrepreneurship education argue that the use of the constructivist approach in entrepreneurship education can have significant, positive impact on students' learning (Krueger, 2009; Kurczewska, 2016). According to Krueger (2009), constructivist approach is learner-centered and puts more emphasis on encouraging learners to take ownership of their learning therefore it is best suited for entrepreneurship education process. In the constructivist learning approach learners create their own new understanding based on the interaction between what they already know and believe and ideas and knowledge with which they come into contact (Kurczewska, 2016). From the constructivist learning approach several different approaches in educational practice emerged namely: problem based learning, entrepreneurial directed learning, experiential learning and active learning.

Proponents of problem based learning approach contend that the approach enables students to develop solutions to problems rather than learning solely from lectures (Kokouris, 2017; Karmokar, 2014). The other approach to learning is termed entrepreneurial-directed. The entrepreneurial-directed approach emphasizes experiential learning in which new activity produces a new experience and new thinking through reflection (Neck et al., 2014). This approach however, requires teachers to act in an entrepreneurial way in discovering and innovatively exploiting opportunities. The entrepreneurial-directed approach integrates knowledge, experience and action in entrepreneurship education.

Similarly scholars propose the experiential approach to entrepreneurship education. The experiential learning approach was formulated by Kolb and Kolb (2005) and draws from the constructivist theory. The author defines experiential learning as the process whereby knowledge is created through the transformation of experience. In the experiential learning approach learners are immersed in an environment in which they actively

participate in acquiring knowledge, thereby allowing students to confront highly complex and dynamic situations (Strydom, 2008).

Finally there is active learning approach or learning by doing. In active learning approach or learning by doing, learners actively and autonomously construct their own knowledge (Dewey, 2013). Active learning approach engages learners in learning experiences that are active where they can reflect on and evaluate learning experiences, build on them to construct new knowledge and meanings (Lobler, 2006). The learning methods allow learners to learn through critical problem solving and active application of information. This approach incorporates the use of case studies, role plays, group exercises and business simulations (Lobler, 2006; Strydom, 2008).

The study will utilize the benefits of constructivist learning approach for understanding an effective entrepreneurship education process. This approach emphasizes effective pedagogical methods that are not only practical oriented and relevant but are also learner centered hence effective in teaching entrepreneurship education.

2.7.2 Personality Traits Theory

Personality is the dynamic organization within the individual of those psychological systems that determine one's characteristics, behavior and thought (Allport, 1937). Personality trait theory suggests that personality is biologically determined at birth and shaped by a person's environmental experience (Allport, 1937). In another contribution, Eysenck (1952) identified three dimensions of personality as: extraversion which is the tendency to seek and engage with the company of others; introversion which is the tendency to avoid the company of others and to withdraw from social situations; and neuroticism, which is the tendency to be worried and anxious. Similarly, Cattel (1965) categorized personality traits into what is termed big five personality traits namely: extraversion, agreeableness, conscientiousness, neuroticism and openness to experience. Proponents of personality trait theory argue personality traits are determining factors of behavior that make a person perform in a relatively consistent way across various circumstances (Allport, 1937; Cattel, 1965; Eysenck, 1952).

A great number of personality traits have been identified and explored in examining the difference between entrepreneurs and non-entrepreneurs. These psychological traits, also called entrepreneurial traits or characteristics, include achievement motivation, locus of control, risk-taking propensity, tolerance of ambiguity, self-confidence, innovation, energy level, need for autonomy and independence. Proponents of personality traits theory further argue that personality traits can be influenced by unique, tacit, subjective personal knowledge, values, beliefs, perceptions and experiences of individuals that are not easily replicated hence the traits of an individual may serve as a catalyst which influences the risk perception of entrepreneurs in decision making (Rauch & Hulsink, 2015).

Though personality trait theory has been previously used in intention studies (Birdthistle, 2008; Nga & Shamuganathan, 2010), some scholars criticize research which attempts to develop personality profiles of the entrepreneur. Such critics encourage research on behaviours and activities of entrepreneurs, rather than psychological traits. The critics contend that entrepreneurship is a behavior and should be understood through behavior patterns instead of personality traits. They argue that entrepreneurs are those who create a new business, not who they are. In this sense, entrepreneurship should focus on entrepreneurial activities, processes and results, not personality traits that are invisible (Ryan et al., 2011; Rauch & Hulsink, 2015).

2.7.3 Theory of Planned Behaviour

The theory of planned behaviour (TPB) was developed initially by Icek Ajzen (Ajzen, 1985). The theory links beliefs with behavior and suggests that intention is the best predictor of an individual's behaviour. This is because intention is an indication of how hard an individual is willing to try, and of how much of an effort he or she is planning to exert, in order to perform the behaviour. As a general rule, the stronger the intention to engage in certain behaviour, the more likely should be its performance.

The theory of planned behaviour also suggests that intention toward a specific behaviour has three immediate antecedents: personal attitude towards the behaviour, subjective norm and social pressure to perform. First, attitude toward the behaviour is the degree to which a person has a favourable or unfavourable evaluation of the behaviour in question.

Second, subjective norm refers to the perceived social pressure to perform or not to perform a particular behaviour. Thirdly, perceived behavioural control refers to the perceived ease or difficulty of performing the behaviour of interest and it is assumed to reflect past experience as well as anticipated impediments and obstacles ((Ajzen, 1985; Fishbein & Ajzen, 1975).

A number of studies find empirical support for the theory of planned behaviour in relation to entrepreneurial intention (Iakovleva, Kolvereid, & Stephen, 2011; Liñán & Chen, 2009; Siu & Lo, 2013). The theory provides the opportunity to measure the development of intentions through education (Fayolle et al., 2006). Specifically for hypotheses H_{01} which sought to determine the direct effect of entrepreneurship education on entrepreneurial intention, the theory lends insight on how course content and pedagogical approaches can be matched to trigger intention in the learner. The theory describes how exogenous influences such as attitude lead to intention and actual behavior hence its relevance in analyzing the third hypothesis.

In conclusion, this study benefitted from the strengths of constructivist approach to learning, theory of planned behavior and personality traits theory. Entrepreneurship education was guided by constructivist approach to learning which is considered practical and effective way of imparting entrepreneurial skills and knowledge. Theory of planned behavior was well suited to providing theoretical framework for understanding relationships between education and attitude and influence of attitude on intention. It was also appropriate to utilize tenets of personality trait theory as background understanding for analyzing the influence of personality traits on the relationship between entrepreneurship education and intention.

2.8 Conceptual Framework

This study integrated constructivist learning approach, personality traits theory and theory of planned behavior to develop the framework for the study. For effective outcome, the constructivist learning approach scholars stipulate that learning institutions must align entrepreneurship education with effective learning approaches such as: problem based learning, entrepreneurial-directed learning, experiential learning and active learning. According to the theory of planned behaviour, behavior is a function of

entrepreneurial intention. The theory suggests three immediate antecedents of behaviour namely: personal attitude towards the behaviour, subjective norm or social pressure to perform and perceived behavioural control. These antecedents, especially attitude towards the behaviour can be inculcated into an individual through exposure to entrepreneurship education. Personality traits theory argues that individuals possess innate characteristics or traits which influence their entrepreneurial intention. A model of the relationships among entrepreneurship education, personality traits, attitudes and entrepreneurial intention proposed in this study is indicated in Figure 2.1.

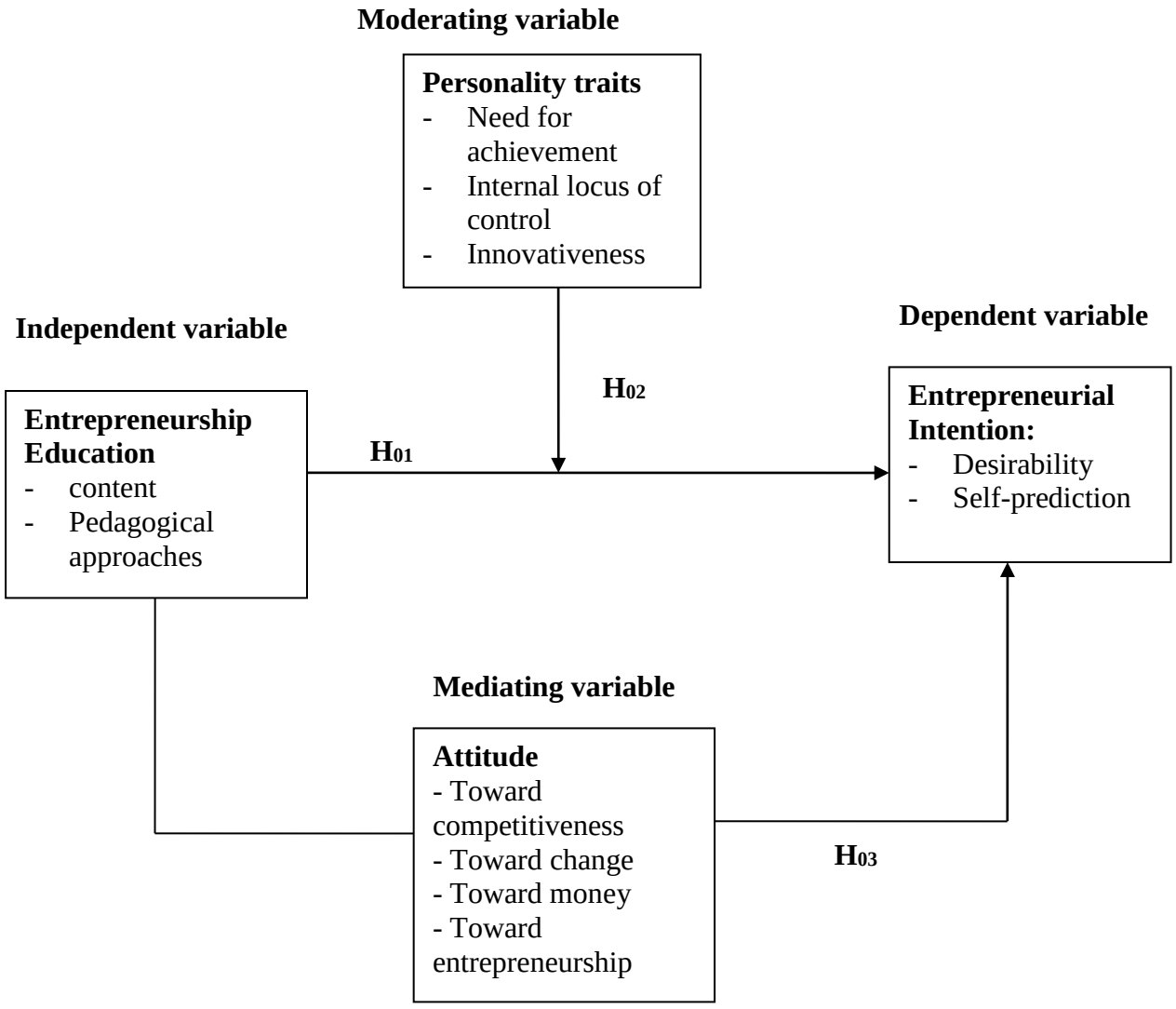

Figure 2.1 Relationships among entrepreneurial education, personality traits, attitudes and entrepreneurial intention.

As indicated in Figure 2.1, entrepreneurial intention is the dependent variable, entrepreneurship education was the independent variable and personality traits was the moderating variable while attitudes was the mediating variable. The model (Fig 2.1) indicates that entrepreneurship education is expected to have an effect on entrepreneurial intention. Entrepreneurship education is meant to equip students with knowledge, attitudes and capabilities required in setting up a business (Williamson, Beadle, Charalambaous, 2013; Draycott & Rae, 2011). Further, literature confirms that certain aspects of entrepreneurship such as practical processes of venture formation, acquisition and management of resources can be taught (Klein & Bullock; 2006). In support of constructivist learning approach, scholars suggest that a combination of various pedagogical practices would be effective in developing entrepreneurial capabilities and intention (Herrero & van Drop, 2012; Souitaris et al., 2007). Extant literature on entrepreneurship education posits that education influences one's attitude towards entrepreneurship and or behavior and these attitudes mediate the effects of any other factors on entrepreneurial intention (Schwarz et al., 2009; Ajzen, 2005). It is therefore expected that entrepreneurship education would have an effect on attitudes and attitudes would in turn mediate the relationship between education and intention.

Personality traits theory suggests that individuals have certain traits that determine whether or not one finds the tasks and roles of entrepreneurship attractive and viable (McClelland, 1965). Consequently, scholars suggest that the rate of new venture formation is contingent upon not only the economic, social, and political climate which facilitates and supports entrepreneurial activity, but also the individual's innate personality characteristics (Karabulut, 2016). Hence the effect of entrepreneurship education on intention is expected to be moderated by personality traits.

2.9 Summary of the Chapter

This chapter reviewed theoretical arguments and empirical studies on the linkages between study variables namely: entrepreneurship education, personality traits, attitudes and entrepreneurial intention. The chapter also presented the theoretical framework of the study, knowledge gaps, and the focus of the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology that was used in conducting the study. It explains the philosophical orientation, research design, study location, population and sample of the study and instrumentation. It also describes the data to be collected, operationalization of variables, data collection methods, tests for regression assumptions, tests of hypotheses and statistical techniques used in summarizing the data.

3.2 Philosophical Orientation

Research philosophy involves a set of assumptions or beliefs about the way in which data about a phenomenon should be gathered, analyzed, and used. This set of beliefs places strict guidelines and principles on how research should be conducted (Burns & Burns, 2008). There are two basic research philosophies or paradigms. Although there is considerable similarity between them, the two philosophies or paradigms can be categorized as either positivist or phenomenological (Collis & Hussey, 2009).

Positivism is an epistemological position that advocates the application of the methods of the natural sciences to the study of social reality (Bryman & Bell, 2011). It involves theory testing and the key argument of positivist orientation is that the world exists externally, and that its properties should be measured through objective methods, thus without interfering with the phenomena being studied (Saunders, Lewis, & Thornhill, 2009). Positivism seeks to explain what happens in the social world by searching for causal relationships between its constituent parts (Bryman & Bell, 2011). This entails employing and extending theory to develop hypotheses. The hypotheses developed become the basis for fact gathering that provides basis for subsequent testing. Positivism also embraces highly structured, systematic and objective methods in order to facilitate research replication and generalizability of findings. The emphasis is quantifiable observations that lend themselves to statistical analyses (Bryman & Bell, 2011).

Contrary to positivist, phenomenological orientation means that the researcher is directly involved with the situation, or is part of the research world. Saunders et al. (2007) argue

that in this sense, people not only interact with their environment, but also seek to make sense of it through their interpretation of events. Thus, phenomenological orientation involves theory development and assumes that experience of the world is subjective and best understood in terms of individual subjective meanings rather than objective definitions (Bryman & Bell, 2011).

This study was guided by positivist orientation as it was theory-driven and meant to test hypotheses in an objective manner. Theory and hypotheses are deemed to be the pillars of the positivist philosophy (Easterby-Smith, Thope, & Jackson, 2011). In addition, the study was underpinned by constructivist learning approach, theory of planned behaviour and personality trait theory to examine the influence of personality traits and attitude on the relationship between entrepreneurship education and entrepreneurial intention. By adopting a positivist approach, it was assumed that the research concepts are phenomena with known properties or dimensions and can be measured with standard instruments. The study also adopted the quantitative approach which is objective in nature and centers on measuring phenomena (Bryman & Bell, 2007).

Guided by constructivist approach to learning and the two theories, hypotheses were formulated, variables were scientifically measured and data analyzed using appropriate statistical techniques to test the hypotheses. The end result was either confirmation or rejection of the hypotheses.

3.3 Research Design

This study adopted a cross-sectional survey research design, thus data was collected at a single point in time. A survey design is useful in investigating the underlying relationships between variables (Bryman & Bell, 2007). In a survey research, variables can be measured without substantially increasing the time or cost. Data can be collected from many people at relatively low cost and depending on the survey design, relatively quickly. Survey design method lends itself to probability sampling from large populations (Bryman & Bell, 2007). Thus, cross sectional survey design was considered appropriate because of the need to collect data from a cross-section of the population at one point in time and the results generalized to represent the entire population of the study.

