

# ENTREPRENEURIAL INTENTIONS OF UNDERGRADUATE STUDENTS: THE MODERATING ROLE OF ENTREPRENEURIAL KNOWLEDGE

**Mesia Ilo**

University of Dar es Salaam Business School, Dar es Salaam, Tanzania

Email: [ilomo.mesia@udsm.ac.tz](mailto:ilomo.mesia@udsm.ac.tz)

**Kelefa Mwantimwa**

University of Dar es Salaam, Dar es Salaam, Tanzania

Email: [mwantimwa@udsm.ac.tz](mailto:mwantimwa@udsm.ac.tz)

Received: 11 February 2023. Revision received: 9 May 2023. Accepted: 5 June 2023

## ABSTRACT

Notwithstanding the concerted interventions for integrating entrepreneurship education in higher learning institutions, graduates' transition from universities to entrepreneurial activities remains insignificant. This paper examines the influence of entrepreneurial knowledge on the entrepreneurial intentions of undergraduate students. An exploratory research design alongside a quantitative approach was used to collect data. The data for this paper were collected from 335 drawn from 10 public and private higher learning institutions. Purposive, stratified, and convenience sampling were used to draw the sample. Data were collected through a structured questionnaire survey administered to 335 finalist students in Tanzania's higher learning institutions. The paper applies a partial least square structural equation modelling (PLS-SEM) to examine the moderating role of entrepreneurial knowledge on the relationship between motivational factors and entrepreneurial intentions of finalist undergraduate students from higher learning institutions in Tanzania. The study reveals that entrepreneurial knowledge significantly moderates the relationship between behavioural control and entrepreneurial intentions. The influence of entrepreneurial knowledge on the relationship between attitude and intentions and subjective norms and intentions is insignificant. Further, the attitude and behavioural controls were found to positively and significantly affect immediate entrepreneurial intentions, whereas subjective norms insignificantly affected immediate entrepreneurial intention. The study contributes to the development of a theory of planned behaviour, for example, by demonstrating that the three motivational factors have varying effects on entrepreneurial intentions in the context of moderation and different time horizons. Family entrepreneurial culture, personal savings, and role models are keys to making graduates pursue entrepreneurship in the long term.

**KEYWORDS:** entrepreneurial intentions, undergraduate students, entrepreneurial knowledge, theory of planned behaviour, Tanzania

**JEL CLASSIFICATION:** C83, E24, M13

**Reference:** Ilo. & Mwantimwa, K. (2023). Entrepreneurial Intentions of Undergraduate Students: the Moderating Role of Entrepreneurial Knowledge. *International Journal of Entrepreneurial Knowledge*, 11(1), 14-34. doi: 10.37335/ijek.v11i1.178

## INTRODUCTION

Unemployment among university graduates is one of the longstanding challenges facing many governments globally (Mwantimwa et al., 2022; Rusteberg, 2013; Mwasalwiba, 2012, Olomi, 2009; Davidsson, 1995). It appears that most developing countries are locked into unsustainable job creation. For example, unemployment levels in South Africa remain high at 25.2% (Rusteberg, 2013). This is also a challenge in Tanzania, especially in urban areas, exacerbated by rural-urban migration (Aikael et al., 2021). Persistent unemployment connotes that both the public and private sectors have a limited capacity to absorb new entrants into the labour market (Mangasini & Gabagambi, 2016). Stagnant industrial and agricultural production growth and decreasing in export accelerate unemployment among university graduates (Sher et al., 2017). Likewise, the expansion of formal education against the already

rising youth unemployment is only making the unemployment problem worse (Mwantimwa, 2019). Supporting this, Sher et al. (2017, p. 941-942) document that "universities are producing graduates in increased number which is a yearly addition to unemployment numbers." Notably, employment opportunities are limited to suffice the massive number of university graduates who are seeking formal employment (Aikael et al., 2021; Mwantimwa, 2019; Keat et al., 2011; Tsordia & Papadimitriou, 2015).

Entrepreneurship has become one of the important ingredients to achieving socio-economic growth (Keat et al., 2011; Tambwe et al, 2020). It is considered an engine that drives all sectors of the economy by cultivating job creation through new start-ups, innovation, and providing a variety of goods and services to society (Kim-Soon et al., 2016; Tambwe et al., 2020; Wei-Loon et al., 2012; Yurtkoru, Kuscü & Doganay, 2014). Noting these, entrepreneurship becomes a part of the interventions to insubstantial labour markets and cure for the high unemployment calamity (Miralles, Giones & Riverola, 2016; Yurtkoru et al., 2014). Scholars and policymakers are in agreement that entrepreneurship is a driving force for sustainable economic growth and competitive development (Miralles et al., 2016; Lerner, 2010). Understandably, entrepreneurship is taken as key agenda by policymakers to address socio-economic viability and productivity, thereby reducing the unemployment challenge (Kim-Soon, Ahmad & Ibrahim, 2016; Sher et al., 2017; Wei-Loon et al., 2012; Sondari, 2014). Undeniably, countries are increasingly appreciating the effect of entrepreneurial activities on fostering socio-economic growth through the creation of new ventures and economic development in particular (Liñán et al., 2013; Sondari, 2014).

Higher learning institutions, that is, universities and colleges in different countries have integrated entrepreneurship courses and programs in their curriculum as a response to the increasing demand for entrepreneurial knowledge and career (Fernández-Pérez et al., 2019; Tsordia & Papadimitriou, 2015; Yurtkoru et al., 2014). Gyamfi (2014) reports that mainstreaming entrepreneurial courses in the university curriculum has an effect on lessening the graduates' unemployment problem. Apart from that, in partnership with government and non-government organisations, higher learning institutions are introducing entrepreneurship centres, innovation hubs, science parks, and incubators to foster knowledge acquisition among graduates (Mwantimwa et al., 2021). Besides that, the governments and funding agencies are offering financial support for graduates' business start-ups and entrepreneurial training. This is taking place in different parts of the world (Sher et al., 2017; Mwantimwa, 2019; Yurtkoru et al., 2014). For example, the government of Tanzania has integrated entrepreneurship education in vocational and higher learning institutions. Since the 1990s, higher learning institutions have been integrating entrepreneurial courses in their curricula while some have also been establishing centres for entrepreneurship studies and coordination to cater knowledge needs of their students (Mori & Fulgence, 2009).

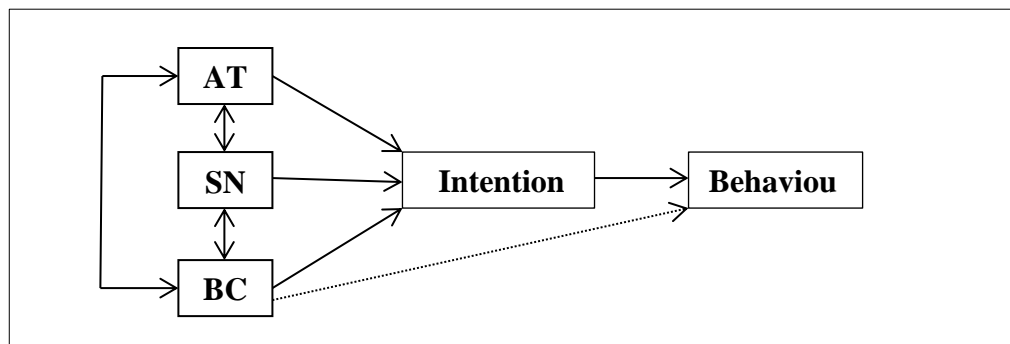
Notwithstanding the concerted interventions for integrating entrepreneurship education in higher learning institutions, 'Tanzanian graduates' transition from universities to entrepreneurial activities remains insignificant (Olomi, Charles & Mori, 2013) hence the deepening cries of lack of jobs (Mwantimwa, 2019). Further, venturing into entrepreneurship is partly constrained by personal, sector-specific, and macro factors (Mwantimwa et al., 2022). As a result, the majority of graduates end up settling for profiled temporal jobs and are unemployed in urban areas (Aikael et al., 2021; Mwasalwiba, 2012). The dearth of studies presenting a clear picture of entrepreneurial intentions among university graduates in Tanzania leaves the status of this issue unclear. It is clear that studies to examine entrepreneurial intentions among Tanzanian students are very limited. In particular, studies exploring the entrepreneurial intentions of students with the influence of entrepreneurial knowledge are lacking. Considering the value of such knowledge to policymakers and practitioners, the present study seeks to examine how entrepreneurial knowledge moderates the relationship between motivation factors and the entrepreneurial intentions of graduates. In addition, the paper examines the predictors for entrepreneurial intentions among higher learning institutions students.

