

The Role of Entrepreneurship Education on Student Entrepreneurial Intentions: Mediating Effect of Attitude, Subjective Norms, and Perceived Behavioral Control

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Abstract

Purpose – The effect of entrepreneurship education (EE) in universities has been recognized as one of the important factors that help students to understand and foster an entrepreneurial mindset. Hence, this study examined EE's role in entrepreneurial intentions and its antecedents. Besides, it tested the mediating role of the antecedents of entrepreneurial intentions based on the theory of planned behavior (i.e., attitude toward entrepreneurship, subjective norm, and perceived behavioral control) in the causal relationship between EE and entrepreneurial intentions.

Method – A cross-sectional survey was conducted with a sample size of 335 regular undergraduate graduating classes of 2018 students who had taken the entrepreneurship course in four universities (both public and private) founded in Ethiopia. The standardized instrument was adopted from a previous study based on a seven-point Likert scale ranging from strongly disagree to strongly agree. And confirmatory factor analysis was performed to confirm the reliability and validity of the constructs. Then hypotheses were tested by path analysis using structural equation modeling software.

Findings – The results showed that EE positively and significantly influences entrepreneurial intentions and their antecedents and that all antecedents of entrepreneurial intentions (attitude toward entrepreneurship, subjective norm, and perceived behavioral control) partially mediate between EE and entrepreneurial intentions.

Limitations – The present study focused on primary cross-sectional data collected from a limited sample of regular undergraduate students at only four universities in Ethiopia. Thus, longitudinal data that inculcate more sample size to investigate the long-term effect

of mediators on EE-entrepreneurial intentions relationships with more variables suggested for further research.

Implications – The research findings are useful for academicians and policymakers. The study suggested that antecedents of entrepreneurial intentions serve as predictor variables and mediate the relationship between EE and entrepreneurial intentions, consistent with the theory of planned behavior. Also, there is strong evidence urging Ethiopian universities to strengthen EE through entrepreneurial initiatives, programs, and projects to produce more entrepreneurial-minded graduates engaging in business startup activities after graduation.

Originality – Using antecedents of entrepreneurial intentions as mediator variables has been unexplored so far. Hence, the present study introduces a new way of researching entrepreneurial intentions and taking antecedents of entrepreneurial intentions as a mediator in the causal relationship between EE and entrepreneurial intentions.

Keywords: entrepreneurship education; entrepreneurial intentions; theory of planned behavior; and Ethiopia.

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Introduction

Nowadays, entrepreneurship plays a profound role in socio-economic development worldwide (Fayolle, Gailly, & Lassas-Clerc, 2006; Stamboulis & Barlas, 2014). As a result, governments in every country should nurture and develop entrepreneurship. Entrepreneurship is nurtured via entrepreneurship education (EE) and training (Jwara & Hoque, 2018). Entrepreneurship education is one aspect of education that familiarizes learners with entrepreneurial attributes and competencies; and creates in person the attitude to take risks of creating an enterprise by applying knowledge, skills, and attitude obtained from learning (Nwosu & Ohia, 2009). Entrepreneurship education can be included in the curriculum and designed as a program that provides students with the necessary knowledge, skills, and attitudes to set up their enterprise after graduation (Ekpoh & Edet, 2011; Keat, Selvarajah, & Meyer, 2011). According to Davidsson (2004), EE has become a prominent field of study, especially in developed nations. This field has emerged from multiple disciplines such as Management, Economics, Education, Psychology, and Technical studies (Othman, Hashim, & Ab Wahid, 2012; Fayolle *et al.*, 2006). Entrepreneurship education is growing worldwide since it is vital for nurturing

the entrepreneurial spirit (Katz, 2003). Entrepreneurship courses focusing on theoretical and practical knowledge and skills seem to be an effective means of promoting entrepreneurship (Nyakudya, Simba, & Herrington, 2018). Thus, the Ethiopian government emphasizes EE since graduate unemployment has been a serious issue in the country. As a result, the Education Development Roadmap of Ethiopia (2018-2030) urges higher education institutions to give attention to entrepreneurship and entrepreneurial development that would enable graduates to be self-employed rather than job seekers.

The increment of the unemployment rate has been a worldwide phenomenon. Even though its extent differs from country to country due to economic development and job culture, it remains a problem everywhere (ILO 2020; Matsumoto *et al.*, 2012). It is severe in developing countries like Ethiopia due to their economic backwardness and low job culture (Kibret, 2014; Dale, 2014). African Center for Transformation (2016) report revealed that 50% of graduates of higher education institutions have no jobs in Africa. Ethiopia is the second-most populous country in Africa, next to Nigeria, suffering from youth unemployment (Asmare & Mulatie, 2014). In Ethiopia, a decade ago, a university degree was a guarantee for employment in either public or private or non-governmental organizations, but students and their families/guardians still hold this view despite that the reality has been completely changed. Since higher education institutions and graduates dramatically increase, a university degree does not guarantee employment. Nowadays, it is common to see university graduates who have been jobless for two years or longer in Ethiopia. The average duration of the unemployment period in urban Ethiopia was longer than one year (Serneels, 2004). From 2009 to 2014, a survey on employment and unemployment was conducted by the central statistical authority (CSA) of Ethiopia and found that the overall unemployment rate is higher than illiteracy. For instance, a recent survey in Addis Ababa, the capital city of Ethiopia, indicates that there are 135,000 unemployed people in the city, 20,000 of whom are university graduates (Bereket, 2017). This number is higher in the country where the tertiary school enrollment rate was 8.1% in 2014, according to a World Bank report of 2019. The same or worse scenario exists now in all country's regional states since there are much fewer job opportunities than in the capital city.

Though many scholars had suggested that entrepreneurship was one of the career options to alleviate unemployment for youth and university graduates (Beek & Rimmington, 2011; Buang, 2011), entrepreneurship development is still in its infancy in Ethiopia (Mudde *et al.*, 2015). For instance, Ethiopia's Global Entrepreneurship Index of 2019 was 18.3% and ranked 110th among 137 countries in total entrepreneurial activities. Li *et al.* (2003) stated that countries with higher entrepreneurial initiative indexes were more likely to create job opportunities, but the Ethiopian index has been very low and could not reduce unemployment rates. Thus, in Ethiopia, considering entrepreneurship as a career option is a less preferred alternative among highly trained/educated human resources (Hailay, 2007), including those who take an entrepreneurship course during their study period. Previously, a few studies have reported entrepreneurial intentions

and their antecedents in Ethiopia (e.g., Buli & Yesuf, 2015; Tessema Gerba, 2012; Ayalew & Zeleke, 2018; Amha, Woldehanna, Tamrat, & Gebremedhin, 2015), but none has examined the role of EE on entrepreneurial intentions of university students and its antecedents. Moreover, the present research is unique in testing the mediating effect of antecedents of entrepreneurial intentions (attitude towards entrepreneurship, subjective norms, and perceived behavioral control) for the causal relationship between EE and entrepreneurial intentions extending the theory of planned behavior (TPB).