3.4 Study Location

The study was conducted in TVET institutions in Kenya. Kenya is a country in Africa. Its capital and largest city is Nairobi. Kenya's territory lies on the equator and overlies the East African Rift covering a diverse and expansive terrain that extends roughly from Lake Victoria to Lake Turkana and further south-east to the Indian Ocean. It is bordered by Tanzania to the south and south-west, Uganda to the west, South Sudan to the north-west, Ethiopia, to the north and Somalia to the north-east. Kenya covers 581,309 km^2 and had a population of approximately 48million people in January 2017 (Appendix II).

3.5 Population of the Study

The population of this study comprised all 855 third year students taking diploma in engineering courses (registered and enrolled as at September 2016 to August 2017), drawn from 27 public TVET institutions in Kenya. The institutions from where the population was drawn were homogeneous and spread across the country. Since the institutions where the population was derived were homogeneous and scattered over a wide geographical region, a sample was a reliable representation of the population (Kothari, 2004).

This study focused on engineering students because of the notion that it is science and engineering students in particular whose entrepreneurial activities create new, high quality firms therefore students undertaking engineering related courses are assumed to be more likely to consider themselves as inventors more than other students (Barba-Sanchez & Atienza-Sahuquillo, 2017). Furthermore, entrepreneurship education is the only business related subject these students taking engineering related disciplines are exposed to in their three year course in TVET institutions.

3.6 Sampling Design

The study used a multi-stage sampling procedure. The starting point for obtaining the sample was the list of registered TVET institutions in Kenya (Kenya Universities and Colleges Central Placement Service (KUCCPS), 2017). The list consisted of 67 public TVET institutions (Appendix II). The institutions listed were screened to select only technical training institutions that had been training students in engineering courses in the previous three years and directly controlled by the Ministry of Education but excluding

special schools and universities. This reduced the list to 29 institutions. Each of these was contacted by telephone to ascertain that they actually had 3rd year students taking engineering courses. The 29 institutions which met the criteria were included in the sampled institutions. The study adopted a multi-stage sampling.

In the first stage, a sample size of institutions was determined. To determine the sample size of the institutions, the statistical formula suggested by Cochran and cited by Saunders et al. (2007) was used. The author observes that sample size depends on how confident the researcher wants to be that the estimate is accurate (the level of confidence in the estimate), how accurate the estimate needs to be (margin of error), and the proportion of responses expected to have some particular characteristics. Hence for finite population the following formula to determine the sample size of institutions was used:

$$n = \frac{\left(z^2 pqN\right)}{e^2\left(N-1\right)+ z^2 pq}$$

Where:

n = the minimum sample size required

N = the total population of the institutions, which is 29

z = the standard normal deviate that is, 1.96 for 95% confidence level

p = the proportion in the target population estimated to be 50% if there is no estimate available of the proportion in the target population assumed to have the characteristic (0.5)

e = the level of significance or margin of error (set at 5% in this study).

q = 1-p.

Substituting the values in the formula gave a sample $\left(n\right)$ of 27 institutions as shown:

$$\frac{1.96^2 \times 0.5 \times 0.5 \times 29}{0.05^2\left(28\right)+1.96^2 \times 0.5 \times 0.5} = 27$$

The list of the 27 sampled institutions is in Appendix III. To pick the 27 institutions for the survey, the institutions were stratified into five regions namely: Mt. Kenya, Western, Coast, Nairobi, and North Rift. This was to ensure representation from all parts of the country.

The second stage involved determining the sample size of students who participated in the study. The statistical formula suggested by Cochran in 1963 and cited in Saunders et al. (2007) was again used. The population of students in the 27 institutions was 855. Thus (N) is 855, the standard normal deviate (z) that is, 1.96 for 95% confidence level, the proportion in the target population (p) estimated to be 0.5, q is 1-p, e is the level of significance or margin of error, which is 0.05 in this study. Substituting the values in the formula gave a sample (n) of 265 students as shown:

$$\frac{1.96^2 \times 0.5 \times 0.5 \times 855}{0.05^2(854) + 1.96^2 \times 0.5 \times 0.5} = 265$$

The third stage involved determining sub-sample size of students from each of the sampled institutions. To select the sub-sample of 265, the formula by Krejcie and Morgan in 1973 as cited in Kothari (2014) was used.

The formula is given as: $s = \frac{pS}{P}$

Where: s = Sub-sample size for each institution

p = Sub-population of students in each institution

S = Total sample size for the study

P = Total population for all the institutions

INSTITUTION	Number of Students	Sub-Sample
1. Thika Technical Training Institute	52	16
2. Masai Technical Training Institute	26	8
3. Nairobi Technical Training Institute	86	27
4. Kiambu Institute of Science and Technology	88	27
5. PC Kinyanjui Technical Training Institute	35	10
6. Kenya Coast National Polytechnic	28	9
7. Coast Institute of Technology	18	6
8. Rift Valley Technical Training Institute	78	24
9. O'lessos Technical Training Institute	24	7
10. Kaiboi Technical Training Institute	18	6
11. Nkabune Technical Training Institute	26	8
12. Jeremiah Nyaga Technical Training Institute	25	8
13. Michuki Institute of Science and Technology	24	7

14. Nyandarua Institute of Science and Technology	18	6
15. Mathenge Institute of Science and Technology	16	5
16. Friends College Kaimosi	52	16
17. Bushiangala Technical Training Institute	18	6
18. Shamberere Technical Training Institute	19	6
19. Kisiwa Technical Training Institute	21	7
20. Ramogi Institute of Science and Technology	40	12
21. Keroka Technical Training Institute	18	6
22. Mawego Technical Training Institute	24	7
23. Siaya Institute of Science and Technology	23	7
24. Bumbe Technical Training Institute	13	4
25. Matili Technical Training Institute	21	7
26. Emening' Technical Training Institute	27	8
27. Sang'alo Institute of Science and Technology	16	5
	855	**265**

Table 3.1: Distribution of Population and Sub-sample by Institution

To ensure that students from each of the engineering programs in the institution (Electrical, Mechanical, Automotive, Building Construction Technology, Land Survey, Quantity Survey, Agricultural Engineering and Civil Engineering) were sampled for the study, students were stratified according to programs.

Further, to select the sample units from each program, systematic sampling was used. This was achieved by picking the ***kth*** student from each stratum or program leaving the lecture room, which is acceptable method according to Kothari (2004). This technique was preferred because it ensured representative coverage of all elements being considered in the study (Kothari, 2004). However, where applicable, care was taken to ensure as many female students as possible participated in the study.

3.7 Instrumentation

In this study, data was gathered by use of questionnaire (Appendix I). Collecting data by questionnaire has the advantage of flexibility in terms of adapting the questionnaire to collect more data. Questionnaires have the advantage of obtaining data more efficiently in terms of time, energy and cost (Bryman & Bell, 2011). The questionnaire for this study consisted of 76 closed ended items using a five point Likert-type scale (Appendix I). The

scales were based on a five point Likert type scale ranging from 1 to 5, where: 1 is "Strongly Disagree"; 2, "Disagree"; 3, "Neutral"; 4, "Agree", and 5, "Strongly Agree". The five point Likert type scale has been widely used in previous entrepreneurial intention studies (Entriaglo & Iglesias, 2016; Oosterbeek et al., 2010). Closed ended items have the advantage of helping the respondents make quick decisions to choose among the set of alternatives. The questions also make it easier to code the information for subsequent analysis (Bryman & Bell, 2011). The measurement constructs for the variables were adopted from previous studies (Soutaris et al., 2007; Koh; 1996; Jackson, 2007; & Rotter, 1966). This was preferred due to two major reasons. Firstly, the items have already been tested for reliability and validity. Secondly, the findings in subsequent research employing the same constructs can be compared to prior studies (Linan, Rodriquez, Cohard, & Rueda-Cantuche, 2010).

Entrepreneurship education which was the independent variable in the study was measured by 31 items (1-31) adopted from Souitaris et al., (2007) and Johannisson (1991). Personality traits construct consisted of 22 items (32-53) that were adopted from the works of Rotter (1966); Jackson Personality Inventory developed by Jackson (2007), and Koh (1996). Attitudes was measured by 12 items (54-65) adopted from Autio, Keeley, Klofsten & Parker, (2001). Finally, the measurement scale for entrepreneurial intention was adopted from Entrepreneurial Intention Questionnaire (EIQ) that was developed by Linan and Chen (2009). The instrument contains 11 items (66-76) in the questionnaire.

3.8 Operationalization of Study Variables

The study contained a number of measures designed to elicit information about the research variables: entrepreneurship education, personality traits, attitude and entrepreneurial intention. According to Bryman and Bell (2011), a concept must be operationalized in order to render it measurable. This is done by looking at the dimensions, facets or properties denoted by the construct which are then translated into observable and measurable elements on which measurement scale is developed (Bryman & Bell, 2011). The variables in this study were operationalized by borrowing from related past studies as discussed below.

The independent variable of this study was entrepreneurship education. Entrepreneurship education was measured using the dimensions of course content and pedagogical approaches (Souitaris et al., 2007; Johannisson, 1999). Based on extant literature on entrepreneurship education, five-point Likert-type response scales were constructed with items on course content and pedagogical approaches. Respondents were asked to indicate extent to which they agreed with the statements. A higher agreement with the statement in the scale was taken to mean the student had acquired entrepreneurship education to a great extent.

The moderating variable was personality traits. Personality traits were operationalized in terms of the widely used dimensions of need for achievement, internal locus of control and innovativeness. Items to measure this dimension were adopted from Koh (1996) and the items to measure internal locus of control were borrowed from Jackson Personality Inventory, Jackson (2007). Finally, innovativeness was measured by items borrowed from the instrument developed by Rotter (1996). Informed by literature, five point Likert-type response scales were developed based on the dimensions of the variables. Respondents were asked to assess how accurately the statements described their personalities. Higher agreement with the statements in the scale was taken to mean the student possessed entrepreneurial traits.

The mediating variable in the study was attitude. Items to measure attitude comprised: attitude towards competitiveness, attitude towards money, attitude towards change and attitude towards entrepreneurship, as adopted from Autio et al. (2001). Questionnaire items were developed based on these dimensions of attitude. Likert-type scales were developed based on the dimensions of the mediating variable. Respondents were asked to assess how the statements described their attitude. Higher agreement with the statements in the scale was taken to mean the student exhibited various aspects of attitude related to entrepreneurship.

Finally, entrepreneurial intention which was the dependent variable in this study was operationalized by two widely used dimensions of self-prediction and desirability and measured by Entrepreneurial Intention Questionnaire which was adapted from prior studies (Linan & Chen, 2009; Krueger, 1993). Respondents were asked to indicate extent

to which they agreed with the statements. A higher agreement with the statement in the scale was taken to mean the student had formed an intention to a great extent. The summary of specific variables, indicators, source and measurement scale adopted for the study are indicated in Table 3.2.

Variable	Selected Indicators	Source	Measurement scale	Questionnaire items
Entrepreneurship education	-course content -Pedagogy approaches	Souitaris et al. (2007), Johannisson (1999)	Five point Likert-type scale where: 1=Strongly disagree (SD) 2=Disagree (D) 3=Neutral (N) 4=Agree(A) 5=Strongly Agree (SA)	Section B 1-31 (31 items)
Personality traits	-Need for achievement -Locus of control -Innovativeness	Koh (1996) Jackson (2007) Rotter (1966)	Five point Likert-type scale where: 1=Strongly disagree (SD) 2=Disagree (D) 3=Neutral (N) 4=Agree(A) 5=Strongly Agree (SA)	Section C 32-53 (22 items)
Attitudes	- Attitude toward competitiveness - Attitude toward money - Attitude toward change - Attitude toward entrepreneurship	Autio et al., (2001)	Five point Likert-type scale where: 1=Strongly disagree (SD) 2=Disagree (D) 3=Neutral (N) 4=Agree(A) 5=Strongly Agree (SA)	Section D 54-65 (12 items)
Entrepreneurial intention	- Desirability - Self-prediction	EIQ (Linan & Chen 2009); Krueger (1993)	Five point Likert-type scale where: 1=Strongly disagree (SD) 2=Disagree (D) 3=Neutral (N) 4=Agree(A) 5=Strongly Agree (SA)	Section E 66-76 (11 items)

Table 3.2: Operationalization of the Study Variables

3.9 Pre-Testing of the Draft Questionnaire

Before the final form of the questionnaire was constructed, it was useful to conduct a pilot study. The aim was to determine if the items were yielding the kind of information that was needed. Baker (1994) posits that a sample size of 10-20% of the sample size for the actual study is a reasonable number of participants to consider enrolling in a pilot.

The pilot testing in this study involved 30 students selected from a convenience sample of students taking different engineering courses in their third year of study at Kenya Industrial Development Institute (KITI) in Nakuru, Kenya. The institution was chosen because it was perceived as likely to include subjects with similar characteristics as those who would be chosen as respondents. This section discusses the test-retest, reliability and validity of the study instruments.

3.9.1 Test-Retest of the Study Instrument

During the piloting, the researcher first confirmed that the respondents were drawn from the population of interest and were able to provide the required information. The researcher then explained the objectives of the study and its expected output. The researcher issued out the questionnaire and requested the respondents to read it and indicate whether the instructions were clear and meaningful. The objective was to ensure there was minimum misinterpretation or misunderstanding of the questions. Valuable comments that were raised resulted into some revisions to the draft questionnaire before the second test was administered. After one week, the revised questionnaire was again administered to the same students, in the same procedure and the scores were almost the same as the previous test.

3.9.2 Test of Reliability

As a preliminary check on reliability of the multi-item scales used, the 30 completed and returned questionnaires after the second test were examined to determine their reliability. The reliability analysis of an instrument determines its ability to yield consistent measurements. Reliability refers to the degree of internal consistency (Baker, 1994). To test the internal consistency of the scale items, Cronbach's alpha coefficient, the most commonly used method for internal consistency (Baker 1994), was used. The results of the analysis are presented in Table 3.3

Variables	Cronbach's Alpha	Number of Items
Course Content	.903	19
Pedagogical Approaches	.777	12
Need for Achievement	.740	5
Internal Locus of Control	.916	9
Innovativeness	.915	8
Attitude towards Competitiveness	.671	2
Attitude towards Money	.769	2
Attitude towards Entrepreneurship	.741	6
Self-prediction	.708	7
Desirability	.706	6
Overall Reliability Statistics	**.923**	**76**

Table 3.3: Reliability Statistics

As shown in Table 3.3, all research constructs had alpha coefficients of above 0.7, except the coefficient for attitude towards competitiveness which was slightly low (0.671). The overall Cronbach's Alpha coefficient was 0.923. Overall, the instrument met the recommended threshold of 0.7 (Baker, 1994) and thus was considered reliable.

3.9.3 Test of Validity

The study instrument was subjected to content validity test. The content validity measures the adequacy with which a specific domain of content has been sampled (Baker, 1994). Items for the variables used in this study were carefully developed based on the literature on entrepreneurship education and entrepreneurial intention. All the items were designed according to the definition of the constructs as well as the related findings of the existing literature.

Moreover, the measurements were reviewed by scholars in the Faculty of Commerce, Egerton University (entrepreneurship education professionals and academics in management research) and tested through selected engineering diploma students who were exposed to entrepreneurship education at KITI in Nakuru, Kenya. Data was collected from a purposively selected sample of students so as to explore any errors in format, wording and design of the research instrument (Pallant, 2010). Their comments were collated, reviewed and used to verify the appropriateness and comprehensiveness of

the final questionnaire. Thus, the measurements used in this study were considered to have content validity.

3.10 Tests for the Assumptions of Regression Analysis

Since regression analysis was used as the main analysis technique, the assumptions of linearity, homoscedasticity, normality and multicollinearity were tested. This section presents the results of the tests.