This paper comprises a number of sections. In the first one, an introduction is provided. This is followed by a section that presents the literature review on the subject of study. The literature section is mainly divided into two sub-sections, namely; theoretical base and hypotheses development. In the section that follows the literature one, the paper describes the research methodological base. This is followed by a section that presents the results of the study. The final three sections of the paper discuss the study's findings, indicate the implications of the study, and conclude the study and provide recommendations, respectively. At the end, the paper outlines the references consulted while working on the paper and presents the measurement model.

## 1 THEORETICAL BASE

In 1991, Ajzen, extended a theory of reason action (Fishbein & Ajzen, 1975) to form the theory of planned behavior [TPB] (Ajzen, 1991). According to Ajzen (1991), intention to the behaviour is mainly determined by three components: attitude toward behaviour (AT), subjective norm (SN), and perceived behavioural control (BC). The three components are also referred to as motivational factors that underlie the behavioural intention. Indeed, the entrepreneurial intention is determined by the three motivation factors. According to Krueger et al. (2000), the intention is the single best predictor of planned behaviour. Figure 1 summarises Ajzen's TPB framework

Figure 1 Theory of Planned Behavioral Framework



Source: Ajzen (1991)

Particularly, attitude towards behaviour refers to "the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question" (Ajzen, 2002, p.5). This also refers to the perceived desirability of starting a business, which measures an individual's perception of the positive or negative outcomes of starting a business (Fayolle, 2005). Whereas subjective norm is conceptualised as "the perceived social pressure to perform the action of being monitored", and perceived behavioural control reflects "individuals control beliefs relating to the action being monitored" (Solevik, 2012, p.448). This entails the perceived relative ease or difficulty to perform any behaviour or action, such as becoming an entrepreneur (Hassan et al, 2020).

Since the 1990s, the TPB has been used substantially by scholars from different research orientations (see, for example, Krueger & Carsrud, 1993; Krueger et al., 2000; Fayolle, 2005; Rusteberg, 2013; Linan et al., 2011; Tsordia and Papadimitriou, 2015; Kim-Soon et al., 2016; War et al., 2019; Zhang, 2018). This includes the use by researchers studying entrepreneurship. Some scholars (e.g., Miralles et al., 2016) have gone far as to conclude that TPB is one of the first models to successfully pursue intentional behaviour. Supporting this, Schlaegel and Koenig (2014) argue that the TPB intention model has become a *de facto* approach to the studies of entrepreneurship motivation, intention, and

behaviour. Likewise, Linan and Fayolle (2015) contend that "TPB has become the dominant theoretical perspective to study the influencing factors of entrepreneurial behaviour." Principally, the TPB offers a determined approach to its application to different environments and behaviour, and provides support for the making inferences of potential findings (Vinogradou et al., 2013).

Entrepreneurial intention is a dependent variable that refers to commitment, desirability, and willingness to venture into business deliberately (see Linan & Chen, 2009; Kueger & Carsrud, 1993; Kuswanto, Suratno and Wulandari, 2022). There are numerous studies which adopted TPB for researching entrepreneurial intention. For example, a study by Rusteberg (2013) used TPB to validate its applicability for understanding the entrepreneurship intention of business students in South Africa. The findings suggest that TPB was a significant predictor of entrepreneurial intention. In examining the role of TPB on the entrepreneurship intention of Greek business students, Tsordia and Papadimitriou (2015) support that entrepreneurship intention is positively and significantly correlated with the three components of TPB for both the first year and the fourth year business students. The same has been observed by Ambad and Damit (2016) when examining the determinants of entrepreneurial intention among undergraduate students in Malaysia. Dwelling on these findings, it becomes evident that the formation of entrepreneurship desire by an individual depends on attitudes, social norms, and perceived behavioural control.

Some of the prior studies do not directly support the notion that the three TPB factors are mainly determining entrepreneurial intention. For instance, the study by Sher et al. (2017) found that the entrepreneurial intention of agricultural students in Pakistan was significantly and positively predicted by entrepreneurial education, attitudes, family support, mental acceptance, access to credit, personality traits, self-sufficiency, and perceived behavioral control. Thus, other factors such as entrepreneurial knowledge and an individual's mental acceptance stimulate entrepreneurial intention among students. Sher et al. (2017) further argued that entrepreneurial education was a stronger determinant than attitude, subjective norms, and perceived behavioral control. Further, Yurtkoru et al. (2014) revealed that contextual factors such as education, relational, and structural support are the potential antecedents of personal attitude, and perceived behavioral control which in turn increase entrepreneurial desirability among Turkish university students. This suggests that attitudes, social norms, and perceived behavioural control are not the only determinants of entrepreneurship intentions. Furthermore, some researchers differentiate between immediate and future entrepreneurial intentions. For example, Kim-Soon et al. (2016) found that subjective norms and attitudes were significantly related to both graduates' immediate and future entrepreneurship intention while perceived behavioral control was associated with immediate career intention and not with future entrepreneurial intentions. The literature seems to imply that the effect of attitude, social norms, and perceived behavioral control on entrepreneurial intention varies by context, including the behaviour in question (see also Ajzen, 2011; Ledi, Ameza-Xemalordzo and Owusu, 2022).

Besides, many studies suggest a direct and significant association between subjective norms and entrepreneurial intention (e.g., Ambad & Damit, 2016; Kim-Soon et al., 2016; Soutaris et al., 2007). In particular, Kim-Soon et al. (2016) found a significant relationship when surveying Malaysian students. On the same note, Soutaris et al. (2007) found a significant relationship of the two variables in the study which was conducted to science and engineering students from European universities. Besides, insignificant and contradictory findings have been documented too. Specifically, Tsordia and Papadimitriou (2015) revealed insignificant association between subjective norms and entrepreneurial intention of business students in Greek. This tallies with the finding by Solesvik et al. (2012) who observe insignificant correlation between subjective norms and entrepreneurial intention when surveying third, fourth and fifth year's students who were studying economics and business in Ukraine. Accordingly, Wu and Wu (2008) failed to establish the linkage between social norms and entrepreneurial intention among students in China. Other studies (e.g., Linan & Chen, 2008; Tambwe

et al., 2020; War et al., 2019) observe weak and non-significant association between subjective norms with entrepreneurship intention.

## 2 HYPOTHESES DEVELOPMENT

### 2.1 Subjective norms and entrepreneurial intention

Cognisant of varying nature of relationship between subjective norms and entrepreneurial intention, this paper hypothesised as follows:

#### **H1: There is a positive relationship between subjective norms and entrepreneurial intention**

Apart from that, attitude towards behaviour tends to stimulate entrepreneurial intention. Dwelling on the literature, factors such as security, earning income, self-reliance, attractiveness, market opportunity and resources, desire for immediate feedback, success, and satisfaction are associated with an individual's attitude toward the choice of entrepreneurial career (Sher et al., 2017; Ambad & Damit, 2016; Kim-Soon et al., 2016; Scarborough, 2012). Solesvik et al. (2012) reveal that a high attitude towards self-employment is associated with an increase in entrepreneurial behaviour, in turn, leads to venture into business. On a similar note, Kim-Soon et al. (2016) found that individual with a higher AT is more likely to decide on venturing into entrepreneurial activities. In agreement with these studies, Ramos-Rodriguez et al. (2019) found that AT has more explanatory power for students who intend to venture into business immediately after finishing their studies and indicate AT as the main predictor of EI. Tambwe et al. (2020) found a significant effect of AT on EI among orange farmers in Tanzania. In supporting these, Urban and Chantson (2019) contend that AT is the dominant antecedent towards entrepreneurial behaviour over the SN and BC. Also, Ramos-Rodriguez et al. (2019) documented that AT was the leading determinant of EI.