According to TPB (Ajzen, 1991), attitude towards entrepreneurship (ATE), subjective norms (SN), and perceived behavioral control (PBC) had a predicting power on intentions. And much extant literature has confirmed that these variables have a significant and positive influence on entrepreneurial intention (EI) (Malebana, 2014; Iakovleva, Kolvereid & Stephan, 2011). Consequently, the intention is considered the best single predictor of actual behavior (Luthje & Franke, 2003; Sun & Wei, 2011; Yar Hamidi, Wennberg, and Berglund, 2008). Based on such empirical evidence, entrepreneurship involves the activities of human beings and their intentions to start up a new venture. In other words, business organizations cannot incredibly emerge; there must be an individual commitment, dedication, and determination behind its formation and existence. To be an entrepreneur does not come by chance; it is an individual thought of direction of creating a business venture (attitudes), perception of socially acceptable endeavor by people around them (subjective norms), and perception of the creation of the new venture within one's own competence and capacity (perceived behavioral control). Indeed, venture creation, action, or behavior is unlikely to occur without intention (Owoseni & Akambi, 2010). The intention is the burning point for the actual behavior to happen.

The previous empirical evidence found that EE enhances entrepreneurial activities based on a systematic review of the literature (Pittaway & Cope, 2007). However, the current research is based on primary data collected from students. Other evidence indicated that EE did not always enhance entrepreneurial activities (Farhangmehr, Gonçalves, & Sarmiento, 2016), but the present study's findings were methodologically different. For instance, EE was used as a moderator, and data were collected from both graduate and undergraduate students. But in the current study, EE is taken as an exogenous variable, and data were collected only from undergraduate students. Therefore, such existing differences in extant literature deemed the present study. Besides, previous literature confirmed the impact of these antecedents on EI (see Izquierdo & Buelens, 2011; Engle *et al.*, 2010; Krueger *et al.*, 2000). But there is a gap in how the antecedents of EI are developed and nurtured; and whether antecedents play a mediating role between EE and EI. However, the effect of EE on EI was underexplored (Pittaway & Cope, 2007; von Graevenitz, Harhoff, & Weber, 2010).

Moreover, there is a lack of research in developing countries into the effect of EE on EI (Pfeifer *et al.*, 2016). Thus, to fill this gap, the present study investigates the role of

EE on EI and its antecedents. In addition, it tests whether antecedents of EI of the TPB (i.e., ATE, SN, & PBC) mediate the relationship between EE and entrepreneurial intentions (EIs). The primary data are collected from selected undergraduate students in four universities of Ethiopia.

Therefore, this research has the following contributions. Firstly, this study aims to examine the effect of EE on ATE, SN, & PBC, and EIs. Its findings could enable the Ministry of Sciences and Higher Education (MoSHE) of Ethiopia to standardize and improve attention given to EE in the universities. Secondly, the effect of ATE, SN, & PBC on EIs from low-income country context is tested by using TPB that was scant in empirical evidence. Thirdly, this study has tested the mediating effect of ATE, SN, & PBC in the causal relationship between EE and EIs, extended TPB by adding EE as an exogenous variable, and used antecedents of EIs as mediators. Such findings, in turn, inform MoSHE, universities, educators, and policymakers of the role of EE on EIs development and its antecedents for future policy design, initiatives, programs, and projects that would foster and nurture entrepreneurship development in Ethiopian universities.

The remaining part of this article is structured as follows. The next section discusses the theoretical and empirical review of literature upon which the hypotheses and conceptual framework are formulated. Then, the study's methodology includes research philosophy and approach, sample, instrument development procedure, reliability and validity of the instrument, data analysis, and ethical consideration. After that, the results are presented and followed by discussions. The last section comprises conclusions, limitations, and recommended future research.

Review of Literature and Conceptual Framework

This section reviews the theoretical and empirical literature related to EE, EIs, the antecedents, and the mediating role of the antecedents. Based on this review, hypotheses were formulated, and the conceptual framework that guided this study was developed.

Entrepreneurship education and its effect on EIs and its antecedents

Whether entrepreneurs are born or made has been debatable for a long time. But currently, many scholars argue that entrepreneurs can be made and that entrepreneurial knowledge, skills, and attitude could be taught (Low, 2011; Volery & Mueller, 2006; Nian *et al.*, 2014; Woollard *et al.*, 2007). Raposo and Paco (2011) also said that entrepreneurship is neither magic nor generic, but it is a discipline that can be learned. Based on this argument, EE is included in the curriculum of higher education institutions as a program and/or course. Moreover, the concept of EE is nebulous and defined by different scholars. For instance, Lo (2011) defined it as a process through which entrepreneurial knowledge, skills, and attitude are taught so that students can scan the existing business opportunities

in their environment. Kourilsky (1995) elucidated that EE was characterized by opportunity recognition, firm creation, and resource allocation, taking the accompanying risks. Samwel Mwasalwiba (2010) defined EE as a process through which learners' entrepreneurship attitudes, behavior, values, and/or intentions develop. In this study, we define EE as one aspect of education that familiarizes learners with entrepreneurial attributes and competencies and creates in them the attitudes to take risks of creating an enterprise by applying knowledge, skills, and attitude obtained from learning (Fatoki, 2010; Nwosu & Ohia, 2009). Entrepreneurship education is inevitable in the socio-economic development of a nation since it fosters entrepreneurship (Levie & Autio, 2008). It creates awareness about entrepreneurial activities as a career option and fosters innovation. That is why EE has attracted the remarkable attention of policymakers and educators globally. To date, higher education institutions have also taken as their mandate area to teach, train, conduct research, and consult on it. Providing quality education for entrepreneurship enables a country to achieve greatness and ensure socio-economic development (Alufohai, 2014).