3.10.1 Linearity and Homoscedasticity

To test for linearity and homoscedasticity, a scatterplot of standardized residuals (ZRESID) against standardized predicted (ZPRED) values were used. Figure 3.1 shows the graph for the data.

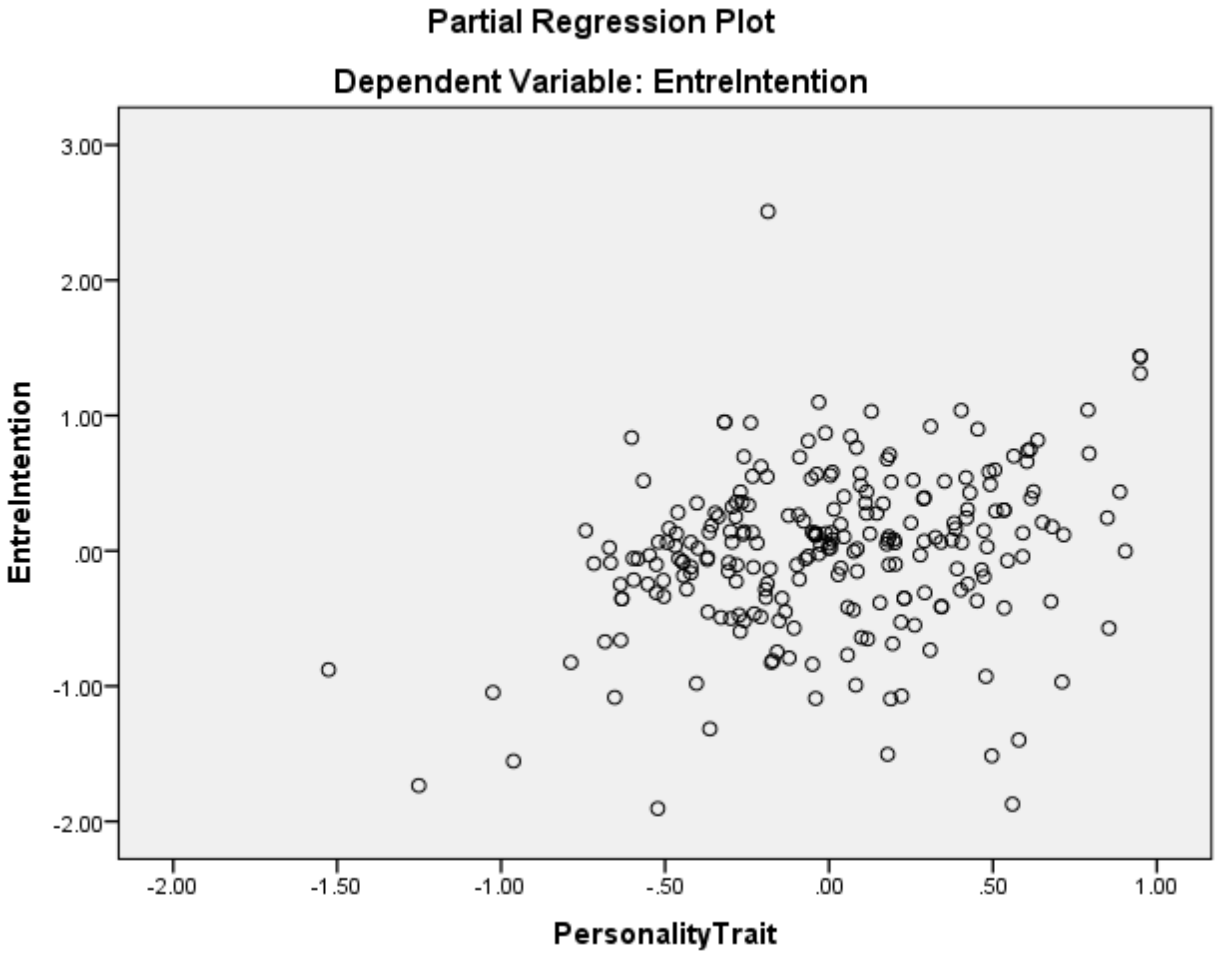

Figure 3.1: Scatter plot of ZRESID against ZPRED

Figure 3.1 shows that data points are randomly and evenly dispersed around zero, the graph does not funnel out and there is no sort of curve in the graph. This pattern indicates that the assumptions of linearity and homoscedasticity were met.

3.10.2 Test for Normality

To test for normality, the normal probability plot was used and the plotted data values were compared with the diagonal. Figure 3.2 shows the results of the test for normality.

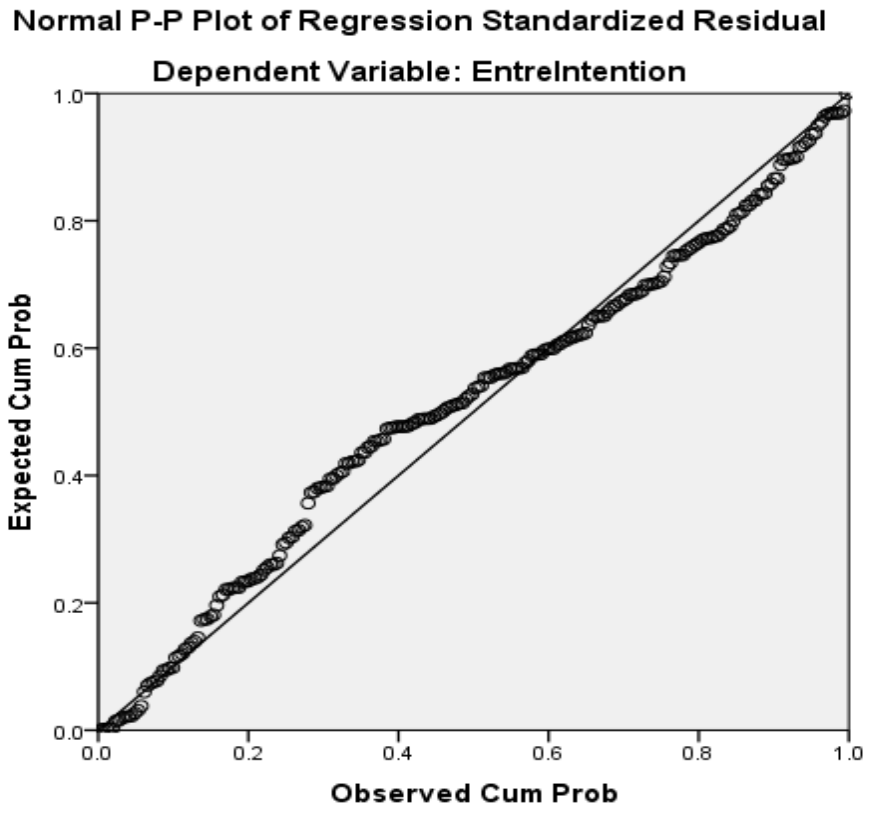

Figure 3.2: Normal Probability Plot

As shown in Figure 3.2, the line representing the actual data distribution is a straight line following the diagonal indicating normal distribution of the data. Hence the survey data met the normality assumption.

3.10.3 Test for Multicollinearity

To test for multicollinearity of the predictor variables in the study, diagnostics of tolerance and variance inflation factor (VIF) were used. The results of the analysis are presented in Table 3.4.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.596	.302		5.289	.000		
	Entrepreneurship Education	.173	.091	.132	1.901	.058	.657	1.522
	Personality Trait	.292	.099	.223	2.960	.003	.559	1.789
	Attitude	.245	.063	.263	3.914	.000	.703	1.422

a. Dependent Variable: Entrepreneurship Intention

Table 3.4: Results of the Test of Multicollinearity

A tolerance of below 0.1 or a VIF of greater than 10 are considered to indicate a serious problem of multicollinearity. As shown in Table 3.4, none of tolerance values was below 0.1 and all the VIFs were below 10, hence indicating that multicollinearity was not a problem in this study.

3.11 Data Collection Procedure

Research data was obtained from primary sources. Research data can be obtained from primary or secondary sources (Sekaran, 2003). Before collecting data for this study, a research permit was obtained from National Commission for Science, Technology and Innovation (NACOSTI). To gain access to study respondents, contact was made with the principal's office where research permit was presented. The researcher then proceeded to the entrance to the relevant lecture venues to identify the *Kth* student leaving the lecture venue. The identified respondents were assigned numbers. The identified respondents were requested to proceed to a classroom where the questionnaire was self-administered. Self-administered questionnaire is advantageous in that it can establish rapport and motivate respondents, doubts can be clarified and response rate is usually high (Sekaran,

2003; Saunders, Lewis, & Thornhill, 2007). The respondents were required to complete the questionnaire within 30 minutes and return them to the researcher upon completion. Classroom completion of questionnaires is a practical approach often used by many scholars relying on student samples in the entrepreneurial intention studies (Prieto, Wang, Hinrichs, & Aguirre-Milling, 2010). Data collection covered a period of two weeks and ensured inclusiveness of all sampled students.

3.12 Data Analysis

The data collected were edited and coded for analysis. With the aid of Statistical Package for the Social Sciences (SPSS), descriptive statistics were used to summarize the data and inferential statistics were used to test the hypotheses.

Descriptive statistics, specifically frequencies and percentages were used to describe the profiles of the institutions and respondents. Means and standard deviations were used to describe the research variables: entrepreneurship education, personality traits, attitude and entrepreneurial intention. Pearson's product moment correlation was used to determine the relationship between the study variables.

The first hypothesis which stated that entrepreneurship education does not have a significant effect on entrepreneurial intention was tested by use of simple regression analysis. The dimensions of entrepreneurial intention thus; desirability and self-prediction were regressed on entrepreneurship education. The composite scores were computed by adding the scores of the items measuring the dimensions and dividing the total score by the total number of items (Pallant, 2010). The following model was used to analyze the hypothesis:

$Y= \beta o+\beta_1 X_1 + Ɛ$ ---------- (3.1)

Where:

Y is the dependent variable (entrepreneurial intention)

β_0 is the Y intercept

β_1 is the regression (beta) coefficient for entrepreneurship education

X_1 is entrepreneurship education

Ɛ is regression error term.

Interpretation was based on regression coefficients; R^2.

The second hypothesis stated that the effect of entrepreneurship education on entrepreneurial intention is not moderated by personality traits. This was tested using hierarchical regression analysis. Hierarchical regression analysis provides a method for testing contingency hypotheses in which interaction is implied by entering variables into a model sequentially in blocks to determine whether the addition of the potential moderator, interaction term increases the overall fit of the model (R Squared) significantly (Easterby-Smith et al., 2012). Hierarchical regression analysis has been used in similar studies (Bierly & Daly, 2007; Mueller, 2011) to test moderating effect. Composite scores for entrepreneurship education, personality traits and entrepreneurial intention were used in the analysis.

The composite scores were collapsed by adding scores from all the items measuring the respective variables and dividing the total score by the total number of the items (Pallant, 2010). Dimensions of personality traits that were considered in this study were internal locus of control, need for achievement, and innovativeness. The dimensions were collapsed to form a composite score for personality traits that was used in the analysis.

Three regression models (3.2, 3.3 and 3.4) specified below was used to test the hypothesis:

$Y = \beta o + \beta_1 X + \varepsilon$ ----------(3.2)

$Y = \beta o + \beta_1 X + \beta_2 Z + \varepsilon$ ----------(3.3)

$Y = \beta o + \beta_1 X + \beta_2 Z + \beta_3 XZ + \varepsilon$ ----------(3.4)

Where:

Y is the dependent variable (entrepreneurial intention)

β_1 is beta coefficient for X (entrepreneurship education)

β_2 is beta coefficient for Z (personality traits)

β_3 is beta coefficient for XZ (cross product of entrepreneurship education and personality traits)

X is the independent variable (entrepreneurship education)

Z is the moderating variable (personality traits)

XZ is the cross-product of the independent variable and moderator (interaction term)

ε is the regression error term.

In the first equation (3.2), the dependent variable (entrepreneurial intention) was regressed on the independent variable, entrepreneurship education; the second equation (3.3) had the dependent variable (entrepreneurial intention), the independent variable (entrepreneurship education), and the moderator (personality traits). Finally, in the last equation (3.4), the dependent variable was regressed on independent variable, moderator, and the cross-product of the independent variable and moderator, that is, the interaction term. The cross-product was used to determine the effect of the interaction between the independent variable and moderator on the dependent variable. If the addition of the interaction term significantly increases the R squared, the interaction or moderator effect can be said to exist.

The third hypothesis stated that the effect of entrepreneurship education on entrepreneurial intention is not mediated by attitude. To test the hypothesis, Baron and Kenny (1986) four step approach in which several regression analyses are conducted and the significance of the coefficients are examined at each step was used. Composite scores of entrepreneurship education, attitudes and entrepreneurial intention were used in the analysis. The composite scores were computed by adding scores from all the items measuring the respective variables and dividing the total score by the total number of the items (Pallant, 2010).

The first step was to show that there existed a relationship between the independent variable and dependent variable which may be mediated. Hence, the dependent variable, entrepreneurial intention was regressed on the independent variable, entrepreneurship education. Regression model (3.5) was used to test the first condition for mediation:

$Y = \alpha_0 + \beta_1 X_1 + \varepsilon_0$ ----------(3.5)

Where:

Y is the dependent variable (entrepreneurial intention)

α_0 is the Y intercept

β_1 is the regression (beta) coefficient for entrepreneurship education

X_1 is the independent variable (entrepreneurship education)

ε_0 is the regression error term

The second step was to show that the independent variable was related to the potential mediator. Hence the potential mediating variable, attitude was regressed on independent variable, entrepreneurship education. This is represented by regression model (3.6):

$M = \alpha_1 + \beta_2 X_1 + \varepsilon_1$ ----------(3.6)

Where:

M is the mediating variable (attitudes)

α_1 is the Y intercept

β_2 is the regression (beta) coefficient for entrepreneurship education

X_1 is the dependent variable (entrepreneurship education)

ε_1 is the regression error term

The third step was to show that the potential mediator was related to the dependent variable. To show this, the dependent variable, entrepreneurial intention was regressed on the mediating variable, attitude. To make the assessment, regression model (3.7) was applied:

$Y = \alpha_2 + \beta_3 M + \varepsilon_2$ ---------- (3.7)

Where:

Y is the dependent variable (entrepreneurial intention)

α_2 is the Y intercept

β_3 is the regression (beta) coefficient for attitudes

M is the mediating variable (attitudes)

ε_2 is the regression error term

In the final step, dependent variable was regressed on independent variable and the potential moderator in blocks. This was to show that the strength of the relation between the independent and dependent variable was significantly reduced when the mediator was added to the model. If the variable was a complete mediator, the relations between independent and dependent variables would not be significant after the effect of the mediating variable is controlled for. To test this condition, model (3.8) was used:

$Y = \alpha_3 + \beta_4 X_{1+} \beta_5 M + \varepsilon_3$ ---------- (3.8)

Where:

Y is the dependent variable (entrepreneurial intention)

α_3 is the Y intercept

β_4 is the regression (beta) coefficient for entrepreneurship education

β_5 is the regression (beta) coefficient for attitudes

X_1 is the independent variable (entrepreneurship education)

M is the mediating variable (attitudes)

ε_3 is the regression error term

To test hypothesis H04, which stated that entrepreneurship education, personality traits and attitudes jointly do not have a statistically significant effect on entrepreneurial intention. Composite scores of entrepreneurship education, personality traits and attitudes and entrepreneurial intention were used in the analysis. The following multiple regression model (3.9) was used:

$$Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \quad \text{----------(3.9)}$$

Where:

Y is the dependent variable (entrepreneurial intention)

α_0 is the Y intercept

β_1 is the regression coefficient for entrepreneurship education

β_2 is the regression coefficient personality traits

β_3 is the regression coefficient for attitudes

X_1 is the independent variable (entrepreneurship education)

X_2 is the moderator variable, personality traits

X_3 is the mediator variable, attitudes

ε is the regression error term

The summary of research objectives, hypotheses and inferential statistics to test hypotheses is presented in Table 3.5.