### 2.2 Attitude and entrepreneurial intention

#### **H2: There is a positive relationship between attitude and entrepreneurial intention**

Notably, perceived behavioral control (self-efficacy beliefs) is another important determinant of entrepreneurial intention. BC attributes such as being boss, realising dreams, prestige, status, freedom, enjoyment, and economic environment predict EI (see Kim-Soon et al., 2016; Ledi et al., 2022). Solesvik et al. (2012) found that high perceived behavioral control was associated with the strong entrepreneurial intention of students in Ukraine. Likewise, Rusteberg (2013) reported a significant influence of BC on entrepreneurial intention among business students in South Africa. Further, Rusteberg (2013) found BC to be the most important determinant of entrepreneurial intention, which is consistent with Tambwe et al. (2020) in their study on the entrepreneurial intention of orange farmers in Tanzania, and Anwar et al. (2020) in their study on entrepreneurial intention of female students in India. Scholars such as Kolvereid (1996, p.53) assert that "the greater a person's BC, the stronger is that person's intention to become self-employed." While the association between BC and students' immediate career intention seems significant, the association between BC with students' future intention appear insignificant (Kim-Soon et al, 2016).

### 2.3 Perceived behavioural control and entrepreneurial intention

#### **H3: There is a positive relationship between perceived behavioural control and entrepreneurial intention**

Besides the three TPB antecedents (i.e. AT, BC, and SN), entrepreneurial knowledge has been found to effectively contribute to entrepreneurial intention. Students indicate that entrepreneurship education potentially contributes to enhancing entrepreneurial knowledge and skills, raising interest, practice, problem-solving experience, feeding confidence, and developing job-related skills, business plans, ideas, and communication skills (Tsordia and Papadimitriou, 2015). Entrepreneurial education and training are essential for developing self-efficacy, which is not necessarily inborn (Anwar et al., 2010; Hassan et al., 2020; Roy et al., 2017). Scholars from different research background report that entrepreneurial education motivates students' intention toward entrepreneurial activities (Sondari, 2014; Keat et al., 2011; Souitaris et al., 2007; Matlay, 2005). Specifically, Keat et al. (2011) surveyed final-year students from business, engineering, computing, and information technology (IT) in Malaysia and found entrepreneurial education to have a strong and positive influence on the likelihood of graduates venturing into entrepreneurship. This is supported by Souitaris et al. (2007) who noted that entrepreneurial education to science and engineering students increased EI. Similarly, Yildirim et al. (2016) found that entrepreneurial education has a significant influence on business and engineering students' entrepreneurial intentions. But it is important to note that not all entrepreneurial programmes have a positive impact. Further, not all students have access to entrepreneurial education. Importantly, non-business students also venture into entrepreneurship (Fernández-Pérez et al., 2019; Roy et al., 2017; Souitaris et al., 2007).

According to Piperopoulos (2012), entrepreneurship courses that do have not a clear orientation undermine students' intention toward business start-ups. Not surprising that Tsordia and Papadimitriou (2015) established that entrepreneurial curriculum and content had no direct and significant effect on business graduates' intention to pursue a self-employed career. The authors were surprised that "the fourth years who were close to completing their studies and have attended many entrepreneurship courses reported lower EI compared to first-year students who were just introduced to the concept of entrepreneurship" (p.35). Miralles et al. (2016) disclose that entrepreneurial knowledge in itself might not make an entrepreneurial career more attractive. Accordingly, Roxas et al. (2014) inform that entrepreneurial knowledge gained from a formal entrepreneurial education programme has positive effects on an individual's overall entrepreneurial intentions by mediating the influences of AT and SN.

#### **2.4 Motivational factors, entrepreneurial knowledge and intention**

The present study developed the following hypotheses to establish the relationship between motivational factors, entrepreneurial knowledge, and intentions:

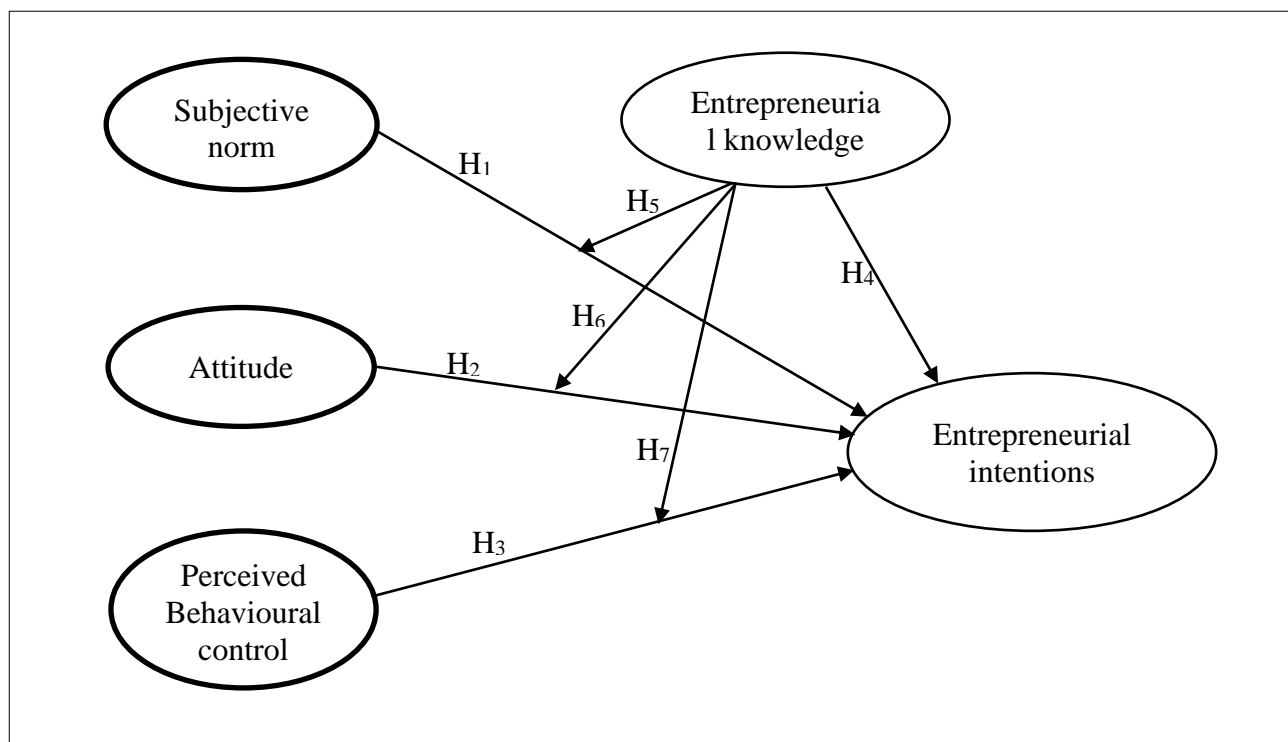
- H4: There is positive relationship between entrepreneurial knowledge and entrepreneurial intention
- H5: There is a significant moderating effect of entrepreneurial knowledge on the relationship between subjective norms and entrepreneurial intention
- H6: There is a significant moderating effect of entrepreneurial knowledge on the relationship between attitude and entrepreneurial intention
- H7: There is a significant moderating effect of entrepreneurial knowledge on the relationship between perceived behavioural control and entrepreneurial intention

A study by Roxas et al. (2014) focuses on business students (capturing before and after training knowledge) but considers entrepreneurial knowledge among them as varying. Further, the authors consider entrepreneurial knowledge as directly affecting entrepreneurial intentions, and indirectly affecting entrepreneurial intentions through motivations factors – that is, examining the mediation effects. Similarly, Roy et al. (2017) consider entrepreneurial education as indirectly affecting intentions through the subject norm and BC, and directly affecting intentions - and found a positive significant effect in both relationships (paths). Liñán et al. (2013) also examined how entrepreneurial knowledge

affects entrepreneurial intention but captured entrepreneurial knowledge as knowledge on business associations, support bodies, and other sources of assistance for entrepreneurs. Such kind of knowledge enables students to have a more realistic perception of entrepreneurial activities, and more awareness of the entrepreneurship career route, hence leading to an informed transition to pursuing entrepreneurship. Indeed, Liñán et al. (2013) found entrepreneurial knowledge to have a stronger effect on BC and less so on SN and AT. Fernández-Pérez et al. (2019) take entrepreneurial education as moderating the relationship between motivation factors and entrepreneurial intention of social and legal science students enrolled in entrepreneurship courses in Spain. They found entrepreneurship education to weakly moderate the relationship between attitude and EI but strongly moderate the relationship between self-efficacy (BC) and entrepreneurial intention.