Entrepreneurial education is a model for changing knowledge, skills, attitudes, and motives, promoting responsibility and entrepreneurial thinking (Jwara & Hoque, 2018). It allows students to get the knowledge and skills needed to start and grow their own business in the future (Woollard *et al.*, 2007; Low, 2001, Trivedi, 2017). According to Deakins *et al.* (2005), the main purpose of EE is to help foster an entrepreneurial culture among students to improve their career choices towards entrepreneurial activities. Olakitan (2014) conducted the research in Nigeria and found a positive relationship between EE, the development of self-efficacy, and entrepreneurial intent. Liñán (2004) has recommended that EE delivered to students could strengthen the intention to become an entrepreneur. Universities are currently emphasizing EE to change attitude, subjective norms, and perceived behavioral control of students and, in turn, enhance EIs of students as confirmed by previous researchers (Ekpoh & Edet, 2011; George *et al.*, 2008; Keat, Selvarajah, & Meyer, 2011). Though educational institutions' orientation is influenced by students' career interests, choices, and actions (Porter, 2006), entrepreneurship is still in its early development phase and concentrated mostly in business schools in the Ethiopian universities. But now, it extends to engineering and technology, agriculture, applied sciences colleges. Entrepreneurship promotion centers are also scarce at the country level. Though there is a clear policy on entrepreneurship teaching in Technical and Vocational Training Centers, there is no clear and universal policy regarding EE in universities in Ethiopia. The link between EE and EI and its antecedents is generally under-researched in Ethiopia. The country thus needs to integrate entrepreneurship into the curricula while establishing centers of entrepreneurial excellence (Tessema Gerba, 2012). To upscale the existing EE, it is worth knowing about the contribution of the existing EE for the students who have been taking the course of entrepreneurship. Hence, this study focuses on bridging this gap from the Ethiopian context by investigating EE's effect on entrepreneurial intention and its antecedents.

According to Popescu *et al.* (2016), one's performance depends on attained education level. Even though whether entrepreneurial characteristics can be learned through education or not is debatable, educational institutions can promote the attributes associated with successful entrepreneurship (Maresch *et al.*, 2016). Gorman, Hanlon, and King (1997) conducted a ten-year extensive review of the literature and then concluded that most empirical studies have indicated the principles of entrepreneurship and that being an entrepreneur is teachable or can be encouraged by EE. The influence of EE in a higher education institution has been recognized as one of the important factors that help students understand and foster an entrepreneurial attitude (Peterman & Kennedy, 2003; Kourilsky & Walstad, 1998).

Entrepreneurial education is based on the argument that exposure to certain educational and entrepreneurship-related pedagogies can contribute to developing motivation, knowledge, and skills that favor the decision to become an entrepreneur/self-employed. Numerous scholars have discovered that exposure to entrepreneurial education significantly increases participants' EIs (Luthje & Franke, 2003; Fayolle *et al.*, 2006; Pittaway & Cope, 2007; Zhao *et al.*, 2005). Hattab (2014) and Ibrahim *et al.* (2015) confirmed a significant association between EE and EIs. The effectiveness of EE is measured by its contribution towards EIs and its antecedents (Murugesan & Jayavelu, 2015; Pickernell *et al.*, 2011). However, there is also empirical evidence that EE has no significant effect on entrepreneurial intention and its antecedents (see Farhangmehr, Gonçalves, and Sarmiento, 2016; Gurel, Altinay, & Daniele, 2010; Mahendra, Djatmika, & Hermawan, 2017). From such inconsistent empirical evidence, it is impossible to say that EE programs improve students' entrepreneurial thinking and skills. Those students who had the chance to take an entrepreneurship curriculum in any field of study may not have a high probability of becoming nascent entrepreneurs after graduation. Therefore, there are contrary findings on the effects of EE on EI and its antecedents. To test the significance of these effects, the following hypotheses are postulated in the present study:

H1a: *Entrepreneurship education positively influences students' entrepreneurial intentions.*

H2a: *Entrepreneurship education positively influences students' attitudes towards entrepreneurship.*

H3a: *Entrepreneurship education positively influences students' subjective norms.*

H4a: *Entrepreneurship education positively influences students' perceived behavioral control.*

The effect of antecedents on EIs

EIs have psychological nature. Psychologists have confirmed that intentions are the best estimators of any planned behavior, particularly when the behavior is difficult to observe within a given time (Krueger *et al.*, 2000). According to Amanamah,

Acheampong, and Owusu (2018), it refers to the determination and motivation of a person to create a new business venture, which can be affected by personal traits and the environment in which an entrepreneur is intended. Various researchers have defined intentions as a predictor of becoming an entrepreneur and approved that it is the most immediate antecedent of a given behavior. Bird (1988) defines intention as the state of mind taking a person's attention and action towards certain behaviors. Wu and Wu (2008) and Wilson *et al.* (2009) stated entrepreneurial intention as an individual's state of mind towards creating a new venture.

The intention to initiate business activities is the antecedent of real engagement in creating one's own business enterprise (Fayolle *et al.*, 2006), and the intention is regarded as a single best predictor of actual behavior (Ajzen, 1991). EIs are therefore pivotal for a better understanding of entrepreneurial behavior in the process of discovering, creating, and exploiting opportunities in the environment. Entrepreneurial activity cannot happen overnight; rather, it is a planned, conscious thought that can be realized after developing an intention. Among the existing theories on intentions, the TPB is commonly used as a framework to explain intentions (Ajzen, 1991; Ajzen & Fishbein, 2005). According to the TPB, the three antecedents of EIs are attitudes towards behavior (i.e., do I want to do it?), subjective norms (i.e., do other people want me to do it?), and perceived behavioral control (i.e., do I perceive I am able to do it). Using this theory, many scholars have tried to predict students' EIs in different countries (Miranda *et al.*, 2017; Nguyen, 2017). Liñán and Chen (2009) revealed that TPB is the most widely used theory to study EIs. Thus, this theory is preferable over others in studying students' EIs. The EIs are closely linked to attitudes towards entrepreneurship, subjective norms, and perceived behavioral control (Fretschner & Webber, 2013). Therefore, entrepreneurial intention plays a significant role in enhancing entrepreneurial action and business creation practices. But this might change from place to place due to socio-cultural differences. Therefore, in the current paper, testing the ability of the TPB to predict students' EIs could assist in the efforts in promoting entrepreneurship development. Moreover, it helps to know how each factor influences students' EIs in Ethiopia.

Attitude towards entrepreneurship (ATE) - is the extent to which an individual evaluates an entrepreneurial activity or action to be helpful or not. Douglas and Shepherd (2002) have found that a highly positive attitude towards risk and independence leads to stronger EIs. The study conducted by Izquierdo and Buelens 2011 has found that attitude towards entrepreneurial activities positively affects the intentions to create new ventures. A positive attitude towards entrepreneurship indicates that students favor an entrepreneurial career more than organizational employment (Galloway & Brown, 2002; Kolvereid, 1996; Miranda *et al.*, 2017; Nguyen, 2017; Yang, 2013). Jwara and Hoque (2018) have found that producing graduates with limited knowledge, skills, and attitude about entrepreneurship is a waste of time and money. However, Zhang, Wang, and Owen (2015) found that attitude does not affect EIs. Therefore, such inconsistent results confuse HEIs on changing the mindset of their graduates towards an entrepreneurial career

through EE. Besides, the extent to which attitude toward entrepreneurship influences EIs needs further investigation in the Ethiopian context. Thus, the present study investigates the effect of ATE on students' EIs.