Objective	Hypothesis	Analysis technique	Interpretation
i. Determine the effect of entrepreneurship education on entrepreneurial intention.	H01. Entrepreneurship education does not have significant effect on entrepreneurial intention.	Simple regression: $Y = \beta_0 + \beta_1 X_1 + \varepsilon$ Where Y = Entrepreneurial intention; βo = constant β_1, β_2 = regression coefficients X_1 = entrepreneurship education ε = error term	R^2 value; If R^2 values for entrepreneurship education and F and t are all significant ($p < 0.05$), then entrepreneurship education has significant effect on intention..
ii. Determine the influence of personality traits on the relationship between entrepreneurship education and entrepreneurial intention	H02. The effect of entrepreneurship education on entrepreneurial intention is not moderated by personality traits.	Hierarchical regression: $Y = \beta o + \beta_1 X + \varepsilon$ $Y = \beta o + \beta_1 X + \beta_2 Z + \varepsilon$ $Y = \beta o + \beta_1 X + \beta_2 Z + \beta_3 XZ + \varepsilon$ Where, Y = entrepreneurial intention; β_1 is beta coefficient for X β_2 is beta coefficient for Z β_3 is beta coefficient for XZ (cross product) X = entrepreneurship Education, Z = personality traits, XZ = cross product of the variables ε = Error term (Variation due to unexplained factors)	If change in R^2 after addition of interaction term (moderator) is significant (R^2 change, F change, and t, are significant, $p < 0.05$), then personality traits moderates the relationship.
iii. Examine the influence of attitudes on the relationship between entrepreneurship education and entrepreneurial intention.	H03. The effect of entrepreneurship education on entrepreneurial intention is not mediated by attitude	Baron and Kenny (1986), Regression equations: Model (3.5) $Y = \alpha_0 + \beta_1 X_1 + \varepsilon_0$; Where: Y is the dependent variable (entrepreneurial intention) α_0 is the Y intercept β_1 is the regression (beta) coefficient for entrepreneurship education X_1 is the independent variable (entrepreneurship education) ε_0 is the regression error term	If relationship between entrepreneurship education and intention is significant (t is significant, $p < 0.05$); relationship between attitude and intention is significant (t is significant, $p < 0.05$); and relationship between entrepreneurship education and intention is no longer significant when the effect of attitude is controlled for (t is not significant, $p > 0.05$), then attitude mediate the relationship.

Model (3.6)

$M = \alpha_1 + \beta_2 X_1 + \varepsilon_1$

Where:

M is the mediating variable (attitude)

α_1 is the Y intercept

β_2 is the regression (beta) coefficient for entrepreneurship education

X_1 is the dependent variable (entrepreneurship education)

ε_1 is the regression error term

Model (3.7)

$Y = \alpha_2 + \beta_3 M + \varepsilon_2$

Where:

Y is the dependent variable (entrepreneurial intention)

α_2 is the Y intercept

β_3 is the regression (beta) coefficient for attitudes

M is the mediating variable (attitude)

ε_2 is the regression error term

Model (3.8)

$Y = \alpha_3 + \beta_4 X_1 + \beta_5 M + \varepsilon_3$

Where:

Y is the dependent variable (entrepreneurial intention)

α_3 is the Y intercept

β_4 is the regression (beta) coefficient for entrepreneurship education

β_5 is the regression (beta) coefficient for attitudes

X_1 is the independent variable (entrepreneurship education)

M is the mediating variable (attitude)

ε_3 is the regression error term

Where: Y = Entrepreneurial intention; X_1 = Entrepreneurship education; M = Attitude

iv. To determine the joint effect of entrepreneurship education, personality traits and attitudes on entrepreneurial intention.	H04. There is no significant joint effect of entrepreneurship education, personality traits and attitudes on entrepreneurial intention.	Multiple regression: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$ Where: Y = entrepreneurial intention; X_1 = entrepreneurship education, X_2 = personality traits; X_3 = attitudes. β_0 = constant, $\beta_1, \beta_2, \beta_3$ = coefficients, ε = error term	Joint effect of the independent variables is determined by checking significance of each variable (R^2, F, and t are significant, $p < 0.05$).

Table 3.5: Summary of Objectives, Hypotheses and Analysis Techniques

3.13 Ethical Considerations

The study was conducted with due consideration of research ethics. At the beginning of the survey conducted in class, it was stressed that honesty for self-assessment was very important for getting accurate data as well as for the respondents' personal ethic. It was also emphasized that all the questionnaires were anonymous and responses would be kept confidential. The participants were told that they were voluntary to join the survey and there was no penalty for refusing to fill the questionnaire. Further, respondents were made aware that there were no right or wrong answers for each of the questions and the survey was not evaluating their performance. These procedures were meant to reduce the participants' evaluation anxiety and make them less likely to edit their answers or consult with their friends.

3.14 Summary of the Chapter

This chapter described the methodology that was used in conducting the study. It explained the philosophical orientation, research design, study location, population and sample of the study and instrumentation. It also describes the data to be collected, operationalization of variables, data collection methods, test of reliability and validity of research instruments, tests for regression assumptions, inferential techniques used for testing hypotheses and statistical techniques used in summarizing the data. The next chapter presents and discusses the results of descriptive statistics and tests of hypotheses.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter contains data presentation, analysis, interpretation and discussion of the results of the study. The chapter starts with presentation of the response rate, assessment of research instruments and regression assumptions. Then the results of descriptive statistics of the profiles of respondents are presented. This is followed by results of descriptive statistics of the study variables, correlation analysis and tests of hypotheses. Finally, the chapter presents discussion of the results of the study.

4.2 Response Rate

The unit of analysis in this study was the student as each student has unique up take level of entrepreneurship education, personality traits, attitudes and entrepreneurial intention. Questionnaires were distributed to 265 students in TVET institutions in Kenya. A total of 239 questionnaires in a form usable for analysis were returned, which constituted a response rate of 90%. This response rate was considered adequate as suggested by Bryman and Bell (2007).

An inspection of the missing data patterns was conducted. The inspection results showed that the number of missing values on the study variables was random and small. The cases with missing patterns did not reveal systematic values on the items of the independent variables and the dependent variable. Being that the cases of missing values were randomly distributed and small, imputation of missing values was not considered necessary; and missing values were excluded pair-wise in the SPSS 21.0. The pair-wise exclusion ensures removal of cases that have a missing value on the variables being correlated or regressed only.

4.3 Descriptive Statistics

This section presents and discusses results of descriptive statistics of the profile of respondents. It also presents descriptive analysis results of the study variables.

4.3.1 Profile of Respondents

The respondents in this study were students in public TVET institutions spread across the country and taking engineering courses in their third year of study. They were considered to have formed entrepreneurial intention as a result of prior three years of entrepreneurship education in their respective institutions. Frequencies and percentages were used to examine the distribution of the respondents by course of study, gender and region. The profile of the respondents is shown in Table 4.1.

Feature	Aspect	Frequency	Percent	Valid Percent
Course	Electrical Engineering	73	30.5	30.5
	Quantity Surveying	9	3.8	3.8
	Civil Engineering	25	10.5	10.5
	Architecture	2	.8	.8
	Building and Construction	25	10.5	10.5
	Mechanics and Automotive Engineering	56	23.4	23.4
	Plumbing	2	.8	.8
	Land Survey	18	7.5	7.5
	Others	29	12.1	12.1
Gender	Male	176	73.6	73.6
	Female	63	26.4	26.4
Region	Mount Kenya	30	12.6	12.6
	Nairobi	93	38.9	38.9
	Western	71	29.7	29.7
	North Rift	28	11.7	11.7
	Coast	17	7.1	7.1

Table 4.1: Distribution of Respondents by Course, Gender and Region

As shown in Table 4.1, majority of students were taking Electrical Engineering (30.5%), followed by Mechanical and Automotive Engineering (23.4%). The students enrolled for Civil Engineering and Building Construction Engineering stood at 10.5% respectively. A total of 7.5% enrolled for Land Survey while 3.8% were taking Quantity Survey. The least popular courses were Architecture and Plumbing (0.8%) respectively.

The distribution of respondents by gender indicated that the majority of respondents (73.6%) were male while only 26.4% were female. This was expected as most of engineering courses are popular with males than they are with females not only in TVET institutions, but also in other institutions of higher learning in Kenya.

From Table 4.1, Nairobi Region had the highest enrollment (38.9%) followed by Western Region (29.7%). While Mt. Kenya Region had an enrollment of 12.6%, North Rift Region registered only 11.7%. Finally, Coast Region had the least population of only 7.1%. These figures show that respondents were drawn from both gender, course of study and regions of the country.

4.3.2 Entrepreneurship Education

The responses were analyzed using mean scores and standard deviations. Higher mean scores indicated strong agreement on the item and lower mean score implied strong disagreement with the statements. Table 4.2 presents the results of the analysis.

Statement	N	Min	Max	Mean	Std. Dev
Course Content				**4.26**	
The entrepreneurship course increases my understanding of generating innovative ideas	239	1	5	4.34	.795
The entrepreneurship course increases my understanding of environmental assessment of entrepreneurial ventures	239	1	5	4.11	.879
The entrepreneurship course increases my understanding of financial preparation for entrepreneurial ventures	239	1	5	4.31	.871
The entrepreneurship course increases my understanding of planning a business	239	1	5	4.44	.752
The entrepreneurship course increases my understanding of market research for entrepreneurial ventures	239	1	5	4.16	.884
Entrepreneurship course increases my understanding of attitudes of entrepreneurs (how they view entrepreneurship and why they act)	239	1	5	3.94	.942
Entrepreneurship course increases my understanding of importance of entrepreneurship to both society and individuals	239	1	5	4.27	.747
Entrepreneurship course increases my understanding of personal characteristics of entrepreneurs (risk taking, innovation etc)	239	1	5	4.32	.772
Entrepreneurship course gives me a sense that entrepreneurship is achievable	239	1	5	4.26	.811

Entrepreneurship course increases my understanding of the motives of engaging in entrepreneurial activities (money, self-achievement, social status etc)	239	1	5	4.16	.790
Entrepreneurship course enhances my ability to develop networks (obtaining useful information from lecturers, guest speakers or classmates)	239	1	5	4.07	.983
The creative atmosphere in the entrepreneurship class inspires my entrepreneurial mind	239	1	5	4.01	1.006
Views of external speakers inspire my entrepreneurial mind	239	1	5	3.87	1.037
The entrepreneurial experience of the entrepreneurs enhances my understanding of the entrepreneurial process	239	1	5	3.97	.835
Entrepreneurship course enhances my skills to develop business plans	239	1	5	4.48	.697
Entrepreneurship course enhances my skills to handle an entrepreneurship project	239	2	5	4.31	.695
Entrepreneurship course enhances my skills to deal with risks and uncertainties	239	1	5	4.18	.832
Entrepreneurship course enhances my skills to allocate resources (e.g. money, personnel, time etc)	239	2	5	4.33	.720
Entrepreneurship course enhances my ability to identify a business opportunity	239	1	5	4.48	.782
Pedagogical Approaches				**3.16**	
The instructor frequently gave the class case studies	239	1	5	3.20	1.182
Guest speakers/lecturers were often invited to give lectures	239	1	5	3.03	1.241
Group discussions were commonly used during lectures	239	1	5	3.09	1.247
The lecturer frequently used traditional lecture method	239	1	5	2.70	1.219
The class would perform role plays to enhance lectures	239	1	5	3.26	1.111
The lecturer would give the class individual project work	239	1	5	3.40	1.263
The lecturer would give the class group project work	239	1	5	3.49	1.192
The lecturer would use real world situations (simulation) in teaching	239	1	5	3.88	1.111
During the class I had the chance to listen to entrepreneur's field reports (e.g. entrepreneurs' speeches, lecturer's reports).	239	1	5	3.34	1.284
There were frequent field visits to established businesses	239	1	5	2.69	1.335
Our lectures were computer based	239	1	5	2.84	1.306
The class frequently interacted with practicing entrepreneurs	239	1	5	2.95	1.335
Overall Mean				**3.71**	
Valid N (listwise)	239				

Table 4.2: Mean and Standard Deviation for Measures of Entrepreneurship Education

As shown in Table 4.2, the items with the highest score was “entrepreneurship course enhances my ability to identify a business opportunity” (M = 4.48, SD = 0.782). The item with the lowest score was “there were frequent field visits to established businesses” (M = 2.69, SD = 1.335). The overall mean score for entrepreneurship education was 3.71.

These results were interpreted to mean that entrepreneurship education is capable of creating entrepreneurial intentions. Thus, the entrepreneurship education curriculum content offered in TVET institutions is effective and comprehensive enough to impart “know what”, ‘know who”, “know why” and “know what” skills. However, Neck et al., (2014) proposes that in building curricula to encourage and empower future entrepreneurs, it must be recognized that “one size does not fit all.” This means that there is no perfect content and therefore the curriculum content should be based on the learning needs of students (Welsh et al., 2014).

In inculcating entrepreneurial skills, lecturers require several innovations in the mode of teaching (do Paco et al., 2015). The findings in this study reveal that pedagogical methods employed in TVET institutions to teach entrepreneurship are entirely based on traditional approach, especially, classroom lecture. This contradicts the assertion by (Arasti et al., 2012) that effective entrepreneurs are exceptional learners who ought to learn from a variety of effective sources. They should learn from other entrepreneurs and also from experience and by doing. The above discussion shows that an application of variety of pedagogical approaches is essential for effective delivery of the curriculum.

4.3.3 Personality Traits

The study described personality traits of students. The aspects of personality traits included need to achieve, internal locus of control and innovativeness. This section presents the results of descriptive statistics of the aspects of personality traits. Table 4.3 presents the descriptive results of personality traits.

Statement	N	Min	Max	Mean	Std. Dev
Need for Achievement				**3.83**	
I take pleasure in responding to challenges, so competition makes me work harder.	239	1	5	4.26	.991
I do not like a well-paid job if I cannot derive a sense of achievement and satisfaction from it.	239	1	5	3.69	1.143
I want to earn only as much as possible to attain a comfortable way of life.	239	1	5	3.81	1.183
I do not mind routine, unchallenging work if the pay is good.	239	1	5	3.06	1.377
When I do something, I see to it that it does not only get done but is done with excellence.	239	1	5	4.35	.910
Internal Locus of Control				**3.32**	
My success depends on whether I am lucky enough to be in the right place at the right time.	239	1	5	3.77	1.290
To a great extent my life is controlled by accidental happenings.	239	1	5	2.16	1.251
When I get what I want, it is usually because I worked hard for it.	239	1	5	4.23	.981
My life is determined by own actions.	239	1	5	4.20	.976
It is not wise for me to plan too far ahead, because things turn out to be a matter of bad fortune.	239	1	5	2.66	1.362
Whether or not I am successful in life depends mostly on my ability.	239	1	5	3.89	1.120
I feel that what happens in my life is mostly determined by people in powerful positions.	239	1	5	2.38	1.414
I feel in control of my life.	239	1	5	4.05	.973
Success in business is mostly a matter of luck.	239	1	5	2.55	1.373
Innovativeness				**3.36**	
I often surprise people with my novel ideas.	239	1	5	3.34	1.176
People often ask me for help in creative activities.	239	1	5	3.66	1.111
I obtain more satisfaction from mastering a skill than coming up with a new idea.	239	1	5	3.07	1.218
I prefer work that requires original thinking.	239	1	5	3.81	1.167
I usually continue doing a new job in exactly the way it was taught to me.	239	1	5	3.28	1.211
I like a job which demands skill and practice rather than inventiveness.	239	1	5	3.62	1.140
I am not a very creative person.	239	1	5	2.16	1.249
I like to experiment with various ways of doing the same thing.	239	1	5	3.92	1.024
Overall Mean				**3.50**	
Valid N (listwise)	239				

Table 4.3: Mean and Standard Deviation for Personality Traits

As shown in Table 4.3, the overall mean score for personality traits was 3.50. The need to achieve dimension had the highest score (3.83). The item with the highest score was "When I do something, I see to it that it does not only get done but is done with excellence (M = 4.35, SD = 0.91); the item with the lowest score was "I do mind routine, unchallenging work if the pay is good" (M = 3.06, SD = 1.38). The mean score for internal locus of control dimension was 3.32. The item with the highest score was "when I get what I want, it is usually because I worked hard for it" (M = 4.23, SD = 0.98); the item with the lowest score was "To a great extent my life is controlled by accidental happenings (M = 2.16, SD = 1.25). For innovativeness dimension, the mean score was 3.36. The item with the highest score was "I like to experiment with various ways of doing the same thing (M = 3.92, SD = 1.02); the item with the lowest score was "I am not a very creative person" (M = 2.16, SD = 1.25).