Anwar et al. (2020) examined the moderating role of entrepreneurial education on the entrepreneurial intention of female students in three different universities in India – and found a strong effect of three motivational factors on entrepreneurial intention. Further, they found entrepreneurial education to significantly and strongly moderate the relationship between BC and EI and AT and EI, whereas the influence of entrepreneurial education seems stronger for BC. Hassan et al. (2020) found that entrepreneurial education significantly moderates the relationship between self-efficacy and entrepreneurial intention. However, their study did not include attitude and subjective norms, thus silent on the potential moderation of entrepreneurial education of their relationship with entrepreneurial intention. Tambwe et al. (2020) included entrepreneurial training in their model and found an insignificant effect of training, thereby concluding that such training do not determine entrepreneurial intention.

*Figure 2* Conceptual model relating motivational factors, entrepreneurial knowledge, and entrepreneurial intentions



(Sources: own formulation)

Even though TPB has been widely employed by scholars from different research orientations in studying entrepreneurial intention, the studies to gauge entrepreneurial intention among university students in Tanzania are not many. Worse still, the controversial results in the extant literature, render the TPB components open for further research as factors for predicting students' immediate and future entrepreneurial intentions. Also, the scarcity of studies to examine students' entrepreneurial intentions from different disciplines was observed. To date, the predictors for the immediate and future intentions of Tanzania's university graduates remain unclear. It is against these shortcomings, the present study examines the way entrepreneurial knowledge moderates the effect of motivational factors on the entrepreneurial intention of graduates. Entrepreneurial knowledge in this study is defined as knowledge of business associations, support bodies, and sources of assistance for entrepreneurs (Liñán et al., 2013; Roxas et al., 2014). To gain deeper insights into moderating role of entrepreneurial knowledge, the researchers formulated a conceptual model relating motivational factors, entrepreneurial knowledge, and entrepreneurial intentions as Figure 2 presents:

Our view is that the effect of motivational factors on entrepreneurial intentions is conditional on the level of entrepreneurial knowledge of the graduates. That is, motivational factors and entrepreneurial knowledge interact in their influence on entrepreneurial intention (Postigo & Tamborini, 2002; Kuswanto et al., 2022). This is different from studies such as Roxas et al. (2014) and Tambwe et al. (2020), which argue that entrepreneurial knowledge has a direct and/or indirect effect on entrepreneurial intentions through motivational factors.

### 3 METHODS

An exploratory research design was used to gauge the influence of entrepreneurial knowledge on the entrepreneurial intentions of graduates of higher learning institutions in Tanzania. Along with this, a quantitative approach was used to collect data. The data were collected from ten (10) public and private higher learning institutions in Tanzania, namely: University of Dar es Salaam (UDSM), University of Dodoma (UDOM), College of Business Education (CBE), Mbeya University of Science and Technology (MUST), University of Iringa (UoI), St. Johns University, Muhimbili University of Health and Allied Sciences (MUHAS), Muslim University (MU), Sokoine University of Agriculture (SUA), and Ruaha Catholic University in 2019/2020. The study targeted final-year undergraduate students. A total of 335 final-year undergraduate students were involved in the present study. Stratified sampling was used to put institutions into two strata (public and private), whereas purposive was used to select the institutions from each stratum. Also, the stratification of the population was based on courses pursued by final-year students from each university as well as ensuring equitable distribution across higher learning institutions. Accordingly, individual final-year students who participated in the present study were chosen from each stratum established by the researchers and then conveniently sampled from each stratum. Table 1 summarises the profile of the final-year undergraduate students:

*Table 1 Profile of the final-year undergraduate students*

Demographic (n=335)	Categories	Frequency	Percent (%)
Higher learning institution	University of Dar es Salaam	111	33.13
	University of Dodoma	96	28.66
	College of Business Education	7	2.09
	Mbeya University of Science and Technology	20	5.97
	Iringa University	8	2.39
	St. John University	14	4.18



	Muhimbili University of Health and Applied Sciences	8	2.39
	Muslim University	13	3.88
	Sokoine University of Agriculture	42	12.54
	Ruaha Catholic University	16	4.78
Gender	Female	137	40.90
	Male	198	59.10
Age	Under 20	8	2.39
	20-24	199	59.40
	25-29	117	34.93
	30-34	9	2.69
	35-39	1	0.30
	40 and above	1	0.30
Degree program	Health science	26	7.76
	Information and Communication Technology	4	1.19
	Natural and applied science	34	10.15
	Business	58	17.31
	Social science	73	21.79
	Law	10	2.99
	Engineering	42	12.54
	Education (science)	13	3.88
	Education (arts)	58	17.31
	Agriculture	10	2.99
	Unspecified	7	2.09
Marital status	Married	22	6.57
	Single	309	92.24
	Divorced	2	0.60
	Separated	2	0.60

(Source : own processing)

Two public universities, University of Dar es Salaam (UDSM) and University of Dodoma (UDOM) accounted for about 62 percent of the sample. These are leading universities in Tanzania in terms of enrolments. Male accounted for approximately two third of the sample. About 94 percent of respondents were young, from 20 to 29 years old. The majority of students (92%) were single. About 17 percent of the sample studied business and 81 percent took non-business degree programs. About 2 percent of the sample did not indicate their degree programs.

To empirically test the stated hypotheses, data were collected through a structured questionnaire survey administered to finalist students in Tanzania's higher learning institutions. The questionnaire consisted of closed-ended questions. All questionnaires conveniently administered by the researchers and research assistants were returned, creating a return rate of 100%. The questionnaire had two main sections. The first part captured background information including age, degree program, institution, and marital status. Further, the questionnaire included sections on entrepreneurial motivational factors, entrepreneurial intentions, and entrepreneurial knowledge. The second part of the questionnaire comprises six constructs. This includes three constructs of motivational factors, that is, behavioural control (BC), subjective norm (SN), and attitude towards behaviour (AT). The entrepreneurial intention was captured through two alternative measures: immediate entrepreneurial intentions (IEI) and future entrepreneurial intentions (FEI). The sixth construct was entrepreneurial knowledge (EK). Entrepreneurial motivations and intentions constructs were measured through a varying number of

indicators operationalized in a five-point Likert scale, where: 1 = strongly disagree, 2=disagree, 3=undecided, 4=agree, and 5=strongly agree. There were eight indicators for perceived behavioural control, six for subjective norm, five for attitude, nine for immediate entrepreneurial intention, and three for future entrepreneurial intention. Indicators and operationalization of entrepreneurial motivations constructs and entrepreneurial intentions constructs were adopted from Kim-Soon et al (2016). Entrepreneurial knowledge construct was also measured on a five-point Likert scale and adopted from Roxas (2014): 1=not true at all, 2=not true, 3=somewhat true, 4=true, and 5=very true. Entrepreneurial knowledge was measured through six indicators. Specific indicators for each construct used in this paper are presented in Table A1 in the appendix.

This paper estimates the relationship between variables through partial least square structural equation modeling (PLS-SEM). Structural equation modelling offers avenues to understanding sophisticated relationships (in terms of patterns and directions) between the variables, which is not feasible with linear regression (Liñán et al., 2013). In particular, SEM is permitted to perform the analysis for constructs that are indirectly measured through multiple indicators. SmartPLS 3 software was used to estimate the model (Ringle et al., 2015). It is one of the appropriate software for estimating interrelationships between the variables through partial least squares of structural equation modeling. The software is user-friendly and enabled the assessment of both measurement models and structural models. Inner and out model parameters were estimated. Descriptive statistics were computed through SPSS version 22 (IBM Corp., 2013).

## 4 RESULTS

### 4.1 Descriptive statistics

Analysis began with exploring the data through descriptive statistics (see Table 2). The level of entrepreneurial knowledge of undergraduate students in Tanzania is moderate (3.07). Entrepreneurial knowledge construct has also the least consistent scores, as indicated by high standard deviation. Among motivational factors for entrepreneurship, the attitude had the highest mean (4.13), whereas subjective norms had the lowest mean (3.07). On average, undergraduate students in Tanzania intend to venture into entrepreneurship, where immediate entrepreneurial intentions (4.06) are slight above future entrepreneurial intentions (3.92).