Subjective norm (SN) - refers to an individual perception of the social pressure for or against performing certain behaviors (Ajzen, 1991). It demonstrates social factors which influence a person's actual behavior of carrying out a certain entrepreneurial activity (Mohammed *et al.*, 2017; Krueger *et al.*, 2000). Moreover, social norms are influenced by external variables. Although individuals tend to plan their behavior, they still consider the influence of surrounding pressures such as families, friends, neighborhoods, classmates, and role models (Crandall, Eshleman, & O'Brien, 2002). Thus, perception of societies (social norms) impacts one's decision regarding the entrepreneurial career. But there are inconsistent extant empirical findings regarding the effect of subjective norms on EIs. For example, some evidence reckoned that SN positively affects EIs (Engle *et al.*, 2010; Iakovleva & Kolvereid, 2009; Zhang *et al.*, 2015). However, others elucidated that SN had no significant direct effect on EIs (Liñán & Chen, 2009; Huda *et al.*, 2012; Nguyen, 2017; Khuong & An, 2016). And others indicated that SN harms EIs (Maresch *et al.*, 2016; Shook & Bratianu, 2010). In countries like Ethiopia, where being a white-collar after graduation from university is accustomed, the influence of social norms to become an entrepreneur is expected. Thus, to support or refute the existing empirical evidence, the impact of SN on EIs needs further research.

Perceived behavioral control (PBC) - is related to self-efficacy, which focuses on the individual perception towards the simplicity and/or complexity of behavior or perceived ability to implement certain behavior (Ajzen, 1991; Bandura, 1997). Perceived behavioral control refers to one's beliefs towards various factors associated with the issues and could ease them or not to perform certain activities (Yean *et al.*, 2015; Engle *et al.*, 2010). It simply means the perceived ability of a person to participate in entrepreneurial activities. According to Krueger *et al.* (2000), in the field of entrepreneurship, entrepreneurial perceived behavioral control has been proved as a remarkable predictor of entrepreneurial intention and supported by literature (see Karimi *et al.* 2016; Krrueger *et al.*, 2000; Bux, 2016; Sesen, 2012). However, there are findings that PBC does not affect EIs (see Yap, Othman, & Wee, 2013; Engle *et al.*, 2010; Zhang *et al.*, 2015). Besides, the influence of perceived behavioral control on EIs was under-researched in the Ethiopian context. These urge us to test the effect of PBC on EIs.

Therefore, relying on inconsistent empirical evidence and the scarce studies from Ethiopia on the efficacy of antecedents of EIs based on TPB (i.e., ATE, SN, and PBC), we have formulated the following hypotheses:

H5b: *Attitude towards entrepreneurship positively influences students' entrepreneurial intentions.*

H6b: *Subjective norms positively influence students' entrepreneurial intentions.*

H7b: Perceived behavioral control positively influences students' entrepreneurial intentions.

The mediating role of antecedents of EIs

The mediating effect exists when a new third variable/construct intervenes between two causally related variables. It highlights the distinction between direct and indirect effects. Its direct effects are the relationship between two constructs with a single arrow, and the indirect effects are via other intervening variables between exogenous and endogenous variables (Hair *et al.*, 2019). Entrepreneurship, EE, and EIs are widely researched nowadays. The TPB is widely used as a theoretical foundation in studying EIs and actions. That means the effect of attitude towards the behavior, subjective norms, and perceived behavioral control on EIs (Ajzen, 1991; Krueger *et al.*, 2000). But there were limited studies that take the predictors of EIs as a mediating variable between EE and EIs. For example, the study conducted in Malaysia on public university students has proved perceived behavioral control and subjective norms are significant mediators in relationships between individual entrepreneurial orientation and EIs (Awang *et al.*, 2016). In this case, even the exogenous variable used was entrepreneurial orientation and not EE. Oyugi (2015) conducted research in Uganda on the mediating effect of self-efficacy on the relationship between EE and EIs of university students and found that self-efficacy partially mediated the relationship. Rengiah and Sentosa (2016) found that ATE mediates the causal relationship between EE and EIs. Therefore, this study fills the gap in current literature applying the mediating role of antecedents of EIs (ATE, SN, and PBC) on the relationship between EE and EIs from the Ethiopian context. Thus, the following hypotheses were posed in the current study:

H8c: Attitude towards entrepreneurship mediates the relationship between entrepreneurship education and students' entrepreneurial intentions.

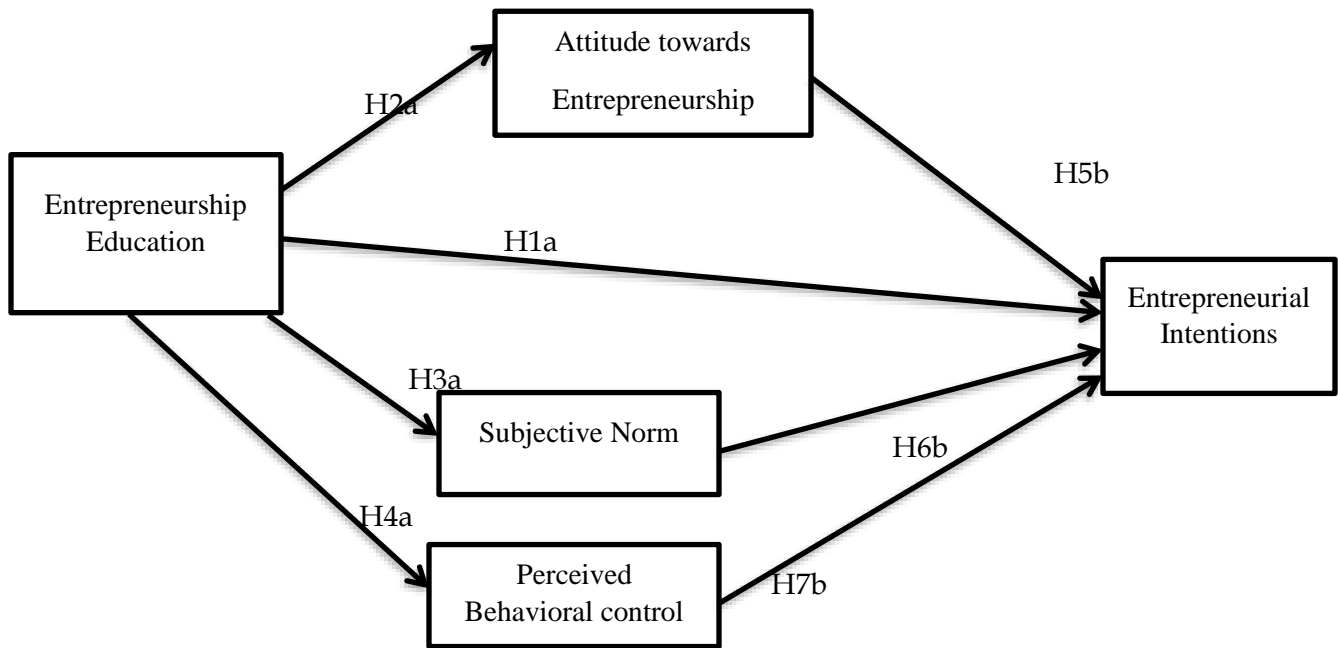
H9c: Subjective norms mediate the relationship between entrepreneurship education and students' entrepreneurial intentions.