These results were interpreted to mean that the respondents' personality traits differ and this difference in personality traits may cause them to behave in different ways. Generally, personality traits affect entrepreneurial intention. The finding is in line with the personality trait theory. According to Allport (1937) personality traits are biologically determined at birth and these traits may be shaped by a person's environmental experience such as exposure to education. However, there are certain innate entrepreneurial traits inherent in particular individuals that make them more entrepreneurial minded than others.

The findings further support previous findings (Zhao, Seibert, & Lumpkin, 2010; Nga & Shamuganathan, 2010) who found that personality traits of an individual influences entrepreneurial intention. Specifically, the findings are consistent with those of Entrialgo & Igleasis (2016) that there is a positive correlation between need for achievement and entrepreneurial intention. Law & Brewznik (2017) also found that innovativeness has a positive statistical significance association with entrepreneurial intention.

4.3.4 Attitude

The responses were analyzed using mean scores and standard deviations. Table 4.4 presents the results of the analysis.

Statement	N	Min	Max	Mean	Std. Dev
Attitude towards Competitiveness				**3.32**	
I work harder in situations where my performance is compared against that of others	239	1	5	3.79	1.261
It annoys me when other people perform better than I do	239	1	5	2.85	1.458
Attitude towards Money				**2.81**	
If you have a high income, that is a sign that you have had success in your life.	239	1	6	2.72	1.484
It is important for me to make a lot of money.	239	1	5	3.35	1.378
Attitude towards Change				**3.04**	
I find working in stable and routinized environments boring.	239	1	5	2.80	1.250
I need constant change to remain stimulated, even if this would mean higher uncertainty	239	1	5	3.28	1.165
Attitude towards Entrepreneurship				**3.79**	
A career as an entrepreneur is totally unattractive to me.	239	1	5	2.32	1.356
If I had the opportunity and resources, I would love to start a business.	239	1	5	4.27	.992
Amongst various options, I would rather be anything but an entrepreneur.	239	1	5	3.55	1.333
Being an entrepreneur would give me great satisfaction.	239	1	5	4.06	.968
Being an entrepreneur implies more advantages than disadvantages to me.	239	1	5	4.16	.892
I would rather be my own boss than a secure job	239	1	5	4.36	.809
Overall Mean				**3.46**	

Table 4.4: Mean and Standard Deviation Measures of Attitude

As shown in Table 4.4, the overall mean score for attitudes was 3.46. The mean score for the attitude towards competitiveness dimension was 3.32. The item with the higher score was “I work harder in situations where my performance is compared against that of others” (M = 3.79, SD = 1.26) while the item with the lower score was “It annoys me when other people perform better than I do” (M = 2.85, SD = 1.46). The mean score attitude towards money dimension is 2.81. The item with the higher score was “It is important to make a lot of money” (M = 3.35, SD = 1.38) whereas the item with the

lower score was “If you have a high income, that is a sign that you have had success in your life (M = 2.72, SD = 3.35). The next dimension was attitude towards change with a mean score of 3.04. The higher score was “I need constant change to remain stimulated, even if this will mean uncertainty” (M = 3.28, SD = 1.17) and the item with the lower score was “I find working in stable and routinized environments boring (M = 2.80, SD = 1.25). The mean score for attitude towards entrepreneurship dimension was 3.79. The item with the highest score was “I would rather be my own boss than secure a job (M = 4.36, SD = 0.81) while the item with the lowest score was “A career as an entrepreneur is totally unattractive to me” (M = 2.32, SD = 1.36).

These scores indicate that the respondents strongly agreed with the statements regarding the items of dimensions of attitude towards: competitiveness, money, change and entrepreneurship. This was an indication that students develop varying attitudes towards competiveness, money, change and entrepreneurship.

4.3.5 Entrepreneurial Intention

Responses regarding entrepreneurial intention were analyzed using mean score and standard deviations. Table 4.5 presents the results of the analysis.

Statement	N	Min	Max	Mean	Std. Dev
Self-prediction				**4.26**	
I am ready to do anything to be an entrepreneur	239	1	5	3.90	1.085
My professional goal is becoming an entrepreneur	239	1	43	4.08	2.720
I will make every effort to start and run my own firm	239	1	5	4.38	.801
I have got the intention to start a firm some day	239	1	5	4.35	.790
I am determined to create a firm in the future	239	1	5	4.42	.763
I have very seriously thought of starting a firm	239	1	5	4.33	.896
I have got the intention to start a firm some day	239	1	5	4.29	.850
Desirability				**3.96**	
I desperately want to work for myself	239	1	5	3.68	1.307
The idea of owning my own business is very appealing to me	239	1	5	4.24	.950
I cannot imagine working for someone else	239	1	5	3.25	1.326
Working in my own business would be very personally satisfying	239	1	6	4.35	1.006
Overall Mean				**4.12**	

Table 4.5: Mean and Standard Deviation for Entrepreneurial Intention

As shown in Table 4.5, the overall mean for entrepreneurial intention was 4.12. The mean score for self-prediction dimension was 4.26. The item “I am determined to create a firm in future” had the highest mean score (M = 4.42, SD = 4.08), while the item “my professional goal is becoming an entrepreneur” scored the lowest mean (M = 4.04, SD = 2.72). The score for desirability dimension was 3.96. The highest mean was for the item on “Working in my own business would be very personally satisfying” (M = 4.35, SD = 1.01) while the item with the least score was “I cannot imagine working for someone else” (M = 3.25, SD = 1.33). These scores indicate that a majority of the respondents strongly agreed that they had entrepreneurial intentions.

4.4 Correlation Analysis

The correlation among entrepreneurship education, personality traits, attitude and entrepreneurial intention was analyzed using Pearson product moment correlation. The results of the analysis are presented in Table 4.6.

		Entre Education	Personality Trait	Attitude	Entre Intention
Entrepreneurship Education	Pearson Correlation	1	.578**	.398**	.365**
	Sig. (2-tailed)		.000	.000	.000
	N	239	239	239	239
Personality Trait	Pearson Correlation	.578**	1	.533**	.439**
	Sig. (2-tailed)	.000		.000	.000
	N	239	239	239	239
Attitude	Pearson Correlation	.398**	.533**	1	.434**
	Sig. (2-tailed)	.000	.000		.000
	N	239	239	239	239
Entrepreneurship Intention	Pearson Correlation	.365**	.439**	.434**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	239	239	239	239

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.6: Correlation Matrix for Entrepreneurship Education, Personality Traits, Attitude and Entrepreneurial Intention

The correlation results in Table 4.6 show a significant positive relationship between entrepreneurship education and entrepreneurial intention (Pearson's $r = 0.365$, $p < 0.05$). The results also show that the relationship between personality traits and entrepreneurial intention is positive and significant ($r = 0.439$, $p < 0.05$). The correlation results also reveal that there is a significant positive relationship between attitude and entrepreneurial intention ($r = 0.434$, $p < 0.05$). Further, the results show a significant positive relationship between entrepreneurship education and attitude ($r = 0.398$, $p < 0.05$); and a significant positive relationship between entrepreneurship education and personality traits ($r = 0.578$, $p < 0.05$). The results are consistent with findings of past studies which found a positive relationship between entrepreneurship education and entrepreneurial intention (Bae et al., 2014; Otuya et al., 2012; Ngugi et al., 2012).

4.5 Test of Hypotheses

This section presents analysis and results of the tests of hypotheses using inferential statistics. The section presents the results of statistical analyses and interpretations of the results in relation to the research hypotheses.

4.5.1 Entrepreneurship Education and Entrepreneurial Intention

The first objective of the study was to determine the effect of entrepreneurship education on entrepreneurial intention. It was hypothesized (H01) that entrepreneurship education does not have a significant effect on entrepreneurial intention. To test this hypothesis, the composite scores for each variable were collapsed by adding the scores of the items measuring the dimensions and dividing the total score by the total number of items (Pallant, 2010).The hypothesis was tested using simple regression. The results of the analysis are presented in Table 4.7.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.384[a]	.147	.144	.61292

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.339	1	15.339	40.829	.000[b]
	Residual	88.659	236	.376		
	Total	103.998	237			

a. Dependent Variable: EntreIntention

Table of Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.008	.324		6.191	.000		
	Entrepreneurship Education	.541	.085	.384	6.390	.000	1.000	1.000

a. Dependent Variable: EntreIntention

b. Predictors: (Constant), Entrepreneurship Education

Table 4.7: Simple Regression Results for Effect of Entrepreneurship Education on Entrepreneurial Intention

As shown in Table 4.7, the R^2 for the model is 0.147 indicating that 14.7% of the variation in entrepreneurial intention is explained by variation in entrepreneurship education. A possible explanation for the low variation in entrepreneurial intention explained by entrepreneurship education (14.7%) suggests that there could be other factors which affect entrepreneurial intention which were not included in the model.

The ANOVA results indicate that the model is statistically significant (F= 40.83, p = 0.000, thus, p<0.05). The standardized coefficients show that the effect of entrepreneurship education on entrepreneurial intention is positive and statistically significant. The simple regression model results fail to support the null Hypothesis H01, that there is no statistically significant effect of entrepreneurship education on entrepreneurial intention. The null hypothesis is therefore rejected. This means that provision of entrepreneurship education would result in higher entrepreneurial intention.

4.5.2 Entrepreneurship Education, Personality Traits and Entrepreneurial Intention

The second objective sought to determine the influence of personality traits on the relationship between entrepreneurship education and entrepreneurial intention. Hypothesis (H02) postulated that personality traits do not moderate the relationship between entrepreneurship education and entrepreneurial intention. This was tested using hierarchical regression analysis. The results were as shown in Table 4.8.

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.384[a]	.147	.144	.61292	.133	36.227	1	236	.000
2	.459[b]	.211	.204	.59090	.078	23.212	1	235	.000
3	.466[c]	.217	.207	.58973	.006	1.936	1	234	.165

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.840	1	13.840	36.227	.000[b]
	Residual	90.158	236	.382		
	Total	103.998	237			

2	Regression	21.944	2	10.972	31.424	.000[c]
	Residual	82.054	235	.349		
	Total	103.998	237			
3	Regression	22.618	3	7.539	21.678	.000[d]
	Residual	81.380	234	.348		
	Total	103.998	237			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	2.312	.294		7.862	.000					
	Entrepreneurship Education	.475	.079	.365	6.019	.000	.365	.365	.365	1.000	1.000
2	(Constant)	1.689	.309		5.459	.000					
	Entrepreneurship Education	.218	.093	.167	2.352	.019	.365	.152	.136	.666	1.502
	Personality Trait	.449	.093	.342	4.818	.000	.439	.300	.279	.666	1.502
3	(Constant)	-.293	1.458		-.201	.841					
	Entrepreneurship Education	.751	.394	.576	1.905	.058	.365	.124	.110	.037	27.387
	Personality Trait	1.019	.420	.776	2.426	.016	.439	.157	.140	.033	30.640
	Entrepreneurship Education Personality Trait	-.152	.109	-.754	-1.391	.165	.442	-.091	-.080	.011	87.776

a. Predictors: (Constant), Entrepreneurship Education

b. Predictors: (Constant), Entrepreneurship Education, Personality Trait

c. Predictors: (Constant), Entrepreneurship Education, Personality Trait, Entrepreneurship Education Personality Trait

d. Dependent Variable: Entrepreneurship Intention

Table 4.8: Hierarchical Regression Results for Moderating Effect of Personality Traits on the Relationship between Entrepreneurship Education and Entrepreneurial Intention

As shown in Table 4.8, in Model 1, entrepreneurial intention was regressed on entrepreneurship education and the R^2 was 0.147. This indicates that 14.7% of the variation in entrepreneurial intention is explained by variation in entrepreneurship education. The ANOVA results indicate that Model 1 is statistically significant ($F = 36.227$; $p < 0.05$). The standardized coefficients show that the effect of entrepreneurship education on entrepreneurial intention is positive and significant ($\beta = 0.365$; $t = 6.019$; $p < 0.05$).

Model 2 shows that when entrepreneurial intention was regressed on personality traits and added to the model, R^2 increased to 0.211, indicating that 21.1% of the variation in entrepreneurial intention is explained by variation in entrepreneurship education and personality traits. The model shows that personality traits explains additional 7.8% variation in entrepreneurial intention (R^2 change = 0.078). The additional variation in entrepreneurial intention explained by personality traits is thus significant (F change = 23.212, $p < 0.05$). The standardized coefficients show that the effect of entrepreneurship education on entrepreneurial intention is positive and significant ($\beta = 0.342$, $t = 4.818$, $p < 0.05$).

In Model 3, the interaction (entrepreneurship education * personality traits) was introduced. The R^2 increased to 0.217 indicating that 21.7% of variation in entrepreneurial intention is explained by variation in entrepreneurship education and personality traits and the interaction term. The model also shows that change in R^2 is 0.006; indicating that 6% of the variation in entrepreneurial intention is explained by the interaction between entrepreneurship education and personality traits. The model also indicates that the additional variation in entrepreneurial intention attributed to the interaction term as predictor variables is significant ($F = 21.678$, $p < 0.05$).

Regarding the relative effect of the predictor variables in explaining variation in entrepreneurial intention, standardized coefficients in Model 3 revealed that personality traits had the greatest effect ($\beta = 0.776$, $t = 2.426$, $p < 0.05$) followed by interaction term ($\beta = -0.754$, $t = -1.391$, $p <0.05$) and entrepreneurship education ($\beta = 0.576$, $t = 1.905$, $p < 0.05$). Further, standardized coefficients show that both predictor variables have a significant positive effect on entrepreneurial intention. The results show that personality

traits is a significant moderator of the relationship between entrepreneurship education and entrepreneurial intention, hence Hypothesis H02 which postulated that personality traits do not moderate the relationship between entrepreneurship education and entrepreneurial intention is rejected.

4.5.3 Entrepreneurship Education, Attitudes and Entrepreneurial Intention

The third objective was to examine the influence of attitudes on the relationship between entrepreneurship education and entrepreneurial intention. The hypothesis (H03) stated that the effect of entrepreneurship education on entrepreneurial intention is not mediated by attitudes. This was tested following Baron and Kenny's (1986) procedure.

The first step, the analysis was to show that there existed a relationship between entrepreneurship education and entrepreneurial intention which may be mediated. Hence, the dependent variable, entrepreneurial intention was regressed on the independent variable, entrepreneurship education. The results of the analysis are shown in Table 4.9.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.384[a]	.147	.144	.61292

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.840	1	13.840	36.227	.000[b]
	Residual	90.158	236	.382		
	Total	103.998	237			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.306	.295		7.816	.000
	Entrepreneurship Education	.477	.079	.365	6.019	.000

a. Dependent Variable: Entrepreneurship Intention

b. Predictors: (Constant), Entrepreneurship Education

Table 4.9: Simple Regression Results for Effect of Entrepreneurship Education on Entrepreneurial Intention

The Model Table 4.9 shows that R^2 is 0.147 which shows that 14.7% of variation in entrepreneurial intention is explained by variation in entrepreneurship education. The ANOVA results show that the model was significant ($F = 36.227$, $p < 0.05$). The standardized coefficients show that the effect of entrepreneurship education on entrepreneurial intention is positive and significant ($\beta = 0.365$, $t = 6.019$, $p < 0.05$). The first analysis established that there existed a significant relationship between entrepreneurship education and entrepreneurial intention which could be mediated.