*Table 2 Mean and standard deviation of the constructs*

No.	Construct	Indicators	Mean	Standard deviation
1	Future entrepreneurial intentions*	03	3.92	0.86
2	Immediate entrepreneurial intentions*	09	4.06	0.84
3	Attitude*	05	4.13	0.84
4	Perceived Behavioural control*	08	4.08	0.85
5	Subjective norm*	06	3.73	0.84
6	Entrepreneurial knowledge**	06	3.07	0.99

(Source : own processing)

*Note:* \*Based on five-point Likert scale, where: 1 strongly disagree, 5 strongly agree; \*\* based on five-point Likert scale, where: 1 not at all true, 5 very true

#### 4.2 Measurement model evaluation

Thereafter, the measurement model of all reflective measured indicators was evaluated. The analysis included checking for the quality of measurements. In particular, this involved checking for the reliability and validity of measurements as presented in the first panel of Table 3. All indicators except a few had indicators loading above the threshold loading of 0.708 (Hair et al., 2019). This means most of the constructs explain more than 50 percent of indicators' variance. Few indicators had a loading below 0.708, yet the lowest was 0.58 which is still acceptable (Rwehumbiza, 2017). All constructs passed the reliability test measured in terms of composite reliability, that is, they ranged between 0.70 and 0.95, and Cronbach's Alpha of at least 0.70 (Hair et al., 2019). This means items were necessary and not identical (Sarstedt et al., 2021). Next, the convergent validity was tested through average variance extracted (AVE).

The average variance extracted (AVE) for all measures, except one product variable for the immediate entrepreneurial intention was above 0.50, implying that convergent validity was achieved (Hair et al., 2019; Sarstedt et al., 2021). This indicates that constructs explain at least 50% variance of their items (Hair et al., 2019). Lastly, the constructs were tested on how they are distinct from other constructs in the structural model. The heterotrait-monotrait (HTMT) values for all constructs except behavioural controls were below the threshold of 0.9 (Hair et al., 2019; Henseler et al., 2014; 2015). This implies that there were no discriminant validity problems. Constructs were sufficiently empirically distinct from other constructs included in the model (Sarstedt et al., 2021). As indicated in Table 3, there is no apparent difference between the measurement model for immediate intentions and future intentions. Having met the requirements for the measurement model, the next step is the evaluation of the structural model.

Table 3 Model evaluation results

Criterion	Rule of thumb	Suggested reference	Evaluation results (Immediate)	Evaluation results (Future)
<b><i>Evaluation of the Measurement model (Outer) Model: Dependent variable: FEI; IEI</i></b>				
Indicators loading	$\geq 0.708$	Hair et al (2019)	All passed except, 2 indicators for subjective norms	All passed except, 2 indicators for subjective norms, 1 for future intentions
Composite reliability	0.70 to 0.95	Hair et al.(2019)	Passed, all within the range	Passed, all within the range
Cronbach's Alpha	$\geq 0.70$	Hair et al. (2019)	Passed, all above the minimum	Passed, all above the minimum
Convergent validity	$AVE \geq 0.50$	Hair et al. (2019); Sarstedt et al.(2021)	Passed, except one product variable	Passed, all above the minimum
Discriminant validity	$HTMT \leq 0.85/0.90$	Hair et al. (2019); Sarstedt et al.(2021)	All passed, except for Behavioural control	All passed, except for Behavioural control

<b><i>Evaluation of the Structural (inner) Model: Dependent variable: FEI; IEI</i></b>				
Collinearity issues	Probable (critical), VIF $\geq 5$ Possible, VIF $\geq 3-5$ Ideal, VIF $< 3$	Hair et al. (2019); Sarstedt et al.(2021)	Passed, except for product variable of AT and BC	Passed, except for product variable of AT and BC
Coefficient of determination, $R^2$	0.25; 0.50; 0.75: weak, moderate; substantial, respectively	Hair et al. (2019)	0.64 (moderate)	0.52 (moderate)
Predictive relevance, $Q^2$	0; 0.25; 0.50: <i>small; medium; large, respectively</i>	Hair et al. (2019); Rigdon (2014)	0.40 (medium)	0.29 (medium)
<b><i>Model fit</i></b>				
SRMR	$\leq 0.08$	Henseler et al. (2015)	0.06	0.06

(Source : own processing)

#### 4.3 Structural model evaluation

Two structural models were evaluated. The two models had the same predictor constructs but different endogenous constructs, that is, immediate entrepreneurial intentions and future entrepreneurial intentions. The second panel of Table 3 presents the evaluation results summary for the structural model. First, the collinearity was checked to avoid biasing or distorting regression results (Hair et al., 2019; Sarstedt et al., 2021). Collinearity was checked by calculating the variance inflation factor (VIF). This was done through bootstrapping with a default sample of 500 (Garson, 2016). VIF values for all predictor constructs were below the threshold of 5, except for the product of EK and AT and the product of EK and BC, which were slightly above 5 (Hair et al, 2019). Thus, it is adequate to conclude that collinearity was not a problem in the two structural models.

Both models had a moderate explanatory power ( $R^2$ ) (Hair et al., 2019; Sarstedt et al., 2021), that is, 64 percent for the first model (immediate intentions) and 52 percent for the second model (future intentions). This means predictor constructs explain about 64% and 52% of the variance in immediate intention and future intention, respectively. The coefficient of determination,  $R^2$  represents in-sample predictive power (Rigdon, 2012). The explanatory powers are good and comparable to previous studies applying the structural equation model (Liñán et al., 2013). The two models had medium predictive relevance to the PLS-path model (Hair et al., 2019). This refers to out-of-sample predictive power (Rigdon, 2014), where the first model (immediate intentions) seems to have more predictive power than the second model (future intentions). Additionally, the model fit was examined using standard root mean square residual (SRMR) (Henseler et al., 2014, 2015). Both models, that is, immediate intention and future intention, had SRMR below the threshold of 0.08, implying that the models were correctly specified. Nevertheless, these results should be interpreted with caution as measures for model fit for PLS-SEM are premature and not universally accepted (Hair et al., 2019).

Table 4 presents the results of the structural equation model of entrepreneurial intentions. The attempt was done to test these hypotheses for entrepreneurial intention in two different time horizons, that is, immediate and future. Essentially, the paper examines if there any difference on the influence of entrepreneurial knowledge on immediate and future entrepreneurial intentions. For the purpose of this

paper, future refers to time period from 10 years or above. The first panel shows the result of the model for immediate entrepreneurial intentions (Model I), whereas the second panel presents the result of the model for future entrepreneurial intentions (Model II).

*Table 4 Significance test for immediate and future entrepreneurial intentions*

Path	Hypot thesis Code	Path coeffic ients	t-values	Statistically significant?	p- values	95% confidence intervals
<i>Model I: Immediate entrepreneurial intention</i>						
SN → IEI	H <sub>1</sub>	0.05	0.73	No	<b>0.47</b>	(-0.06; 0.18)
AT → IEI	H <sub>2</sub>	0.31	3.94	***Yes	<b>0.00</b>	(0.15; 0.45)
BC → IEI	H <sub>3</sub>	0.42	5.46	***Yes	<b>0.00</b>	(0.26; 0.56)
EK → IEI	H <sub>4</sub>	0.12	2.84	***Yes	<b>0.01</b>	(0.05; 0.20)
SNxEK → IEI	H <sub>5</sub>	0.07	1.05	No	<b>0.30</b>	(-0.10; 0.17)
ATxEK → IEI	H <sub>6</sub>	0.06	0.77	No	<b>0.44</b>	(-0.07; 0.21)
BCxEK → IEI	H <sub>7</sub>	-0.17	2.02	**Yes	<b>0.04</b>	(-0.34; -0.01)
<i>Model II: Future entrepreneurial intention</i>						
SN → FEI	H <sub>1</sub>	0.17	2.59	**Yes	<b>0.01</b>	(0.04; 0.30)
AT → FEI	H <sub>2</sub>	0.20	2.85	*** Yes	<b>0.00</b>	(0.06; 0.32)
BC → FEI	H <sub>3</sub>	0.32	3.82	*** Yes	<b>0.00</b>	(0.17; 0.48)
EK → FEI	H <sub>4</sub>	0.05	1.05	No	<b>0.29</b>	(-0.03; 0.16)
SNxEK → FEI	H <sub>5</sub>	0.11	1.39	No	<b>0.16</b>	(-0.06; 0.25)
ATxEK → FEI	H <sub>6</sub>	-0.03	0.40	No	<b>0.69</b>	(-0.20; 0.11)
BCxEK → FEI	H <sub>7</sub>	-0.19	2.09	** Yes	<b>0.04</b>	(-0.38; -0.03)

(Source : own processing)

Notes: n= 335. FEI, Future Entrepreneurial Intention; IEI, Immediate Entrepreneurial Intention; AT, Attitude; EK, Entrepreneurial Knowledge; BC, Behaviour Control; SN, Subjective Norm. \*\*p<0.05; \*\*\*p<0.01

The following hypotheses were tested:

- H1: There is a positive relationship between subjective norms and entrepreneurial intention
- H2: There is a positive relationship between attitude and entrepreneurial intention
- H3: There is a positive relationship between perceived behavioural control and entrepreneurial intention
- H4: There is positive relationship between entrepreneurial knowledge and entrepreneurial intention
- H5: There is a significant moderating effect of entrepreneurial knowledge on the relationship between subjective norms and entrepreneurial intention
- H6: There is a significant moderating effect of entrepreneurial knowledge on the relationship between attitude and entrepreneurial intention
- H7: There is a significant moderating effect of entrepreneurial knowledge on the relationship between perceived behavioural control and entrepreneurial intention

Generally, the three motivation factors have a positive effect on both immediate and future entrepreneurial intentions, but with varying levels of significance. For example, the effect of the

subjective norm (H1) is positive but insignificant for immediate entrepreneurial intention and significant for future entrepreneurial intention (Model II). Regarding the effect of attitude and perceived behavioural, the findings reveal a positive significant effect of attitude and perceived behavioural on both immediate and future entrepreneurial intentions. Thus, findings support the hypotheses, that is, H2 and H3. The results also show that the effect of entrepreneurial knowledge (H4) is positive for both models, albeit the differences in significance. Accordingly, the effect of the interaction terms between entrepreneurial education and subjective norm (H5) is positive, whereas the natural effect of interaction terms between entrepreneurial knowledge and attitude (H6) for immediate and future intentions is different. These results do not support the two hypotheses on interaction terms. Finally, the effect of the interaction term between entrepreneurial knowledge and perceived behavioural control (H7) is negative on both immediate and future entrepreneurial intentions.

## 5 DISCUSSIONS

This study examined the influence of entrepreneurial knowledge on the relationship between motivational factors and entrepreneurial intentions. Particularly, the study examined the way entrepreneurial knowledge moderates the relationship between subjective norms and entrepreneurial intention, attitude and entrepreneurial intention, and perceived behavioural control and entrepreneurial intention. In addition, the paper examined the effect of motivational factors, that is, subjective norm, attitude, and perceived behavioural control on the entrepreneurial intentions of university finalist students. The attempt was done to explore the influence of the two different time horizons, that is, short-term (immediate) and long-term (future). Generally, the present study reveals entrepreneurial knowledge significantly moderates the relationship between perceived behavioural control for both immediate and future entrepreneurial intentions. The moderation effect of entrepreneurship on behavioural control is statistically significant. That is, a higher level of the interaction term between entrepreneurial knowledge and perceived behavioural control is associated with lower entrepreneurial intentions. In addition, the negative moderation effect seems to be slightly stronger for future entrepreneurial intentions than immediate entrepreneurial intentions. The findings suggest that finalist students are likely to venture into entrepreneurship soon after they complete their studies but less so in the long-term (say, 10 years after completion of their studies). This may mean entrepreneurship is only a short to medium terms solution to youth employment in Tanzania. Finalist students are more likely to look for paid employment in the long-term. The findings seem to reflect the low survival rate of start-ups in Africa as Page and Söderbom (2015) document. Our findings on the moderation effect are comparable with preceding studies (e.g., Fernández-Pérez et al., 2019; Anwar et al., 2020; Hassan et al., 2020).

Also, the study suggests that entrepreneurial knowledge does not significantly moderate the relationship between subjective norm and entrepreneurial intention, and the relationship between attitude and entrepreneurial intentions. These findings corroborate those of Fernández-Pérez et al. (2019), who found a weak moderation effect of education on AT. Nonetheless, the author did not cover SN. The findings do not match with Anwar et al. (2020), who reported a significant moderation effect of entrepreneurial education on the relationship between AT and EI but admitted the influence of entrepreneurial education to be stronger on perceived behavioural control. Anwar et al. (2020) did not moderate the relationship between subjective norms and entrepreneurial intention. Liñán et al. (2013) argue that entrepreneurial knowledge tends to have less effect on SN and AT, thus the possible reasons for the insignificant moderation effect. Concerning the effect of entrepreneurial knowledge on intention, the findings show a statistically significant positive effect on immediate intentions and a statistically insignificant positive effect on future intentions. Entrepreneurial knowledge enhances the sense of capacity to create a firm (venture in entrepreneurship). This entails exposing students to the real environment where they are likely to undertake entrepreneurial activities soon after graduation.

Indeed, Liñán et al. (2013) found entrepreneurial knowledge to have an insignificant effect on SN and AT, although their focus was not on the moderation effect.

Apart from that, the findings reveal a positive significant effect of attitude and perceived behavioural on both immediate and future entrepreneurial intentions. The findings on attitude are consistent with Kim-Soon et al. (2016), who found AT to have a significant effect on both immediate and future entrepreneurial intentions. The findings that BC has a significant effect on future intention are not by previous literature, for example, Kim-Soon et al. (2016). The significant effect of BC on immediate intention was also reported by Kim-Soon et al. (2016). The significant positive effect of attitude on entrepreneurship was also reported by Ramos-Rodriguez et al. (2019) and Kim-Soon et al. (2016). Nonetheless, in this study, the effect of perceived behavioural control is found to be the strongest in both immediate and future intentions. The outperformance of perceived behavioural control among three motivational factors is documented in previous studies (e.g., Anwar et al., 2020; Rusteberg, 2013; Tambwe et al., 2020). The findings do not support the claim by Ramos-Rodriguez et al. (2019) that AT is the strongest determinant of entrepreneurial intentions. The effect of AT and BC appears stronger in the short to medium terms, that is on immediate entrepreneurial intentions. In addition to the above findings, the findings expose that the effect of the subjective norm is positive but insignificant for immediate entrepreneurial intention, and significant for future entrepreneurial intention. Kim-Soon et al. (2016) also reported a significant effect of SN on future intentions, but our findings on the effect of SN on immediate intention contradict their findings. The insignificant effect of subjective norms on entrepreneurial intention was also reported by previous studies conducted in Greece by Tsordia and Papadimitriou (2015), and in Ukraine by Solesvik et al. (2012). Notably, the subjective norm is the weakest determinant of entrepreneurial intentions in both models. This is consistent with findings reported by Carfora et al. (2021).

## **6 STUDY IMPLICATIONS**

Our study is comprehensive by examining the moderating effect of entrepreneurial knowledge on all motivational factors, thus better off than some studies such as Hassan et al. (2020) who excluded subjective norms and attitudes, and Anwar et al. (2020) who excluded subjective norms. This is among a few studies (see also Liñán et al., 2013; Roxas, 2014) moving beyond classroom training on entrepreneurship by exploring the knowledge of practical aspects of entrepreneurship. This enabled examining entrepreneurial intentions of the business and non-business students regardless of formal training on entrepreneurship. Timing of research along the career development path seems to matter (see Tsordia & Papadimitriou, 2015), thus undertaking similar research after the completion of studies may yield different results. Moreover, this study contributes to the development of a theory of planned behaviour, for example, by demonstrating that the three motivational factors have varying effects on entrepreneurial intentions in the context of moderation and different time horizons. This suggests further research on the theory of planned behaviour, despite being in use since 1991. In practice, actors may need to expose students to real-world environments earlier to better decisions about their career development, including venturing into entrepreneurship. Differentiating between immediate and future intentions made it possible to uncover students' preference for entrepreneurship as soon as they graduate while in search of paid employment. Entrepreneurship seems to be the short-term strategy to address unemployment, hence the need for the government to create more opportunities for paid employment in the long term.

## **CONCLUSION**

Entrepreneurial knowledge is found to negatively influence the relationship between perceived behaviour control and entrepreneurial intentions, both in the short-term and long term. These findings do not provide evidence that entrepreneurial knowledge influences the relationship between subjective norms and entrepreneurial intentions, and attitude and entrepreneurial intentions. The effect seems stronger in the long term, suggesting that the likelihood of the finalist students venturing into entrepreneurship is lower in 10 years or more. Thus, graduates consider entrepreneurship as an occupation soon after their graduation but hope to secure paid employment in the long term. Attitude and perceived behaviour control are found to significantly motivate the entrepreneurial intentions of finalist students, more so soon after the completion of their studies. In both time horizons, perceived behavioural control is found to be the strongest motivator. The findings suggest no effect of subjective norms as soon as students complete their studies. Subjective norms were found to be a relevant factor in the long term.