H10c: Perceived behavioral control mediates the relationship between entrepreneurship education and students' entrepreneurial intentions.

Conceptual Framework

This study extends TPB by adding a new exogenous variable. Thus, the model below (Figure.1) revealed that EE is considered an exogenous variable that directly and indirectly influences attitude towards entrepreneurship, subjective norms, perceived behavioral control, and EIs. Thus, this research investigates the effect of EE on the antecedents of EIs (attitude toward entrepreneurship, subjective norms, and perceived behavioral control), their effect on EIs, and the mediating role of the antecedents of EIs in the predictive relationship between EE and EIs of university students in Ethiopia. Hence,

this model adds values to the previous models in three ways. First, it explores the effect of EE on EIs and the antecedents. Second, it examines the effect of antecedents of EIs on EIs in a country with a low income. Third, it examines whether the antecedents of EIs play a mediating role in the relationship between EE and EIs. This mediation has not been tried so far by any researcher. As a result, the present research extends the TPB.



Source: Adapted from Ajzen's (1991).

Figure 1: Conceptual model and hypothesized relationship

Methodology of the Study

Research Philosophy and Approaches

According to Bajpai (2011), research philosophy portrays the source, nature, and knowledge development. It reflects the assumptions taken by the researcher in investigating the phenomenon. In business studies, usually, there are four main research philosophies: pragmatism, positivism, realism, and interpretivism (Guba & Lincoln, 1994). The current study uses positivism research philosophy since the researchers and the phenomenon under investigation are separate and independent. Besides, highly structured instruments, large samples, and quantitative data were used. The role of researchers is to collect and interpret data objectively. As a result, the findings are observable and quantifiable using statistical parameters. Crowther and Lancaster (2008)

have stated that research following positivist philosophy adopts the deductive approach as a general rule. The present research approach is deductive since it focuses on testing and validating theories about how and why phenomena occur (Johnson & Onwuegbuzie, 2004). Sekaran and Bougie R. (2013) argued that the deductive approach was to test theories through fixed, predetermined research design and objective measures. In addition, the TPB has been used as a theoretical framework to develop hypotheses tested in a low-income country, Ethiopia. In a nutshell, this research is best served with the positivist research philosophy and deductive research approach.

Sample

This research has employed the explanatory research design to test the causal relationship among variables using the structural equation model (SEM) as hypothesized above (See Figure 1). The SEM approach was used because the relationship is complex and includes multiple-item latent constructs. For instance, one exogenous variable (EE) includes sixteen items and four endogenous variables; ATE, SN, PBC, & EIs include seven, six, seven, and seven items, respectively. Hence, investigating the direct, indirect, and total effect of each antecedent and the overall explanatory power of the model covariance simultaneously based on SEM is helpful (Hair *et al.*, 2019).

The population of this study consisted of graduating class of 2018 regular undergraduate students of four universities in Ethiopia. That is, students who had taken the entrepreneurship course in these three public universities (i.e., Haramaya University, Madda Walabu University, and Mettu University) and one private university (i.e., Rift Valley University) were considered since we wanted to investigate the role of EE on EIs and its antecedents and the mediation effect of antecedents in the relationship between EE and EIs. The sample size was determined based on Yamane's (1967) formula, and then stratified sampling was adopted to select the participants. The size of participants for each higher education institution was determined using proportionate stratified sampling. Accordingly, 152 are from Rift Valley University (Private University) and 183 from public universities (69 from Haramaya University, 51 from Madda Walabu University, and 63 from Mettu University). The sample respondents are students from multidisciplinary fields of study, such as business and economics, agriculture, engineering and technology, social sciences, and humanities. Hence, the findings are generalizable in Ethiopia since an adequate sample size and random selection of participants from different fields of study were used. The background of students who participated in the current research revealed that 213 (63.6%) were males and the remaining 122 (36.4%) were females, which is in line with the gender composition of students in Ethiopian universities. The average age of the respondents was 23.77 with a standard deviation of 3.44, and 202 had a rural birthplace (60.3%) and 133 (39.7%) urban areas.

Instrument Development Procedure

The source of data for this study was primary. Self-administered questionnaires were given face to face during class with the aid of class representatives to select students randomly. The process of constructing a questionnaire is essential to collect reliable and valid data from respondents. Hence, the purpose of the research, layout, length, wording, and appearance have been taken into account (Wilson, 2014; Sekaran & Bougie, 2013). For this purpose, the researchers adopted the Entrepreneurial Intention Questionnaire (EIQ) developed by Liñán (2005). Besides, EE questions adopted came from the questions developed by Luthje and Franke (2003) and Qi (2017). The items were measured using a 7-point Likert scale, varying from 1 (strongly disagree) to 7 (strongly agree). The entire construct used was the latent variable and measured with several questions. Accordingly, the entrepreneurial intention is an endogenous variable that was measured through 7 questions, attitude towards entrepreneurship measured through 7 questions, social norms measured through 6 questions, perceived behavioral control measured through 7 questions, and EE measured through 16 questions (See Table 1)

Reliability and Validity of the Instrument

The instrument used in the current study was tested for reliability and validity by using Cronbach alpha coefficient, composite reliability (CR), and the average variance extracted (AVE). As depicted in Table 1, the alpha coefficient is 0.855 for subjective norms, 0.928 for perceived behavioral control, 0.929 for EIs, 0.943 for attitude towards entrepreneurship, and 0.953 for EE. All of them are greater than the 0.70 threshold suggested by Nunnally (1978) and George & Mallery (2003). The CR and AVE are also greater than 0.70 and 0.50, respectively, satisfying the minimum required level (Fornell & Larcker, 1981; Bagozzi and Yi, 1989; Hair & Lukas, 2014). The results of CR explain that the measurement models of all constructs used in the present study reach the required level of internal consistency between their indicators. And the results of convergent validity indicated there is a good degree of correspondence between the latent variables and their indicators.