The second step, the analysis was to show that the independent variable was related to the potential mediator. Hence the potential mediating variable, attitudes was regressed on independent variable, entrepreneurship education. The aim of the step was to show that entrepreneurship education and attitude were related. Table 4.10 shows the results of the regression analysis.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.398[a]	.159	.155	.65134

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	18.901	1	18.901	44.551	.000[b]
	Residual	100.123	237	.424		
	Total	119.024	238			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.240	.311		3.988	.000
	Entrepreneurship Education	.558	.084	.398	6.675	.000

a. Dependent Variable: Attitude

b. Predictors: (Constant), Entrepreneurship Education

Table 4.10: Simple Regression Results for Effect of Entrepreneurship Education on Attitude

The model in Table 4.10 shows that R^2 is 0.159, indicating that entrepreneurship education explains 15.9% of the variance in attitude. The ANOVA results indicate that the model is significant ($F = 44.551$, $p < 0.05$). The standardized coefficients show that the effect of attitude is positive and significant ($\beta = 0.398$, $t = 6.675$, $p < 0.05$). Thus, the results show that the second condition for mediation was also satisfied, that is, entrepreneurship education and attitudes were significantly related.

The third step analysis was to show whether the potential mediator was related to the dependent variable. To prove this, the dependent variable, entrepreneurial intention was regressed on the mediating variable, attitudes. The results of the analysis are presented in Table 4.11.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.434[a]	.188	.185	.59810

a. Predictors: (Constant), Attitude

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.576	1	19.576	54.725	.000[b]
	Residual	84.422	236	.358		
	Total	103.998	237			

a. Dependent Variable: EntreIntention

b. Predictors: (Constant), Attitude

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.729	.185		14.765	.000
	Attitude	.406	.055	.434	7.398	.000

a. Dependent Variable: EntreIntention

Table 4.11: Simple Regression Results for Effect of Attitudes on Entrepreneurial Intention

As shown in Table 4.11, the model indicates R^2 of 0.188. This shows that 18.8% of the variance in entrepreneurial intention is explained by variation in attitude. Further, the

ANOVA results indicate that the model is statistically significant ($F = 54.725$, $p < 0.05$). The standardized coefficients show that the effect of attitude on entrepreneurial intention positive and significant ($\beta = 0.434$, $t = 7.398$, $p < 0.05$). The third condition for mediation was also accomplished.

In the fourth step, a hierarchical regression analysis was performed. This was to determine whether the moderator variable was a full or partial mediator. The dependent variable (entrepreneurial intention) was regressed on independent variable (entrepreneurship education) and the potential mediator (attitudes) in two stages. First, the dependent variable was regressed on the mediator variable. Second, the dependent variable was regressed on the independent variable again. This was to show that the strength of the relation between the independent and dependent variable was significantly reduced when the mediator was added to the model. If the variable was a complete, full or perfect mediator, the relations between independent and dependent variables would not be significant after the effect of the mediating variable is controlled for. In contrast, if there remains a significant direct effect of entrepreneurship education on entrepreneurial intention, after controlling for attitudes, researchers typically report that the mediator is only a partial mediator. The regression results for the fourth step were as shown in Table 4.12.

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.384[a]	.147	.144	.61292	.133	36.227	1	236	.000
2	.482[b]	.232	.225	.58298	.099	30.275	1	235	.000

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.840	1	13.840	36.227	.000[b]
	Residual	90.158	236	.382		
	Total	103.998	237			
2	Regression	24.129	2	12.065	35.498	.000[c]
	Residual	79.869	235	.340		
	Total	103.998	237			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	2.312	.294		7.862	.000					
	Entrepreneurship Education	.475	.079	.365	6.019	.000	.365	.365	.365	1.000	1.000
2	(Constant)	1.912	.287		6.669	.000					
	Entrepreneurship Education	.297	.081	.228	3.660	.000	.365	.232	.209	.841	1.189
	Attitude	.321	.058	.343	5.502	.000	.434	.338	.315	.841	1.189

a. Dependent Variable: Entrepreneurship Intention

b. Predictors: (Constant), Entrepreneurship Education

c. Predictors: (Constant), Entrepreneurship Education, Attitude

Table 4.12: Hierarchical Regression Results for Effect of Entrepreneurship Education on Entrepreneurial Intention, Controlling for the Effect of Attitude

As shown in the Model 1 in Table 4.12, R^2 is 0.147 indicating that variation in entrepreneurship education explains 14.7% of the variance in entrepreneurial intention. The ANOVA results indicate that the model was significant ($F = 36.227$, $p < 0.05$). The standardized coefficients show that the effect of entrepreneurship education on entrepreneurial intention is positive and significant ($\beta = 0.365$, $t = 6.019$, $p < 0.05$).

Model 2 shows that 23.2% of the variation in entrepreneurial intention is explained by variation in entrepreneurship education and attitude ($R^2 = 0.232$). The model further shows that addition of attitude explained additional 9.9% (R^2 change = 0.999) variation in entrepreneurial intention. The additional variation in entrepreneurial intention was significant (F change = 30.275, $p < 0.05$). The ANOVA results show that Model 2 which includes entrepreneurship education and attitude is significant ($F = 35.498$, $p < 0.05$). The standardized coefficients show that the effect of attitude on entrepreneurial intention is positive and significant ($\beta = 0.343$, $t = 5.502$, $p < 0.05$).

Overall, the results showed a significant relationship between entrepreneurship education as the independent variable and entrepreneurial intention as the dependent variable ($\beta = 0.365$, $t = 6.019$, $p < 0.05$); significant relationship between entrepreneurship education and attitude as mediating variable ($\beta = 0.398$, $t = 6.675$, $p < 0.05$) and significant relationship between attitude and entrepreneurial intention ($\beta = 0.434$, $t = 7.398$, $p < 0.05$); Further, the effect of entrepreneurship education on entrepreneurial intention was still significant when the effect of attitude was controlled for ($\beta = 0.343$, $t = 5.502$, $p < 0.05$). These results show that not all the conditions for full mediation were met but that there was partial mediation hence the results failed to support the hypothesis that the effect of entrepreneurship education on entrepreneurial intention is not mediated by attitude. Figure 4.1 summarizes the results of the mediated regression analysis.

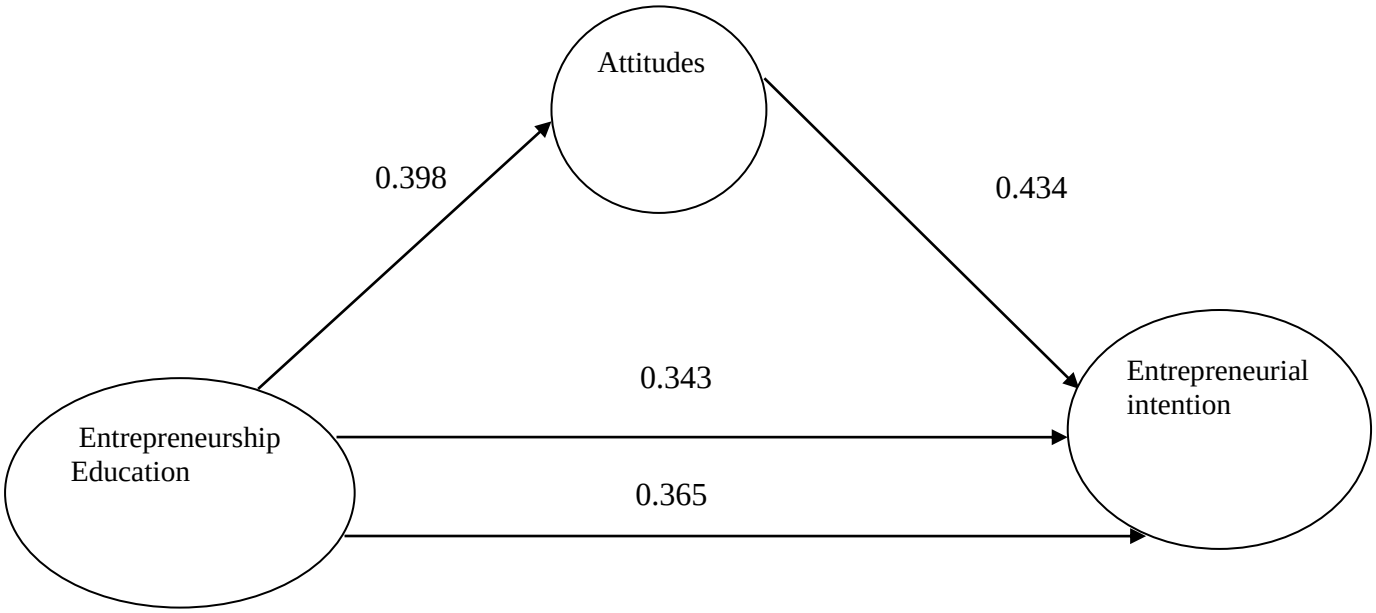

Figure 4.1: Regression Coefficients for Statistical Test of Mediation

The results in Figure 4.1 show that not all the conditions for full, complete or perfect mediation were met. The results show that there was partial mediation, thus there could be other indirect variables other than attitudes would also mediate the relationship between entrepreneurship education and entrepreneurial intention.

4.5.4 Entrepreneurship Education, Personality Traits, Attitudes and Entrepreneurial Intention

The fourth objective was to determine the joint effect of entrepreneurship education, personality traits and attitudes on entrepreneurial intention. The hypothesis (H04) postulated that entrepreneurship education, personality traits and attitudes jointly do not have a significant effect on entrepreneurial intention. This hypothesis was tested by multiple regression analysis where entrepreneurial intention was regressed on a combination of all predictor variables (entrepreneurship education, personality traits and attitude) to establish the combined effect of entrepreneurship education, personality traits and attitude on entrepreneurial intention. The regression results are presented in Table 4.13.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.510[a]	.260	.250	.57358	.260	27.368	3	236	.000	2.015

a. Predictors: (Constant), Attitude, Entrepreneurship Education, Personality Trait
b. Dependent Variable: Entrepreneurship Intention

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	27.012	3	9.004	27.368	.000[b]
	Residual	76.986	236	.329		
	Total	103.998	239			

Table of Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.596	.302		5.289	.000
	Entrepreneurship Education	.173	.091	.132	1.901	.058
	Personality Trait	.292	.099	.223	2.960	.003
	Attitude	.245	.063	.263	3.914	.000

a. Dependent Variable: Entrepreneurship Intention

b. Predictors: (Constant), Attitude, Entrepreneurship Education, Personality Trait

Table 4.13: Multiple Regression Results for Joint Effect of Entrepreneurship Education, Personality Traits and Attitude on Entrepreneurial Intention

As shown in Table 4.13, R^2 value for the model is 0.260 which indicates that 26% of the variation in entrepreneurial intention is explained by variation in entrepreneurship education, personality traits and attitude. The ANOVA results indicate that the model is significant ($F = 27.368$, $p < 0.05$). These findings fail to support hypothesis H04 which stated that the joint effect of entrepreneurship education, personality traits and attitude does not have a statistically significant effect on entrepreneurial intention.

The standardized coefficients show that the effect of entrepreneurship education alone on entrepreneurial intention is positive and not significant ($\beta = 0.132$, $t = 1.901$, $p > 0.05$). The standardized coefficients for the effect of personality traits alone on entrepreneurial intention is also positive and not significant ($\beta = 0.223$, $t = 2.960$, $p > 0.05$) while the effect of attitude alone on entrepreneurial intention is positive and significant ($\beta = 0.263$, $t = 3.914$, $p < 0.05$). The findings suggest that among the three independent variables, attitude contributed more significantly to entrepreneurial intention.

Overall, the results showed that the joint effect of predictor variables on entrepreneurial intention was significant ($R^2 = 0.260$, $F = 27.368$, $p < 0.05$). Hence the hypothesis that there is no significant joint effect of entrepreneurship education, personality traits and attitudes on entrepreneurial intention was rejected.

4.6 Discussion of Results

This section discusses the results of this study to show the extent to which the results are consistent or inconsistent with existing theories and the results of past studies. The discussion is based on existing theories, past studies and hypotheses.

4.6.1 Entrepreneurship Education and Entrepreneurial Intention

The first objective of the study was to determine the effect of entrepreneurship education on entrepreneurial intention. It was hypothesized that entrepreneurship education does not have a significant effect on entrepreneurial intention. The hypothesis was tested using simple regression. The regression results showed a positive and significant relationship between course content and entrepreneurial intention ($\beta = 0.309$, $t = 4.875$, $p < 0.05$) and a positive but insignificant effect of pedagogical approaches on entrepreneurial intention

(β= 0.175, t = 2.706, p > 0.05). Thus the results failed to support Hypothesis H01, that entrepreneurship education does not have a significant effect on entrepreneurial intention. The hypothesis was therefore was rejected.

The finding of this study is consistent with the view that entrepreneurship education improves knowledge, skills and information needed to pursue an opportunity and also equip individuals with analytical ability and knowledge of entrepreneurial process (Bae et al., 2014). The finding is also in support of the argument that entrepreneurship education aims at equipping students with skills and also enhances their abilities to recognize, evaluate, marshal resources and to initiate and run the business successfully (Souitaris, 2007). Further, the finding corroborates the findings of past studies (Olomi & Sinyamule, 2009; Otuya et al., 2012; Ngugi et al., 2012) that entrepreneurship education positively affects entrepreneurial intention of students.

The positive coefficients for both course content and pedagogical approaches suggest that an effective entrepreneurship education program should comprise comprehensive course content and appropriate pedagogical approaches. These findings support the suggestion that an effective entrepreneurship education program should include a variety of entrepreneurial skills namely: “know-why” which reflects personal values and interest in learning; “know who” reflecting learning at social level by interacting with people; “know how” which is the practical part of entrepreneurial learning, and “know what” which refers to the theoretical part of entrepreneurship that involves definitions and basic concepts of entrepreneurship (Johannisson, 1991).

The results of this study also reveal that the effect of pedagogical approaches on entrepreneurial intention was positive but not significant. A possible explanation for the insignificant effect of pedagogical approaches on entrepreneurial intention may be that most lecturers do not employ innovative methods of course delivery but could be relying on traditional methods such as lectures which do not excite the learners.

4.6.2 Entrepreneurship Education, Personality Traits and Entrepreneurial Intention

The second objective sought to determine the influence of personality traits on the relationship between entrepreneurship education and entrepreneurial intention.

Hypothesis (H02) postulated that personality traits do not moderate the relationship between entrepreneurship education and entrepreneurial intention. The hypothesis was tested by hierarchical regression analysis. The regression results showed that the interaction between entrepreneurship education and personality traits resulted in a significant increase in R^2 (change in $R^2 = 0.217$, F change = 21.678, $p < 0.05$). These results fail to support the hypothesis that the effect of entrepreneurship education on entrepreneurial intention is not moderated by personality traits. The results support previous findings (Karabulut, 2016; Zhao et al., 2010) who contend that individual personality of entrepreneurs provides the impetus to high will power that drives their passions, innovativeness and interactions. The finding also echoes theoretical argument that some individuals have certain psychological characteristics that determine whether or not one finds the tasks or roles of entrepreneurship attractive and viable (McClleland, 1965).

The finding also lends credence to prior studies (Nga & Shamuganathan, 2010; Zhao et al., 2010) which reported that certain traits such as risk propensity, locus of control, innovativeness and need to achieve are positively and significantly associated with entrepreneurial intention. However, unlike prior studies which examined the role personality traits play (Colakoglu & Gozukara, 2016; Volery et al., 2013) this study focused on the moderating effect of personality traits on the relationship between entrepreneurship education and entrepreneurial intention. The study contributes to knowledge by showing empirically that personality traits are a necessary condition for the effect of entrepreneurship education on entrepreneurial intention.