Theoretical entrepreneurship knowledge accompanied by practical aspects such as business associations and networks, business support bodies, and business development services is important in fostering an entrepreneurial culture. This is because such knowledge leads to a realistic perception of entrepreneurship and facilitates an easy transition to it. This is essential to most developing countries such as Tanzania, which pay less attention to real-life training in higher learning institutions. This seems logical as students need sufficient time to develop skills and networks before demonstrating readiness to take the risk associated with entrepreneurship. Finalist students seem to be unsure of the level of tolerance of risk soon after completing their studies. In other words, family entrepreneurial culture, investments based on personal savings, and role models are keys to making graduates pursue entrepreneurship in the long term. Along with these, there is a need for higher learning institutions to encourage students to understand the entrepreneurial environment including through short-term training and attachments or networking with the industry. To gain more insights and evidence on the influence of entrepreneurship knowledge on the relationship between motivational factors and entrepreneurial intentions, a longitudinal study is important direction for future research.

## REFERENCES

- Aikaeli, J., Mtui, J., & Tarp, F. (2021). Rural-urban migration, urbanisation and unemployment: The case of Tanzania Mainland. *African Journal of Economic Review*, 9(1), 87-108.
- Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, 50 (2): 179–211. DOI: [http://dx.doi.org/10.1016/0749-5978\(91\)90020-T](http://dx.doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I. (2002). Constructing a TPB questionnaire: conceptual and methodological considerations. Retrieved from: [http://chuang.epage.au.edu.tw/eziles/168/1168/attach/20/pta\\_41176\\_7688352\\_57138.pdf](http://chuang.epage.au.edu.tw/eziles/168/1168/attach/20/pta_41176_7688352_57138.pdf)
- Ambad, S. N. A., & Damit, D. H. D. A. (2016). Determinants of entrepreneurial intention among undergraduate students in Malaysia. *Procedia-Economics and Finance*, 37, 108-114.
- Anwar, I., Saleem, I., Islam, K. B., Thoudam, P. and Khan, R. (2020). Entrepreneurial intention among female university students: examining the moderating role of entrepreneurial education. *Journal for International Business and Entrepreneurship Development*, 12(4), 217-234.
- Carfora, V., Cavallo, C., Catellani, P., Del Giudice, T., & Cicia, G. (2021). Why do consumers intend to purchase natural food? Integrating theory of planned behavior, value-belief-norm theory, and trust. *Nutrients*, 13(6), 1904.
- Davidsson, P. (1995). Déterminants of entrepreneurial intentions. RENT IX Workshop. Piacenza, Italy.
- Fayolle, A. (2005). Evaluation of entrepreneurship education: behaviour performing or intention increasing? *International Journal of Entrepreneurship and Small*, 2(1), 89–98.



- Fernández-Pérez, V., Montes-Merino, A., Rodríguez-Ariza, L., & Galicia, P. E. A. (2019). Emotional competencies and cognitive antecedents in shaping student's entrepreneurial intention: the moderating role of entrepreneurship education. *International entrepreneurship and management journal*, 15(1), 281-305.
- Garson, G.D. (2016) Partial Least Squares: Regression and Structural Equation Models. Statistical Associates Publishers, Asheboro.
- Gyamfi, G.D. (2014). Evaluating entrepreneurship education as a tool for economic growth: The Ghanaian experience. *British Journal of Education, Society and Behavioural Science*, 4(3), 318-335
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24.
- Hassan, A., Saleem, I., Anwar, I., & Hussain, S. A. (2020). Entrepreneurial intention of Indian university students: The role of opportunity recognition and entrepreneurship education. *Education and Training*, 62(7/8), 843–861
- Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., Ketchen, D. J., Hair, J. F., Hult, G. T. M., & Calantone, R. J. (2014). Common Beliefs and Reality about Partial Least Squares: Comments on Rönkkö and Evermann (2013), *Organizational Research Methods*, 17(2): 182-209.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135.
- IBM Corp. (2013). *IBM SPSS Statistics for Windows, Version 22.0*. Armonk, NY: IBM Corp.
- Keat, O.Y., Selvarajah, C., & Meyer, D. (2011). Inclination towards entrepreneurship among university students: An empirical study of Malaysian university students. *International Journal of Business and Social Science*, 2 (4): 206-220.
- Kim-Soon, N., Ahmad, A. R., & Ibrahim, N. N. (2016). 'Theory of planned behavior: undergraduates' entrepreneurial motivation and entrepreneurship career intention at a public university. *Journal of Entrepreneurship: Research and Practice*, 2016, 1-14.
- Kolvereid, L. (1996). Prediction of employment status choice intentions. *Entrepreneurship Theory and practice*, 21(1), 47-58.
- Krueger, N. F., & Carsrud, A. L. (1993). Entrepreneurial intentions: Applying the theory of planned behaviour. *Entrepreneurship and Regional Development*, 5(4), 315-330.
- Krueger, N.F., Reilly, M.D., & Carsrud, A.L. (2000). Competing models of entrepreneurial intentions. *J. Bus. Vent.* 15:411–432.
- Kuswanto, M., Suratno, M., & Wulandari, M. T. (2022). The impact of entrepreneurial attitudes and entrepreneurial competence on students'business success. *International Journal of Entrepreneurial Knowledge*, 10(2), 42-53. doi:10.37335/ijek.v10i2.169
- Ledi, K. K., Ameza-Xemalordzo, E., & Owusu, J. (2022). The role of entrepreneurial attitude and opportunity recognition on entrepreneurial intention of university students. *International Journal of Entrepreneurial Knowledge*, 10(2), 54-67. doi:10.37335/ijek.v10i2.155
- Liñán, F., & Chen, Y. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship Theory and Practice*, pp. 593–618.
- Liñán, F., Nabi, G., & Krueger, N. (2013). British and Spanish entrepreneurial intentions: A comparative study. *Revista de economía Mundial*, (33), 73-103.
- Liñán, F., Santos, F. J., & Fernández, J. (2011). The influence of perceptions on potential entrepreneurs. *International Entrepreneurship and Management Journal*, 7(3), 373–390.
- Mangasini, A., & Gabagambi, D. M. (2016). "Barriers to business start-up among Tanzanian university graduates: Evidence from the University of Dar es Salaam. *Global Business Review* 17 (1): 16-37.
- Miralles, F., Giones, F., & Riverola, C. (2016). Evaluating the impact of prior experience in entrepreneurial intention. *International Entrepreneurship and Management Journal*, 12(3), 791-813.

- Mori, N., & Fulgence, K. (2009). Social entrepreneurship in Tanzania: Assessment of enabling environment. Paper presented at 2<sup>nd</sup> EMES International Conference on Social Enterprise, Trento (Italy), 1-4 July 2009.
- Mwantimwa, K. (2019). Higher institution education and entrepreneurial knowledge acquisition of graduates in Tanzania. *Current Politics and Economics of Africa*, 12 (2/3): 209-229.
- Mwantimwa, K., Ilomo, M., Mwabungulu, E., Mbilinyi, D., Possi, M., and Matonya, M. (2022). Graduate'future intention to venture entrepreneurial activities: the foreseen personal, sectoral and macro barriers. *Journal of Global Entrepreneurship Research*, 1-13.
- Mwantimwa, K., Ndege, N., Atela, J., & Hall, A. (2021). Scaling innovation Hubs: impact on knowledge, innovation and entrepreneurial ecosystems in Tanzania. *Journal of Innovation Management*, 9(2), 39-63.
- Mwasalwiba, E. S. (2012). University entrepreneurship education in Tanzania: teaching context, students profiles, expectations and outcomes. Doctoral Dissertation, Vrije Universiteit, Amsterdam.
- Olomi, D, R. (2009). *African entrepreneurship and small business development context and process*. Dar es Salaam: Otme Company Limited.
- Olomi, D., Charles, G., & Mori, N. (2013). Study on establishment of special scheme for knowledge intensive and innovative agriculture and agribusiness start-ups. Institute of Management and Entrepreneurship Development. Retrieved 29 September 2019 from: <https://slideplayer.com/slide/6881775/>
- Page, J., & Söderbom, M. (2015). Is small beautiful? Small enterprise, aid and employment in Africa. *African Development Review*, 27(S1), 44-55.
- Postigo, S., & Tamborini, F. (2002). Entrepreneurship education in Argentina: The case of San Andres University. International Entrepreneurship Education and Training Conference, IntEnt02, Kuala Lumpur, Malaysia.
- Ramos-Rodríguez, A. R., Medina-Garrido, J. A., & Ruiz-Navarro, J. (2019). Why not now? Intended timing in entrepreneurial intentions. *International Entrepreneurship and Management Journal*, 1-26.
- Rigdon, E. E. (2012). Rethinking partial least squares path modeling: In praise of simple methods. *Long Range Planning*, 45(5-6), 341-358.
- Rigdon, E. E. (2014). Rethinking partial least squares path modeling: breaking chains and forging ahead. *Long Range Planning*, 47(3), 161-167.
- Ringle, Christian M., Wende, S., & Becker, Jan-Michael. (2015). SmartPLS 3. Bönningstedt: SmartPLS. Retrieved from <http://www.smartpls.com>
- Roxas, B. (2014). Effects of entrepreneurial knowledge on entrepreneurial intentions: a longitudinal study of selected South-east Asian business students. *Journal of Education and Work*, 27(4), 432-453.
- Roy, R., Akhtar, F., & Das, N. (2017). Entrepreneurial intention among science and technology students in India: extending the theory of planned behavior. *International Entrepreneurship and Management Journal*, 13(4), 1013-1041.
- Rwehumbiza, D. A. (2017). International expansion and unobserved heterogeneity in critical success factors: Empirical evidence from Tanzania and Kenya. *African Journal of Economic and Management Studies*, 8(2), 235-252.
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial least squares structural equation modeling. In *Handbook of market research* (pp. 587-632). Cham: Springer International Publishing.
- Schlaegel, C., & Koenig, M. (2014). Determinants of entrepreneurial intent: a meta-analytic test and integration of competing models. *Entrepreneurship Theory and Practice*, 38(2), 291-332.
- Sher, A., Adil, S. A., Mushtaq, K., Ali, A., & Hussain, M. (2017). An investigation of entrepreneurial intentions of agricultural students. *Pakistan Journal of Agricultural Sciences*, 54(4), 943-947.
- Solesvik, M., Westhead, P., Kolvereid, L., & Matlay, H. (2012). Student intentions to become selfemployed: the Ukrainian context. *Journal of Small Business and Enterprise Development*, 19 (3): 441-460.