Table 1: Cronbach alpha (α), composite reliability and average variance extracted

Construct	No. of Items	Cronbach Alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Entrepreneurship Education	16	0.953	0.953	0.558
Attitude towards entrepreneurship	7	0.943	0.943	0.704
Subjective norms	6	0.855	0.854	0.502
Perceived behavioral control	7	0.928	0.924	0.635
Entrepreneurial intentions	7	0.929	0.930	0.657

According to Kline (2010), a set of variables were presumed to measure different constructs showing discriminant validity if their intercorrelations are not too high. In other words, it indicates that if two measures should not be related are not related. That means discriminant validity exists if the AVE of each construct used in the study is greater than the squared correlation between constructs. According to Chin (1998), the AVE results can also help assess the existence of discriminant validity by calculating the square root of the AVE and comparing them with the correlations among the latent variables. In other words, discriminant validity exists if the square root of the AVE is greater than the correlations among the latent variables; an indication of more variance is shared between the latent variable and its own set of items than with other latent variables represented with another set of items. The present study also confirmed that the square root of AVE for each construct was greater than the correlations between the latent variables (see Table 2 below). Before SEM was applied, confirmatory factor analysis was done and confirmed that the model fit with Chi-square (X^2) =1323.732, X^2/DF =1.591 GFI=0.846, CFI=0.954, and RMSEA=0.042 (See Browne & Cudeck, 1993; Chau & Hu, 2001; Kline, 2010; Hair *et al.*, 2019). Thus, each variable had good reliability and validity and a satisfactory model's goodness-of-fit that allowed structural equation modeling analysis.

Table 2: Model discriminant validity measures

Construct	Attitude towards entrepreneurs hip	Subjective Norms	Perceived behavioral control	Entrepreneurial Intentions	Entrepreneurs hip Course Contribution
Attitude towards entrepreneurs hip	0.839*				
Subjective Norms	.382**	0.709*			
Perceived behavioral control	.487**	.512**	0.797*		
Entrepreneurial Intentions	.503**	.469**	.608**	0.811*	
Entrepreneurs hip Course Contribution	.485**	.402**	.490**	.526**	0.747*
** $p < 0.01$ level (2-tailed).					
* indicates the square root of Average Variance Extracted (AVE) and others are correlations of each construct					

Finally, we check if common method bias exists in the data set due to measurement errors or researchers' or respondents' bias. Harman's single factor test was used to check common method variance in the current study. Common method variance is a problem

if only one factor, which explains all the variance, is extracted from the factor analysis. However, it is not a major problem if multiple factors are extracted; or when all items run together, the restricted one-factor analysis generates the variance of less than 0.50 (Peterman & Kennedy, 2003). After all the assumptions of factor analysis were checked, all the items for the factors were entered into the factor analysis. The unrotated factors solutions revealed that five factors have emerged from the factor analysis. In another way, when we restricted to extracting only one factor, it produced a variance of 0.397, which is less than the threshold of 0.50. This finding indicated that common method variance was not a problem in the measures used in the current study.

Data Analysis

The quantitative data analysis technique was applied in the present study. First, the correlation coefficients were computed to investigate how the different variables were related to each other and to check multicollinearity issues. Then, descriptive statistics, such as means and standard deviations, were used to measure the mean response and the difference between the responses for each variable. Finally, hypotheses were tested using Structural Equation Modeling (SEM) path analysis based upon $p < 0.05$.

Ethical Consideration

According to Mugenda and Mugenda (2003), researchers are those people who are concerned with other peoples' quality of life and dignity. Initially, the researchers must respect the respondents' rights, needs, values, and desires (s). They must, therefore, be people of integrity who don't take research for personal gain or hurt others. There are various ethical issues that a researcher should avoid or not practice when undertaking research, such as confidentiality and privacy, anonymity, plagiarism, and fraud, among others. The involvement of human beings either directly or indirectly in almost all research gives rise to ethical issues. The confidentiality of the respondents was highly maintained. However, consent is obtained before giving the questionnaires, and they can participate if and only if they have agreed voluntarily. No disclosure of the name of the respondents in any means in the questionnaire should be there. Hence, the participants' views in the present study would not affect them. The study protocol was approved by the ethics committee of the school of management studies, Punjabi University.

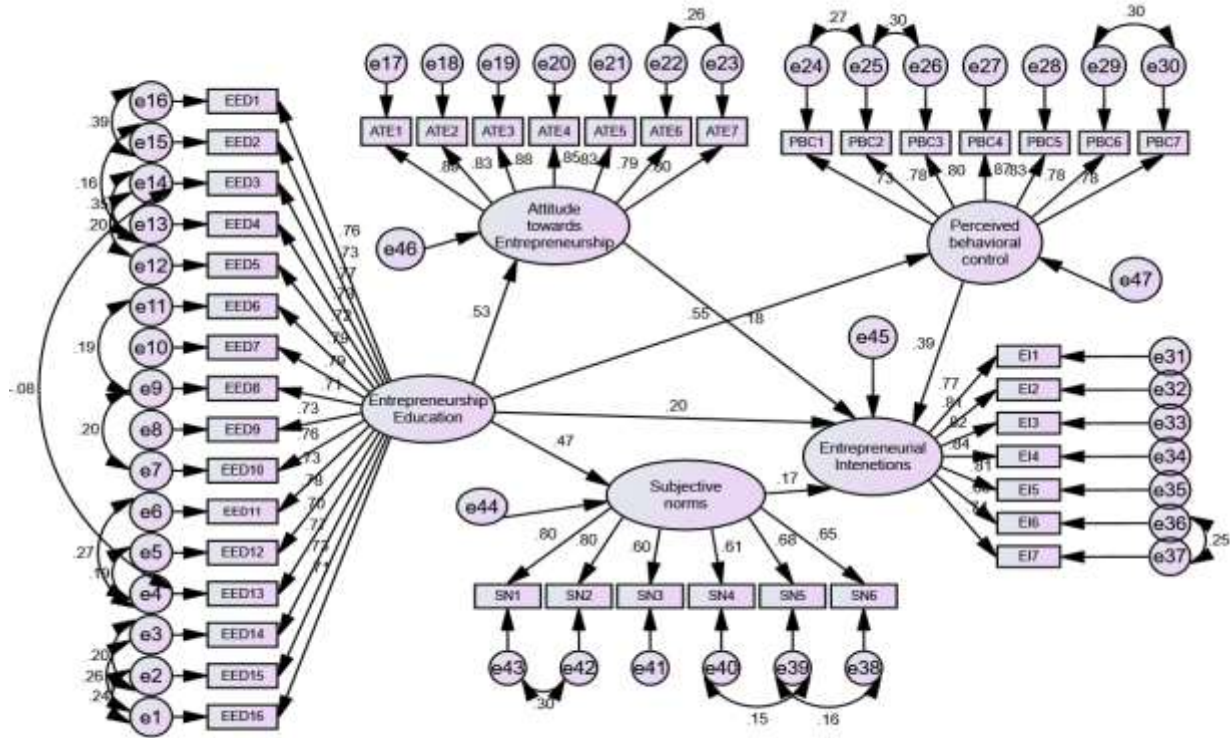
Results and Discussions

Based on the results, all of the hypotheses were tested. And these have been reported in consecutive tables and figures below.

