The antecedents of University Students' Entrepreneurship Intention. The Theory of Planned Behaviour Viewpoint

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Abstract

Finding out whether university students will take up entrepreneurship on graduation bodes well for any economy especially the developing ones. This is because it will help governments, and other stakeholders to plan better. Importantly, if university students embrace an entrepreneurial career, it will reduce unemployment and subsequently mitigate the scourge of poverty and inequality. This
study was quantitative targeting university students to understand how they perceive entrepreneurship, what they think entrepreneurship is, what they consider as the factors that may discourage them from considering an entrepreneurial career, and also whether they think of themselves as capable of venturing into entrepreneurship. Using SPSS, we analyzed the data which affirmed the three hypotheses that student’s entrepreneurship intention can be positively and significantly motivated and persuaded. Also, the result confirmed that student’s entrepreneurship intention could be positively influenced by their perception of what entrepreneurship is and the perceived characteristics of an entrepreneur. Some further research directions as well as implications are flagged.

Key words
Entrepreneurship intention, entrepreneurial career, entrepreneurship education, career development, perception, motivation.

How to cite this article

1. Introduction
As Africa remains increasingly challenged with high unemployment, researchers are increasing their efforts to find ways of combating the trend. In that strive, several remedies have been suggested, namely the obliteration of nepotism, favoritism, and enforcing good governance practice (Du Toit et al., 2018; Mainali, 2019; Yasin et al. 2019; Desta, 2019). Further, the literature suggests providing adequate support for entrepreneurs (Gwija et al, 2014), and intensive entrepreneurship education across all schooling levels (Nchu, 2015; Enombo 2015). Within the literature too is the question of whether students do have the intention to take up an entrepreneurial activity upon graduation from college or university (Iwu et al, 2019; Fatoki, 2019).

Adjunct to that is the call to determine what might motivate students to be entrepreneurially driven upon graduation (Ebewo et al., 2017; Iwu et al., 2016; Aderibigbe et al., 2019; Kim-Soon et al., 2016). It is important to understand how students perceive entrepreneurship, what they consider as the factors that may discourage them from considering an entrepreneurial career, and whether they think of themselves as capable of venturing into entrepreneurship. Entrepreneurship discourse (for instance Udo-Imeh, Magaji, Hamidu, & Yakubu, 2016; Potishuk & Kratzer, 2017; Tarekegne, & Gelaneh, 2019) argues that if students’ perceptions of entrepreneurship, and their entrepreneurship uptake propensity on or after graduation, are determined, this will enable governments and other stakeholders such as businesses and education providers to understand required actions towards facilitating and sustaining their entrepreneurial intention. This is the
trajectory that this study follows bearing in mind that doing that will improve the socio-economic conditions of a country.

The 2015 UN Sustainable Development Goals (SDGs) make a strong call for quality education and sustainable economic growth especially for developing economies. It is fair to assume that the SDGs argue that quality education ideally furthers one’s prospect of realizing decent work opportunities that advance the economic growth of a nation. To achieve this requires interventions across the value chain. An integral part of this value chain is the university or college (Sachs, 2015; Leal Filho, et al. 2019).

Education is a strategic tool for the development of South Africa’s human capital potential (van Broekhuizen, 2016; Lau et al 2018; Martinez-Vargas et al 2020). Thus, located in the Western province of South Africa, this study aims to determine the factors that may influence the propensity of university students to pursue an entrepreneurial career on graduation. Surveying students of an institution of higher learning, we were able to derive in-depth answers to the underlying questions for this study using a self-administered questionnaire. The data obtained were analyzed descriptively with the help of SPSS.

In the following section, we introduce the Theory of Planned Behavior (TPB) to explain how a student’s intention is moderated by factors such as beliefs, perceptions, and motivation. Subsequently, we were able to confirm the utility of the concepts of entrepreneurship intention and human motivation to explain why people (in the case of our study, university students) pursue certain objectives. It was equally clear through the literature review that perception matters in the way humans assess any perspective and so we offer a review of the concept of perception in the literature survey.

2. Literature Review

2.1 The Theory of Planned Behavior

The Theory of planned behavior (TPB) is a social cognitive theory that illustrates human intentions concerning their behavior. Founded on the theory of reasoned action (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980), that seeks to understand behavior cues, TPB suggests three antecedents that influence an individual’s behavioral intentions (Ajzen, 1991, 2011). These antecedents include personal attitude, subjective norm, and perceived behavioral control. The personal attitude of an individual is reflected in their specific behavior. Research shows that the beliefs, values, and capabilities of an individual affect the choices and decisions they make (Urban & Chantson, 2017; Huyghe & Knockaer, 2015; Ajzen, 2011). This perhaps suggests that individuals who believe and know that they can succeed in an entrepreneurial venture will do the needful to succeed. Further to this, Ajzen (2001, 2002) affirms that the perceived behavior of having the necessary characteristics to succeed in an entrepreneurial venture will likely influence the intention to engage in entrepreneurial activity.
The subjective norm reflects the behavior of family and friends towards an individual engaging in certain behavior. Urban and Chantson (2017) opine that the behavior of an individual is influenced by the beliefs and values of those close to the individual such as family, friends, colleagues, mentors, and role models. These influential individuals especially peers and role models affect the individual's intention to engage in any entrepreneurial activity. According to Kautonen, van Gelderen, and Fink, (2015), an individual will engage in a behavior when those close to him or her have a positive expectation towards that behavior. Hence, students are likely to be motivated to pursue entrepreneurship by the presence of role models and the acceptance and encouragement of their family and friends.