- Tambwe, M., & Mbise, E. R. C. (2020). Determinants of farmers' entrepreneurial intention in Tanzanian agricultural sector: a structural modelling approach. *Adv Soc Sci Res J*, 7, 376-396.
- Tsordia, C., & Papadimitriou, D. (2015). The role of theory of planned behavior on entrepreneurial intention of Greek business students. *International Journal of Synergy and Research*, 4(1).
- Urban, B., & Chantson, J. (2019). Academic entrepreneurship in South Africa: testing for entrepreneurial intentions. *The Journal of Technology Transfer*, 44(3), 948-980.
- Wei-Loon, Koe, Sa'ari, J.R., Majid, I.A., & Ismail, K. (2012). Determinants of entrepreneurial intention among millennial generation. *Social and Behavioral Sciences*, 40, 197 –208.
- Yıldırım, N., Çakır, Ö., & Aşkun, O. B. (2016). Ready to dare? A case study on the entrepreneurial intentions of business and engineering students in Turkey. *Procedia-Social and Behavioral Sciences*, 229, 277-288.
- Yurtkoru, E. S., Kuşcu, Z. K., & Doğanay, A. (2014). Exploring the antecedents of entrepreneurial intention on Turkish university students. *Procedia-Social and Behavioral Sciences*, 150, 841-850.
- Zhang, K. (2018). Theory of Planned Behavior: Origins, development and future direction. *International Journal of Humanities and Social Science Invention*, 7(5), 76-83

## BRIEF DESCRIPTION OF AUTHORS:

### **Mesia Ilomo, Lecturer**

ORCID ID: <https://orcid.org/0000-0002-5523-7318>

Affiliation: Department of Finance, University of Dar es Salaam Business School, Dar es Salaam, Tanzania, <https://www.udsm.ac.tz/>

Email: [ilomo.mesia@udsm.ac.tz](mailto:ilomo.mesia@udsm.ac.tz)

Mesia Ilomo is a lecturer and researcher at the University of Dar es Salaam Business School (UDBS), Tanzania. He has a PhD in Business from the University of Dar es Salaam. Mesia is interested in qualitative and quantitative research on international trade, entrepreneurship, gender, finance, and policy analysis. He has provided consultancy and advisory services to various local and international institutions. As a member of the academic staff at the University of Dar es Salaam, Mesia teaches modelling for trade policy analysis, trade in services, investments in emerging markets, and trade and business negotiations at the postgraduate level. Also, he teaches international business finance, financial analysis, risk management, and insurance at the undergraduate level. Mesia also served as a part-time lecturer at the Law School of Tanzania, African Institute for Mathematical Sciences, and Ardhi University.

### **Kelefa Mwantimwa, Associate Professor**

ORCID ID: <https://orcid.org/0000-0003-4050-744X>

Affiliation: Information Studies Unit, University of Dar es Salaam, Dar es Salaam, Tanzania, [www.udsm.ac.tz](http://www.udsm.ac.tz)

Email: [mwantimwa@udsm.ac.tz](mailto:mwantimwa@udsm.ac.tz)

Kelefa Mwantimwa is an Associate Professor at the University of Dar es Salaam. He has a PhD in Library and Information Science from the University of Antwerp, Belgium. Kelefa is a multidisciplinary researcher with more than twelve years of research experience. He is involved in teaching, research, and consultancy activities. His research interests are information, knowledge, records, and innovation systems.

*Annex 1: Measurement model evaluation results*

Construct	No.	Statements	Loading	Composite reliability	Average
<b>Behavioural control (Self-efficacy beliefs)</b>	BC1	To be my own boss	<b>0.83</b>		
	BC2	To realize my dream	<b>0.85</b>		
	BC3	Increase my prestige and status	<b>0.74</b>		
	BC4	For my personal freedom	<b>0.86</b>		
	BC5	Enjoy myself	<b>0.82</b>		
	BC6	Good economic environment	<b>0.86</b>		
	BC7	To challenge myself	<b>0.77</b>		
	BC8	For my own satisfaction and growth	<b>0.74</b>		
<b>Subjective norm (Tolerance for risk)</b>	SN1	To use the skill learned in the university	<b>0.64</b>		
	SN2	Entrepreneurial family culture	<b>0.76</b>		
	SN3	Follow the example of someone that I admired	<b>0.75</b>		
	SN4	To invest personal savings	<b>0.82</b>		
	SN5	To maintain my family	<b>0.79</b>		
	SN6	I enjoy taking risk	<b>0.67</b>		
<b>Attitude (desirability) towards entrepreneurship</b>	AT1	To provide job security	<b>0.74</b>		
	AT2	To provide employment	<b>0.88</b>		
	AT3	To take advantage of my creative talent	<b>0.89</b>		
	AT4	Earn a reasonable living	<b>0.88</b>		
	AT5	Opportunities in the market	<b>0.86</b>		
<b>Future intentions</b>	FEI1	I'm determined to create a firm in the future	<b>0.87</b>		
	FEI2	I will start my business in the next ten years	<b>0.58</b>		
	FEI3	I have strong intention to start a business someday	<b>0.86</b>		
<b>Immediate intentions</b>	IEI1	I prefer to be an entrepreneur rather than an employee in a Company	<b>0.80</b>		
	IEI2	I am prepared to do anything to be an entrepreneur	<b>0.86</b>		
	IEI3	I am very interested in being an entrepreneur	<b>0.88</b>		
	IEI4	I shall work very hard to become an entrepreneur	<b>0.91</b>		
	IEI5	I have already prepared myself to become an entrepreneur	<b>0.77</b>		
	IEI6	My professional goal is to become an entrepreneur	<b>0.77</b>		
	IEI7	I'll put every effort to start and run my own business	<b>0.85</b>		
	IEI8	I have thought seriously to start my own business after completing my study	<b>0.83</b>		
	IEI9	I want to be my own boss	<b>0.79</b>		
<b>Entrepreneurial knowledge</b>	EK1	I have sufficient knowledge of the legal requirements to start a business	<b>0.86</b>		
	EK2	I know how to look for resources (e.g.	<b>0.84</b>		

		financial) to set up a business			
	EK3	I have sufficient knowledge in organising a business	<b>0.90</b>		
	EK4	I have sufficient knowledge in marketing a product/service	<b>0.88</b>		
	EK5	I have sufficient knowledge in commercialising a business idea	<b>0.85</b>		
	EK6	I have sufficient knowledge in managing a business	<b>0.89</b>		