4.6.3 Entrepreneurship Education, Attitude and Entrepreneurial Intention

The third objective was to examine the influence of attitudes on the relationship between entrepreneurship education and entrepreneurial intention. The hypothesis stated that the effect of entrepreneurship education on entrepreneurial intention is not mediated by attitudes. This was tested following Baron and Kenny's (1986) procedure. The results showed a significant relationship between entrepreneurship education as the independent variable and entrepreneurial intention as the dependent variable ($\beta = 0.365$, $t = 6.019$, $p < 0.05$); significant relationship between entrepreneurship education and attitude as

mediating variable ($\beta = 0.398$, $t = 6.675$, $p < 0.05$) and significant relationship between attitude and entrepreneurial intention ($\beta = 0.434$, $t = 7.398$, $p < 0.05$); Further, the effect of entrepreneurship education on entrepreneurial intention was still significant when the effect of attitude was controlled for ($\beta = 0.343$, $t = 5.502$, $p < 0.05$). These results show that not all the conditions for full mediation were met but that there was partial mediation hence the results failed to support the hypothesis that the effect of entrepreneurship education on entrepreneurial intention is not mediated by attitude.

This finding is consistent with previous studies (Law & Breznik, 2017; Dinc & Budic 2016) who established that entrepreneurship education changes one's attitude which in turn causes entrepreneurial intention. The finding also corroborates previous (Botsaris & Vamvaka, 2016; Malebana, 2012; Gibcus et al., 2012) findings that attitudes mediate the relationship between entrepreneurship education and entrepreneurial intention. The findings of this study support those from prior studies that attitude of a person mediates the relationship between entrepreneurship education and entrepreneurial intention. The study adds to the existing body of knowledge by showing that attitude mediates the relationship between entrepreneurship education and entrepreneurial intention.

4.6.4 Entrepreneurship Education, Personality Traits, Attitude and Entrepreneurial Intention

The fourth objective was to determine the joint effect of entrepreneurship education, personality traits and attitudes on entrepreneurial intention. The hypothesis postulated that there is no significant joint effect of entrepreneurship education, personality traits and attitudes on entrepreneurial intention. This hypothesis was tested by multiple regression analysis where entrepreneurial intention was regressed on a combination of all predictor variables (entrepreneurship education, personality traits and attitude) to establish the combined effect of entrepreneurship education, personality traits and attitude on entrepreneurial intention. The results showed that the joint effect of predictor variables on entrepreneurial intention was significant ($R^2 = 0.260$, $F = 27.368$, $p < 0.05$). Hence the hypothesis that there is no significant joint effect of entrepreneurship education, personality traits and attitudes on entrepreneurial intention was rejected.

The findings lend credence to the suggestion that an effective entrepreneurship education program should not only consider course content and pedagogical approaches but also learning environment (Fayolle & Linan, 2014; Hsiao et al., 2016). The findings of this study further lend support to Biggs' (1999) contingency concept termed constructive alignment. In this concept, Biggs (1999) perceives entrepreneurship education as a complex system contingent upon teachers, students, the teaching context, student learning activities and the outcome.

By showing that the joint effect of entrepreneurship education, personality traits and attitudes on entrepreneurial intention is significant and enhances entrepreneurial intention, this study makes valid contribution in lending empirical support to constructive alignment approach to teaching entrepreneurship.

4.7 Summary of Results of Tests of Hypotheses

Test of hypotheses started by testing the direct effect of entrepreneurship education on entrepreneurial intention and the influence of personality traits and attitudes on the relationship. Finally the study tested the combined/joint effect of entrepreneurship education, personality traits and attitudes on entrepreneurial intention. The results fail to accept all the hypotheses of the study. A summary of the results of the tests of hypotheses are presented in Table 4.14.

Hypothesis	Results	Conclusion
H01. Entrepreneurship education does not have significant effect on entrepreneurial intention.	R^2 change = 0.147, positive effect of entrepreneurship education on entrepreneurial intention ($\beta = 0.384$, $t = 6.390$, $p < 0.05$).	H01 Rejected
H02. The effect of entrepreneurship education on entrepreneurial intention is not moderated by personality traits.	Significant change in R^2 after addition of interaction term (entrepreneurship education*personality traits), significant F change (change in $R^2 = 0.217$, F change 21.678, $p < 0.05$)	H02 Rejected
H03. The effect of entrepreneurship education on entrepreneurial intention is not mediated by attitudes	Significant relationship between entrepreneurship education and entrepreneurial intention ($\beta = 0.365$, $t = 6.019$, $p < 0.05$); significant relationship between entrepreneurship education and attitude ($\beta = 0.398$, $t = 6.675$, $p < 0.05$); significant relationship between attitude and entrepreneurial intention ($\beta = 0.434$, $t = 7.398$, $p < 0.05$); Relationship between entrepreneurship education and entrepreneurial intention was still significant when effect of attitude is controlled for ($\beta = 0.343$, $t = 5.502$, $p > 0.05$).	H03 Rejected
H04. Entrepreneurship education, personality traits and attitudes jointly do not have a significant effect on entrepreneurial intention.	Change in R^2 value for joint effect model is significant ($R^2 = 0.260$, $F = 27.368$, $p < 0.05$)	H04 Rejected

Table 4.14: Summary of the Hypotheses Test Results

4.8 Summary of the Chapter

This chapter presented the results of the study. It began by presenting the response rate, assessment of research instruments and regression assumptions. The profiles of the respondents were then presented. This was followed by descriptive statistics, correlation analysis and the tests of hypotheses. Finally, the chapter presented discussion of results of the study. The next and final chapter presents summary, conclusions, implications and recommendations of the study. The next and final chapter presents summary, conclusions, implications and recommendations of the study.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study findings, conclusions, implications and recommendations of the study. The chapter discusses summary of findings regarding the research objectives, hypotheses, and conclusions of the study. Finally, the chapter discusses implications of the study to entrepreneurship education theory and practice; limitations of the study and directions for further research.

5.2 Summary of Findings

The study examined the effect of personality traits and attitudes on the relationship between entrepreneurship education and entrepreneurial intention. The data for the study was collected from 239 students taking diploma in engineering courses in 27 TVET institutions in Kenya. The findings revealed that the majority of students taking diploma in engineering courses were male while the most popular course was Electrical Engineering. Building Construction was the least preferred course. Most of the students were registered in institutions within Nairobi Region while Coast Region had the least registration.

The first objective of the study was to determine the effect of entrepreneurship education on entrepreneurial intention. The findings revealed a positive relationship between entrepreneurship education and entrepreneurial intention. Thus Hypothesis (H01) was rejected. The second objective of the study was to determine the influence of personality traits on the relationship between entrepreneurship education and entrepreneurial intention. Data on the three variables were subjected to hierarchical regression analysis. The results revealed that interaction between entrepreneurship education and personality traits (moderator) explained a significant variance in entrepreneurial intention. The Hypothesis (H02) which predicted that personality trait does not moderate the

relationship between entrepreneurship education and entrepreneurial intention was rejected.

The third objective sought to examine the influence of attitudes on the relationship between entrepreneurship education and entrepreneurial intention. The regression results show that not all the conditions for demonstrating complete mediation were met thereby implying that attitudes partially mediate the effect of entrepreneurship education on entrepreneurial intention. The results fail to support Hypothesis (H03) which predicted that attitude does not mediate the relationship between entrepreneurship education and entrepreneurial intention and the hypothesis was rejected.

The fourth objective of the study sought to determine the joint effect of entrepreneurship education, personality traits, and attitudes on entrepreneurial intention. The corresponding hypothesis (H04) stated that the joint effect of entrepreneurship education, personality traits, and attitudes does not have a statistically significant effect on entrepreneurial intention. The hypothesis was tested using multiple regressions. The regression results showed that the joint effect of entrepreneurship education, personality traits, and attitudes had a statistically significant effect on entrepreneurial intention. Thus, the result failed to support the hypothesis and the hypothesis was rejected.

5.3 Conclusions

The purpose of this study was to determine the influence of personality traits and attitudes on the relationship between entrepreneurship education and entrepreneurial intention of engineering students in TVET institutions in Kenya. The specific objectives of the study were to: determine the effect of entrepreneurship education on entrepreneurial intention; determine the influence of personality traits on the relationship between entrepreneurship education and entrepreneurial intention; examine the influence of attitudes on the relationship between entrepreneurship education and entrepreneurial intention, and determine the joint effect of entrepreneurship education, personality traits, and attitudes on entrepreneurial intention. The findings of the study yielded the following conclusions:

First, entrepreneurship education has an effect on entrepreneurial intention among engineering students in TVET institutions in Kenya. The finding confirms that entrepreneurship education is pivotal in enhancing entrepreneurial intention. Hence effective entrepreneurship education would result in higher levels of entrepreneurial intention.

Second, the results revealed that personality traits moderate the relationship between entrepreneurship education and entrepreneurial intention. This means that if entrepreneurship education is imparted on an individual who possesses particular personality traits, chances that the individual will form entrepreneurial intention will be enhanced.

Third, the results showed that attitudes partially mediate the relationship between entrepreneurship education and entrepreneurial intention. Thus, entrepreneurship education leads to change in attitude which in turn affects one's entrepreneurial intention. Entrepreneurship education is therefore crucial in developing attitude which subsequently leads to entrepreneurial intention.

Fourth, the results suggest that the joint effect of entrepreneurship education, personality traits, and attitude significantly affected entrepreneurial intention. This means that, all other factors held constant, imparting entrepreneurship education to an individual with positive attitude and entrepreneurship related personality traits would lead to higher levels of entrepreneurial intention.

5.4 Implications of the Research Findings and Recommendations

The study was based on theory of planned behavior, personality traits theory, and learning approaches to entrepreneurship education to determine the effect of entrepreneurship education on entrepreneurial intention; determine the influence of personality traits on the relationship between entrepreneurship education and entrepreneurial intention; examine the influence of attitudes on the relationship between entrepreneurship education and entrepreneurial intention, and determine the joint effect of entrepreneurship education, personality traits and attitudes on entrepreneurial

intention. The findings of the study conducted among 239 students taking diploma in engineering courses in 27 TVET institutions in Kenya have various implications for entrepreneurship education and educational policy and practice as explained below.

5.4.1 Implications for Entrepreneurship Education Theory

The study found that entrepreneurship education has a positive effect on entrepreneurial intention among students in TVET institutions in Kenya. This finding supports the arguments in the theory of planned behavior. The theory of planned behavior argues that intentions are usually planned and the planning can be done through exposure to education. A well planned entrepreneurship education process involves relevant course content and appropriate pedagogical approaches to content delivery.

The study further reveals that personality traits moderate the effect of entrepreneurship education on entrepreneurial intention. This finding supports the arguments of personality traits theory. The theory suggests that personality is biologically determined at birth and shaped by a person's environmental experience such as exposure to education. Further, it argues that entrepreneurs possess peculiar traits which distinguish them from non-entrepreneurs. Thus, this study adds to the empirical support of the personality traits theory that interaction of personality traits such as internal locus of control, innovativeness, and need for achievement and entrepreneurship education constructs such as course content and pedagogical approaches results in higher entrepreneurial intention outcomes.

Further, the finding that attitudes partially mediate the effect of entrepreneurship education on entrepreneurial intention implies that there are other indirect effects of entrepreneurship education on entrepreneurial intention which were unmeasured and need to be examined empirically. This is an implication for theory building as it suggests plausibility of additional mechanisms.

An integrated model that examined the joint effect of three variables; entrepreneurship education, personality traits and attitude on entrepreneurial intention was adopted in this study. The finding that the joint effect of the three variables on entrepreneurial intention is positively significant supports the learning approach that integrating various learning

approaches and directing the education to an individual who possesses specific traits enhances positive attitude hence high level of entrepreneurial intention.

5.4.2 Implications for Management Policy and Practice

The study has implications to management policy and practice. First, the study confirmed a positive effect of entrepreneurship education on entrepreneurial intention. This implies that relevant course content and a mixture of effective pedagogical approaches are essential for entrepreneurial intention. Thus, to encourage many students to become entrepreneurs and start own enterprises, institutions need to focus on development of a comprehensive course content and application of a variety of pedagogical approaches in imparting entrepreneurial skills.

Second, the study reveals that personality traits moderate the relationship between entrepreneurship education and entrepreneurial intention. This implies that curriculum developers and course instructors should understand which personality traits enhance entrepreneurial spirit. This will assist them in looking for ways of not only capitalizing on these entrepreneurial traits but also in finding ways of exploiting these traits right from curriculum development point to choice of pedagogical approaches to be used in entrepreneurship skills delivery.

Third, the study reveals that attitude mediates the relationship between entrepreneurship education and entrepreneurial intention. This implies that entrepreneurship education affects entrepreneurial intention through increased positive attitude among the learners. The entrepreneurship education instructors need to identify and emphasize aspects of attitude that can be changed by entrepreneurship education. Entrepreneurship education instructors need to take cognizance of the fact that effective content delivery revolves around an attempt at creating attitudinal change towards entrepreneurship in general.

Finally, the results show that the joint effect of entrepreneurship education, personality traits, and attitude significantly affects entrepreneurial intention. This implies that to enhance entrepreneurial intention among students, entrepreneurship instructors need an integration of entrepreneurship education, appropriate personality traits and positive attitude among students. The educators should therefore appreciate the fact that some

students may be more entrepreneurial than others by exhibiting higher entrepreneurial intention despite the fact that all the students are subjected to a uniform entrepreneurship education curriculum.

5.5 Recommendations for Further Research

This study contributes to the understanding of the relationship between entrepreneurship education and entrepreneurial intention and the effect of personality traits and attitudes on the relationship. However, further research is necessary to address some of the limitations of this study.

The study was a cross sectional survey. A longitudinal study could increase understanding of the influence of contingency factors on relationship between entrepreneurship education and entrepreneurial intention. Future studies may consider employing a longitudinal research design to evaluate the veracity of the intervening role of attitudes and the moderating role of personality traits on the relationship between entrepreneurship education and entrepreneurial intention over time, both at the beginning and at the end of the entrepreneurship education program.

The low variation in entrepreneurial intention explained by entrepreneurship education calls for more research to find out other factors which might also contribute to entrepreneurial intention in TVET institutions and non TVET public institutions of higher learning. Thus, respondents could be drawn from different academic disciplines or different levels of education. Such studies will confirm whether the results of this study can be generalized to other institutions with different contextual conditions. This will further help to identify how different education settings affect entrepreneurship learning and perceptions of students.

Future research could also address the link between nascent entrepreneurial intention and implementation intention. This thesis considered the effect of entrepreneurship education components on entrepreneurial attitudes which in turn determines the intention to create new businesses. The entrepreneurship education was an introductory-level course that focused on awareness education of entrepreneurship which aimed to foster students' entrepreneurial intentions to perform entrepreneurial activities. The intention the students

developed is considered as the nascent intention that may fade out with time. How to transform the “nascent entrepreneurial intention” acquired through an entrepreneurship course into the “implementation intention” and then the start-up action is challenging. The findings of this thesis could be considered as a pointer to the first step in this research journey by providing insight into how to come up with an entrepreneurship education curriculum that would nurture the “nascent intentions” in an effective way.