Table 3: Descriptive analysis, means, standard deviations, and correlations

Constructs	Mean	Standard Deviation	ATE	SN	PBC	EED	EI
Attitude towards entrepreneurship (ATE)	4.85	1.51	1				
Subjective norms (SN)	4.20	1.23	.382**	1			
Perceived behavioral control (PBC)	4.87	1.40	.487**	.512**	1		
Entrepreneurship Education (EED)	5.02	1.04	.485**	.402**	.490**	1	
Entrepreneurial Intentions (EI)	5.01	1.41	.503**	.469**	.608**	.526**	1
** $p < 0.01$ level (2-tailed).							

Table 3 tabulates the correlation coefficient matrix among the variables considered in the present research and their significance level (p -value). As can be seen, the strongest correlations exist between EIs and perceived behavioral control with $r = .608^{**}$, the second strong correlation is between EE and EIs with $r = .526^{**}$, and the third strong correlation is that between EIs and attitude towards entrepreneurship with $r = .503^{**}$. The weakest correlation value has been found between subjective norms and attitude towards entrepreneurship $r = .382^{**}$, and EE and subjective norms $r = .402^{**}$, respectively. In general, the results show that correlation exists between all variables identified in this research based on the data collected from the students at $p < .01$ level. The multicollinearity problem should be corrected when the correlation between variables is above 0.80 (Cooper & Schindler, 2009; Kennedy, 2008), but in this study, the maximum correlation value was 0.608. Hence, this shows the absence of multi-collinearity problems among the predictor variables. From this, it is possible to conclude that the constructs used in the present study have a moderate correlation. Thus, it is possible to investigate their causal relationship further.



Legend: EED1-16=Items used to measure entrepreneurship education; AT1-7=Items used to measure attitude towards entrepreneurship; PBC1-7= Items used to measure perceived behavioral control; SN1-6=Items used to measure subjective norm; EI1-7=Items used to measure EIs.

Figure 2: Path coefficients of the model of EIs

Table 4: Regression weights between constructs and significance for each path

Path Analysis	Estimate	Std. Estimate	S.E	C.R.	p Value	Results
Entrepreneurship Education → Subjective norms	0.540	0.472	0.080	6.750	***	Supported H3a
Entrepreneurship Education → Attitude towards entrepreneurship	0.927	0.528	0.105	8.844	***	Supported H2a
Entrepreneurship Education → Perceived behavioral control	0.730	0.548	0.087	8.385	***	Supported H4a
Attitude toward entrepreneurship → EIs	0.152	0.182	0.045	3.392	***	Supported H5b
Subjective norms → EIs	0.216	0.169	0.072	2.997	0.003	Supported H6b
Entrepreneurship Education → EIs	0.298	0.203	0.102	2.916	0.004	Supported H1a
Perceived behavioral control → EIs	0.425	0.386	0.067	6.347	***	Supported H7b

*** $p < 0.001$

As shown in Table 4, the results of the hypotheses (H1a-H7b) have been accepted with $p < 0.01$. Specifically, entrepreneurship education has a positive effect on the antecedents of EIs with the standardized coefficient for subjective norms ($\beta = 0.472$, $p < 0.001$), attitude towards entrepreneurship ($\beta = 0.528$, $p < 0.001$), perceived behavioral control ($\beta = 0.548$, $p < 0.001$), and EIs ($\beta = 0.203$, $p < 0.005$). Moreover, attitude towards entrepreneurship has a positive and significant effect on EIs ($\beta = 0.182$, $p < 0.001$), subjective norms have a positive and significant effect on EIs ($\beta = 0.169$, $p < 0.005$), and perceived behavioral control has a positive and significant effect on EIs ($\beta = 0.386$, $p < 0.001$). The results above confirm that all the paths were significant. The strongest path was exerted between perceived behavioral control and EIs, which means a higher variance of dependent variable came from perceived behavioral control. The weakest path was observed between subjective norms and EIs (path coefficient = 0.17, $p < 0.005$). As depicted in Figure 2, the effect of EE significantly and positively accounted for variances in attitude towards entrepreneurship, subjective norms, perceived behavioral control, and EIs with R^2 of 0.28, 0.22, 0.30, and 0.50, respectively. In addition, all the associations revealed statistically significant relationships. Chin (1998) recommended that the associations between variables with path coefficients greater than 0.2 be considered strong. Hence, the strongest relationships were observed between EI and perceived behavioral control, attitude towards entrepreneurship, and subjective norms. Besides, perceived behavioral control and EIs and effects of EE and EIs have a strong relationship.

As a result, all the hypotheses in the conceptual model of the present research were accepted. Furthermore, the results confirmed that attitude towards entrepreneurship, subjective norms, and perceived behavioral control were partially mediated the relationship between EE and EIs since all the standardized path coefficients were significant at $p < 0.01$.

The present study was compatible with Von Graevenitz, Harhoff, and Weber (2010); Jain & Chaudhary (2017) found that an entrepreneurship course has a significant positive impact on entrepreneurial intention and its antecedents. Ojogbo, Idemobi, and Ngige (2016) also noted a positive relationship between EE and EIs of students. Sanchez (2011) has found that entrepreneurial competencies (self-efficacy, pro-activeness, and risk-taking) and intentions towards entrepreneurial activity increase among students who took an entrepreneurship course. According to Dogan (2015), there was also a positive relationship between EE and EIs. Nguyen (2017), based on the study conducted in Vietnam, stated that attitude towards entrepreneurship and perceived behavioral control are positively related to EIs. Pandit *et al.* (2018) have found that EE can positively influence graduates' future career intentions and make them better entrepreneurs. The study conducted in Uganda has also confirmed that exposure to EE can enhance self-efficacy and EIs (Oyugi, 2015). As a result of the influence of EE, higher education institutions are increasing investment in entrepreneurship promotion (Gwynne, 2008). However, contrary to the present findings, Dohse and Walter (2012) found that EE was

positively related to ATE and SN or PBC. Also, Gurel, Altinay, and Daniele (2010), and Mahendra, Djatmika, and Hermawan (2017) have found that EE did not play a significant role in promoting entrepreneurial traits and intentions among university students. Karimi *et al.* (2016) have reported that EE did not show a significant effect on EIs. Hsiao *et al.* (2012) revealed no correlation between EE offered in higher education and students' EIs. Although some empirical evidence contradicts the present study, most of them support the positive influence of EE on EI and its antecedents. Therefore, universities in low-income countries like Ethiopia could prioritize EE to make graduates job creators instead of job seekers.

To test the indirect effect of the independent variable (EE) on the dependent variable (EIs) through the mediators (attitude towards entrepreneurship, subjective norms, and perceived behavioral control), the bootstrap test was performed at a 95% confidence interval with 2000 bootstrap samples.