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APPENDICES

Appendix I: Study Questionnaire

SECTION A: PERSONAL DATA

Region (tick one)

i) Mt. Kenya

ii) Nairobi

iii) Western

iv) North Rift

v) Coast

1 Course: _____

2 Gender: (tick as appropriate)

Female ☐

Male ☐

SECTION B: ENTREPRENEURSHIP EDUCATION

For each of the following statements, please indicate the extent to which you agree that each statement characterizes entrepreneurship education that you have acquired in the institution by ticking ( ) as appropriate where: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Course content

		1	2	3	4	5
		SD	D	N	A	SA
1	The entrepreneurship course increases my understanding of generating innovative ideas					
2	The entrepreneurship course increases my understanding of environmental assessment of entrepreneurial ventures					
3	The entrepreneurship course increases my understanding of					

	financial preparation for entrepreneurial ventures					
4	The entrepreneurship course increases my understanding of planning a business					
5	The entrepreneurship course increases my understanding of market research for entrepreneurial ventures					
6	Entrepreneurship course increases my understanding of attitudes of entrepreneurs (how they view entrepreneurship and why they act)					
7	Entrepreneurship course increases my understanding of importance of entrepreneurship to both society and individuals					
8	Entrepreneurship course increases my understanding of personal characteristics of entrepreneurs (risk taking, innovation)					
9	Entrepreneurship course gives me a sense that entrepreneurship is achievable					
10	Entrepreneurship course increases my understanding of the motives of engaging in entrepreneurial activities (money, self-achievement, and social status)					
11	Entrepreneurship course enhances my ability to develop networks (obtaining useful information from lecturers, guest speakers or classmates)					
12	The creative atmosphere in the entrepreneurship class inspires my entrepreneurial mind					
13	Views of external speakers inspire my entrepreneurial mind					

14	The entrepreneurial experience of the entrepreneurs enhances my understanding of the entrepreneurial process					
15	Entrepreneurship course enhances my skills to develop business plans					
16	Entrepreneurship course enhances my skills to handle an entrepreneurship project					
17	Entrepreneurship course enhances my skills to deal with risks and uncertainties					
18	Entrepreneurship course enhances my skills to allocate resources (e.g. money, personnel, and time)					
19	Entrepreneurship course enhances my ability to identify a business opportunity					

Pedagogical Approaches

20	The instructor frequently gave the class case studies					
21	Guest speakers/lecturers were often invited to give lectures					
22	Group discussions were commonly used during lectures					
23	The lecturer frequently used traditional lecture method					
24	The class would perform role plays to enhance lectures					
25	The lecturer would give the class individual project work					
26	The lecturer would give the class group project work					
27	The lecturer would use real world situations (simulation) in teaching					

28	During the class I had the chance to listen to entrepreneur's field reports (e.g. entrepreneurs' speeches, lecturer's reports).					
29	There were frequent field visits to established businesses					
30	Our lectures were computer based					
31	The class frequently interacted with practicing entrepreneurs					

SECTION C: PERSONALITY TRAITS

For each of the following statements, please indicate the extent to which you agree that each statement characterizes personality traits by ticking ( ) as appropriate where: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

(i) Need for Achievement:

32	I take pleasure in responding to challenges, so competition makes me work harder.					
33	I do not like a well-paid job if I cannot derive a sense of achievement and satisfaction from it.					
34	I want to earn only as much as possible to attain a comfortable way of life.					
35	I do not mind routine, unchallenging work if the pay is good.					
36	When I do something, I see to it that it does not only get done but is done with excellence.					

(ii) Internal Locus of Control:

37	My success depends on whether I am lucky enough to be in the right place at the right time.					
38	To a great extent my life is controlled by accidental happenings.					

39	When I get what I want, it is usually because I worked hard for it.					
40	My life is determined by own actions.					
41	It is not wise for me to plan too far ahead, because things turn out to be a matter of bad fortune.					
42	Whether or not I am successful in life depends mostly on my ability.					
43	I feel that what happens in my life is mostly determined by people in powerful positions.					
44	I feel in control of my life.					
45	Success in business is mostly a matter of luck.					

(iii) Innovativeness:

46	I often surprise people with my novel ideas.					
47	People often ask me for help in creative activities.					
48	I obtain more satisfaction from mastering a skill than coming up with a new idea.					
49	I prefer work that requires original thinking.					
50	I usually continue doing a new job in exactly the way it was taught to me.					
51	I like a job which demands skill and practice rather than inventiveness.					
52	I am not a very creative person.					
53	I like to experiment with various ways of doing the same thing.					

SECTION D: ATTITUDE

For each of the following statements, please indicate the extent to which you agree that each statement characterizes attitude by ticking ( ) as appropriate where: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

(i) **Attitude towards competitiveness**

54	I work harder in situations where my performance is compared against that of others					
55	It annoys me when other people perform better than I do					
	(i) Attitude towards money					
56	If you have a high income, that is a sign that you have had success in your life.					
57	It is important for me to make a lot of money.					
	(ii) Attitude towards change					
58	I find working in stable and routinized environments boring.					
59	I need constant change to remain stimulated, even if this would mean higher uncertainty					
	(iii)Attitude towards entrepreneurship					
60	A career as an entrepreneur is totally unattractive to me.					
61	If I had the opportunity and resources, I would love to start a business.					
62	Amongst various options, I would rather be anything but an entrepreneur.					

63	Being an entrepreneur would give me great satisfaction.					
64	Being an entrepreneur implies more advantages than disadvantages to me.					
65	I would rather be my own boss than a secure job					

SECTION E: ENTREPRENEURIAL INTENTION

For each of the following statements, please indicate the extent to which you agree that each statement characterizes entrepreneurial intention by ticking ( ) as appropriate where: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

	(i) Self-prediction					
66	I am ready to do anything to be an entrepreneur					
67	My professional goal is becoming an entrepreneur					
68	I will make every effort to start and run my own firm					
69	I have got the intention to start a firm some day					
70	I am determined to create a firm in the future					
71	I have very seriously thought of starting a firm					
72	I have got the intention to start a firm some day					
	(ii) Desirability					
73	I desperately want to work for myself					
74	The idea of owning my own business is very appealing to me					
75	I cannot imagine working for someone else					
76	Working in my own business would be very personally satisfying					

Thank you for your help!

Appendix II: List of Public Technical and Vocational Education and Training Institutions in Kenya

Universities

1. Co-operative University College
2. Dedan Kimathi University of Technology
3. Technical University of Kenya
4. Technical University of Mombasa
5. Meru University of Science and Technology

Polytechnics

6. Eldoret National Polytechnic
7. Kisii National Polytechnic
8. Kabete National Polytechnic
9. Kenya Coast National Polytechnic
10. Kisumu National Polytecnhic
11. Kitale National Polytechnic
12. Meru National Polytechnic
13. North Eastern Province National Polytechnic (NEP)
14. Nyeri National Polytechnic
15. Sigalagala National Polytechnic

Technical Institutes

16. Aldai Technical Training Institute
17. Baringo Tecnical College
18. Bondo Technical Training Institute
19. Bumbe Technical Training Institute
20. Bushiangala Technical Training Institute
21. Emining Technical Training Institute
22. Gitwebe Technical Training Institute
23. Godoma Technical Training Institute
24. Kaiboi Technical Training Institute
25. Karen Technical Training Institute
26. Katine Technical Training

27. Keroka Technical Training Institute
28. Technical Teachers College
29. Kiirua Technical Training Institute
30. Kisiwa Technical Training Institute
31. Machakos Technical Training Institute for the Blind
32. Maasai Technical Training Institute
33. Mathenge Technical Training Institute
34. Matili Technical Training Institute
35. Mawego Technical Training Institute
36. Michuki Technical Training Institute
37. Mitunguu Technical Training Institute
38. Kiirua Technical Training Institute
39. Mukurwei-ini Technical Training Institute
40. Musakasa Technical Training Institute
41. Nairobi Technical Training Institute
42. Technical Training Institute
43. Ol Lessos Technical Training Institute
44. P C Kinyanjui Technical Training Institute
45. Rift Valley Technical Training Institute
46. Jeremiah Nyaga Technical Training Institute
47. Shamberere Technical Training Institute
48. Siala Technical Training Institute
49. Thika Technical Training Institute
50. Tseikuru Technical Training Institute
51. Wote Technical Training Institute
52. Sot Technical Training Institute
53. Weru Technical and Vocational College
54. Maasai Mara Technical and Vocational College
55. Ziwa Technical Training Institute
56. Ekerubo Gietai Technical Training Institute
57. Bureti Technical Training Institute

58. St. Josephs Technical Institute for The Deaf-Nyangoma
59. Koshin Technical Training Institute
60. Konoin Technical Training Institute
61. Karumo Technical Training Institute

Institutes of Technology

62. Coast Institue of Technology
63. Friends College Kaimosi
64. Kiambu Institute of Science and Technology
65. Murang'a College of Technology/ Murang'a University
66. Ramogi Institute of Advanced Technology
67. Sangalo Institute of Science and Technology

Source: KUCCPS (2017)

Appendix III: List of Sampled Institutions

	INSTITUTION	Number of students	Sample
1	Thika Technical Training Institute	52	16
2	Masai Technical Training Institute	26	8
3	Nairobi Technical Training Institute	86	27
4	Kiambu Institute Of Science And Technology	88	27
5	Pc Kinyanjui Technical Training Institute	35	10
6	Kenya Coast National Polytechnic	28	9
7	Coast Institute Of Technology	18	6
8	Rift Valley Technical Training Institute	78	24
9	O'lessos Technical Training Institute	24	7
10	Kaiboi Technical Training Institute	18	6
11	Nkabune Technical Training Institute	26	8
12	Jeremiah Nyaga Technical Training Institute	25	8
13	Michuki Institute Of Science And Technology	24	7
14	Nyandarua Institute Of Science And Technology	18	6
15	Mathenge Institute Of Science And Technology	16	5
16	Friends College Kaimosi	52	16
17	Bushiangala Technical Training Institute	18	6
18	Shamberere Technical Training Institute	19	6
19	Kisiwa Technical Training Institute	21	7
20	Ramogi Institute Of Science And Technology	40	12
21	Keroka Technical Training Institute	18	6
22	Mawego Technical Training Institute	24	7
23	Siaya Institute Of Science And Technology	23	7
24	Bumbe Technical Training Institute	13	4
25	Matili Technical Training Institute	21	7
26	Emening' Technical Training Institute	27	8

27	Sang'alo Institute Of Science And Technology	16	5
	Total	855	265

Appendix IV: Invitation to Take Part in a Survey

Dear student,

Re: Invitation to Take Part in a Survey

It has been empirically evidenced that entrepreneurship plays a pivotal role in economic development. Consequently, the government of Kenya has not only repeatedly emphasized the importance of entrepreneurship education, but has also heavily invested in it, especially, in all public TVET institutions. Apparently, we know only a limited amount of knowledge on effect of entrepreneurship education on entrepreneurial intention of students. The aim of this research is to help close this knowledge gap, specifically to explore the effect of personality traits and attitudes on the relationship between entrepreneurship education and entrepreneurial intention.

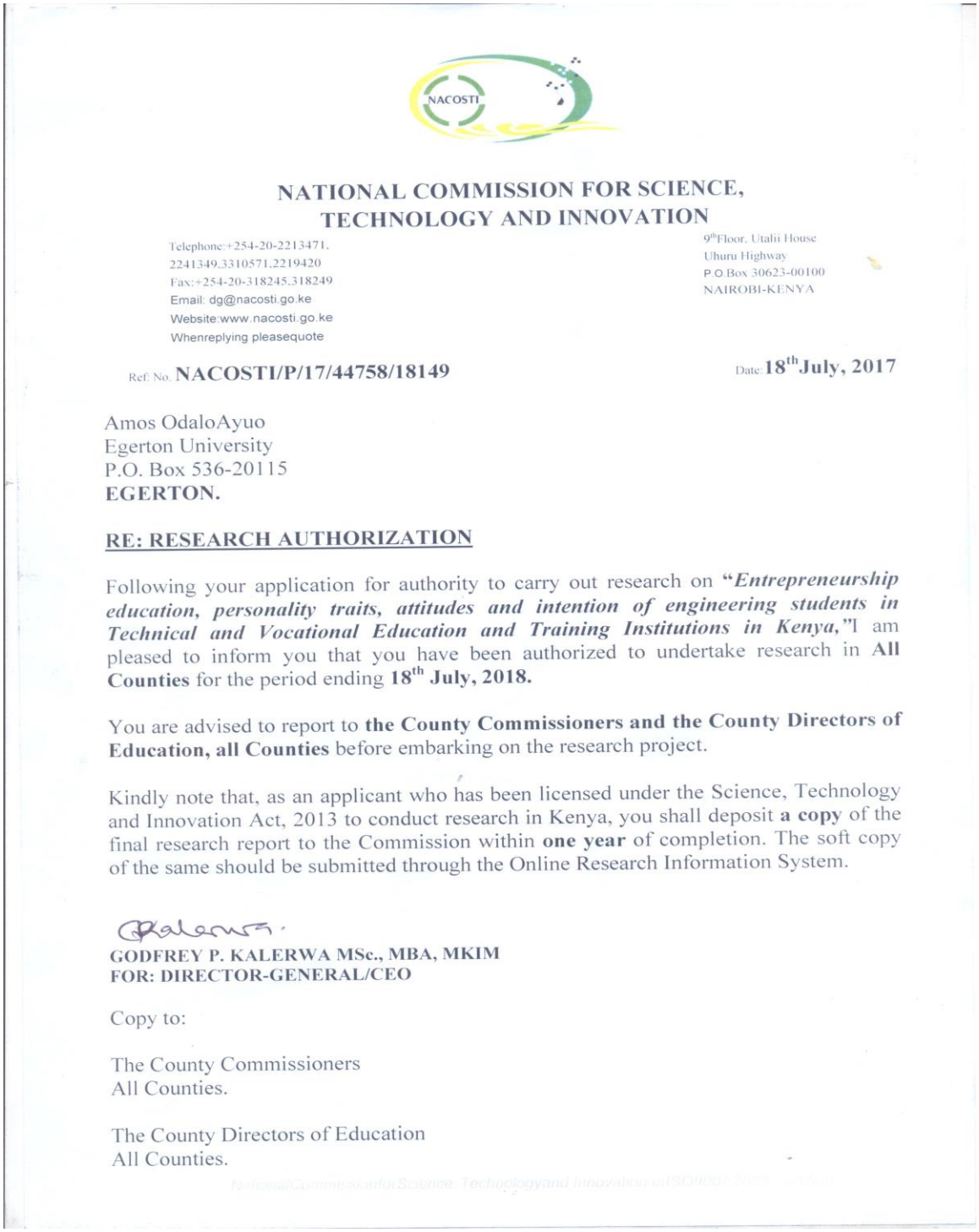
I am writing to invite you to take part in this study by completing the questionnaire. My pretest indicates that you may need approximately 30 minutes to complete the questionnaire. Your responses should be as independent as possible as there are no right or wrong responses. The responses would be invaluable contribution to my study and they are anonymous and confidential. Neither you nor your institution will be identified in any way. The results of the survey will be used for academic purposes only.

Thank you for your time and I appreciate very much your contribution to my PhD study and to our better understanding of entrepreneurship education in Kenya. As a token of appreciation, a summary report will be availed to you online.

Kind regards,

PhD Candidate
Department of Business Administration
Egerton University, Kenya

Appendix V: Research Authorization Letter



NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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Whenreplying pleasequote

9th Floor, Utalii House
Uhuru Highway
P.O.Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/17/44758/18149**

Date: **18th July, 2017**

Amos OdaloAyuo
Egerton University
P.O. Box 536-20115
EGERTON.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Entrepreneurship education, personality traits, attitudes and intention of engineering students in Technical and Vocational Education and Training Institutions in Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **All Counties** for the period ending **18th July, 2018.**

You are advised to report to **the County Commissioners and the County Directors of Education, all Counties** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioners
All Counties.

The County Directors of Education
All Counties.

Appendix VI: Research Permit

THIS IS TO CERTIFY THAT:
MR. AMOS ODALO AYUO
of EGERTON UNIVERSITY, 0-20100
NAKURU,has been permitted to conduct
research in *All Counties*

on the topic: *ENTREPRENEURSHIP EDUCATION, PERSONALITY TRAITS, ATTITUDES AND INTENTION OF ENGINEERING STUDENTS IN TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING INSTITUTIONS IN KENYA*

for the period ending:
18th July,2018

.....
Applicant's Signature

Permit No : NACOSTI/P/17/44758/18149
Date Of Issue : 18th July,2017
Fee Recieved :Ksh 2000

.....
Director General
National Commission for Science, Technology & Innovation

CONDITIONS

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No.A 15040

CONDITIONS: see back page

Appendix VII: Map of Kenya