Table 5: Summary of the standardized direct, indirect, and total effects of the bootstrapping results

Path	Estimate	Product of coefficients		Bootstrapping 2000 times 95% CI					
		SE	CR	Biased corrected percentile			Percentile		
				Lower	Upper	P	Lower	Upper	P
EED→EI	0.204	0.065	3.14	0.076	0.342	0.013	0.081	0.352	0.010
Standardized indirect effect									
EED→ATE→EI	0.141	0.051	2.76	0.047	0.249	0.007	0.045	0.240	0.010
EED→SN→EI	0.113	0.049	2.31	0.036	0.251	0.011	0.007	0.231	0.025
EED→PBC→EI	0.312	0.071	4.39	0.207	0.474	0.005	0.194	0.456	0.010
Total standardized indirect effect	0.386	0.050	7.72	0.294	0.484	0.006	0.273	0.476	0.010
Total standardized effect	0.590	0.048	12.29	0.482	0.671	0.026	0.485	0.680	0.010

Note: EED-Entrepreneurship education, EI-Entrepreneurial intention, ATE-Attitude toward entrepreneurship, SN-Subjective norms, PBC-Perceived behavioral control

Table 5 exhibits the bootstrap results of the direct effect, specific indirect effects of mediator, total indirect effect, and total effect (i.e., the sum of direct and total indirect effect) on the relationship between EE and EIs with each significance level at 95% confidence interval.

The mediating effect of attitude towards entrepreneurship (coefficient of indirect effect=0.141, $p<0.05$). This result enables us to support the hypothesis that attitude towards entrepreneurship has a mediating effect on the relationship between EE and EIs of students. The second indirect effect was that of perceived behavioral control

(coefficient of indirect effect=0.312, $p<0.05$), which is also evidence to accept the hypothesis that perceived behavioral control has a mediating effect on the relationship between EE and EIs of students. The third indirect effect was the social norms (coefficient indirect effect=0.113, $p<0.05$), which supports the hypothesis that subjective norms have a mediating effect on the relationship between EE and EIs of students. Further, investigation of the lower and upper-level confidence intervals of the three mediated paths revealed that the entire path intervals had excluded zero; hence they were statistically significant. From this, we can conclude that the three hypothesized mediators, namely attitude towards entrepreneurship, subjective norms, and perceived behavioral control, had a statistically significant mediation effect on the relationship between EE and EIs of students with a p -value of less than 0.05. In a nutshell, EE affects EIs of students both before and after the mediators are included in the model. This is an indicator of partial mediation for all mediators since all paths were significant even after mediating variable entered into the model.

The study conducted in Malaysia on public university students proved perceived behavioral control and subjective norms as significant mediators on the relationships between individual entrepreneurial orientation and EIs (Awang *et al.*, 2016). Although this finding was compatible with the present study, the exogenous variable used is not the same. Oyugi (2015) has conducted research in Uganda on the mediating effect of self-efficacy (perceived behavioral control) on the relationship between EE and EIs of university students and found that self-efficacy partially mediated the relationship between EE and EIs. Pfeifer *et al.* (2016) have also supported the mediating role of self-efficacy on the relationship between education and EIs based on the study conducted in Croatia.

The present study applies the TPB and contributes to EE in universities. For future research on EE, attitude towards entrepreneurship, subjective norms, and perceived behavioral control can serve as predictor variables that influence EIs and as mediating variables in the causal relationship of any other exogenous variables (for example, EE in this study) with EIs. For stakeholders, to accelerate the willingness of graduates to consider entrepreneurship as a career option, universities should work by initiating different projects and programs that could change the students' mindset while on campus. The traditional EE, only as a single one-semester course for students studying in selected programs, should be changed to programs at the undergraduate level and/or graduate level and compulsory course for every field of study because the findings have confirmed that EE plays a role in enhancing EIs and its antecedents. Furthermore, the methodology for teaching entrepreneurship should be changed from a conventional theory-based lecture method to a practical student-centered approach, such as business idea generation, business creation exercises, and feasible business plan development. Finally, the policy makers, the Ethiopian ministry of sciences and higher education (MoSHE), respective universities, and educators are expected to develop institutional systems and strategies through which EE is nurtured for students and societies since it is

a key priority to alleviate unemployment and ensure sustainable socio-economic development.

Conclusions, Limitations, and Future Research

Conclusions

This study investigates the role that the current EE in Ethiopian Universities plays in enhancing EIs and their antecedents. Besides, the unique feature of the current study was to test the mediating role of attitude towards entrepreneurship, subjective norms, and perceived behavioral control in the predictive relationship between EE and EIs.

It can be concluded that EE is essential to foster and nurture entrepreneurship thinking and spirit. Hence, it has a remarkable connection with policymakers and educators. Furthermore, it is a means to alleviate the unemployment of graduates from higher education institutions and build an entrepreneurial-minded youth of graduates. However, in Ethiopia, EE is in its infancy, and further work is deemed necessary to bring change in the entrepreneurial ecosystem of universities in particular and that of the country in general.

In addition, the findings of the study have revealed that (1) EE positively and significantly influence EIs and their antecedents, (2) all antecedents (perceived behavioral control, attitude towards entrepreneurship, and subjective norms) positively and significantly influence EIs, and (3) attitude towards entrepreneurship, subjective norms, and perceived behavioral control partially mediated the relationship between EE and EIs. Furthermore, the mediating effect was tested using the bootstrapping method, which found consistent results. Hence, the study's findings validate the effect of EE on EIs and their antecedents. As a result, higher education institutions are motivated to promote entrepreneurship and encourage graduate students with an entrepreneurial mindset to become nascent entrepreneurs after graduation. Finally, we believe that the present study findings provide new insights into the understanding of TPB and EE and EIs of students in higher education institutions.

Limitations and Future Research

The present study has several limitations that could indicate avenues for future research. Firstly, the present study is based on primary cross-sectional data collected from a limited sample of undergraduate students of only four universities based in Ethiopia. Hence, in the future, longitudinal research should be conducted to investigate the long-term effect of mediators on EE-EIs relationships from more universities and students with

diversified educational backgrounds to confirm the proposed model's robustness. In addition, the longitudinal research also helps examine changes in EIs and its antecedents over time and assess students' possibility of engagement in actual entrepreneurial activities after graduation.

Secondly, EE is the only factor in the present study as an exogenous variable that influences EIs and their antecedents. But different personal, psychological, and environmental factors can be considered for the future endeavor either as exogenous variables and/or mediators. Thirdly, in the present study, all measures taken indicate undergraduate students' perceptions, possibly leading to bias. But, in the future, other stakeholders such as university management, educators, and the government should be included. Fourthly, this research cannot compare the public with private university students in EIs and their antecedents. In the future, informative conclusions can also be drawn by conducting a comparative study of students from public and private universities on the current phenomenon.

Finally, in the future, such research may be experimental research, such as before and after availing entrepreneurship course, what happened to the level of EIs, antecedents, and the mediating role should be conducted. Thus, such research helps to provide conclusive rational evidence that enables universities to invest more in EE and entrepreneurship promotion for their students.

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