Perceived behavioral control denotes that an individual’s ability to facilitate, hinder or engage in a particular behavior affects the individual’s ability to engage in that behavior (Mwange 2018; Urban & Chantson 2017; Ajzen 2002). When an individual has greater control of exhibiting a behavior, there is a greater intention or effort made to achieve that goal or behavior.

In Ajzen’s theory of planned behavior, the intentions of an individual are the immediate antecedents to perform the behavior. The higher the intention to engage in any given behavior, the higher the likelihood that the behavior will be executed. This theory posits that if a behavior is planned and intentional, it is more likely to occur.

### 2.2 Entrepreneurship Intention

Entrepreneurship intention literature documents several definitions. For example, Bird (1988) views entrepreneurship intention as the state of mind that directs and guides the actions of the entrepreneur towards the development and the implementation of new business concepts, while Thompson (2009) describes it as a self-acknowledged conviction by someone who intends to set up a new business venture and sets a plan to achieve it. On their part, Doan, Jeff, and Ehrhardt (2011) note that entrepreneurship intention is an individual’s desire and determination to engage in new venture creation.

Entrepreneurship intention can therefore be said to be the trigger to the creation of an enterprise. However, simply having an intention does not equate to actions though an intention may lead to action. Intention thus constitutes setting up a plan of action. Urban and Chantson (2017) note that the cognitive activity of an individual can be portrayed through self-motivation and purposive action. This means that for an individual to engage in any activity he or she must be self-motivated to pursue that venture. Such motivation may have roots in sociological and economical imperatives and as such also influence the behavioral outcomes of an individual (Ajike, Nnorom, Akinlabi, Onyia & Kwarbai, 2015). Mwange (2018) argues that entrepreneurial intention can be considered as an important determinant of entrepreneurial behavior. The expectation, attitude, and belief of an individual determine his or her intentions and eventually influence his or her actions.

The antecedents of entrepreneurial intentions are critical to the understanding of entrepreneurial venture creation and success. Social factors such as values and beliefs have been found to affect the tendency of an individual towards entrepreneurship. Consumers' habits and lifestyles are some
of the social factors that influence how an individual operates and interacts. Other factors that motivate entrepreneurs will include the need for achievement, commitment and dedication, passion, perseverance, creativity and to have an eye for opportunity. Research has proven that these inherent psychological and personality traits play a vital role in shaping the entrepreneurial intentions of an individual (Karimi, Biemans, Mahdei, Lans, Chizari, & Mulder, 2015).

Intention arises from a deliberately planned behavior suggesting that it is important to understand why some people choose certain careers, such as becoming entrepreneurs. Understanding what motivates some people to become entrepreneurs is a complex process that involves the interaction of different elements.

### 2.3 Entrepreneurship Motivation

The motivation for entrepreneurship stems from the need for autonomy, to be in control of one's time and decisions (Udo-Imeh, Magaji, Hamidu, & Yakubu, 2016; Gwija et al, 2014, Iwu et al, 2016). Several other factors motivate entrepreneurs, some of which are profit-based, continuing a family business, loss of employment, and subsequently pushed into entrepreneurship by necessity, for social change and development, as well as a sense of purpose or achievement (GEM, 2020). Entrepreneurs, therefore, have a mixture of motivations depending on the context in which they are.

Entrepreneurship motivation is unique and different in everyone suggesting that what motivates one person to take up entrepreneurship is unique to that individual’s background and context.

Some theories of motivation have shed some light on the reasons why people choose entrepreneurship as a career. Victor Vroom’s (1964) expectancy theory argues that one will pursue a task if one is convinced that he possesses the requisite ability to understand and do well in the task. From a reward perspective, it can be argued that the ability to carry out a task is somewhat related to one's self-esteem which relates to one's pursuit of achievement need. While examining how role models persuaded students to take up an entrepreneurial career, Brunel, Laviolette, and Radu-Lefebvre (2017) found that students’ self-efficacy and entrepreneurial intention were significantly influenced by their self-esteem. Drawing from Pihie and Akmaliah (2009), one's self-efficacy can lead to the choice of a career in entrepreneurship if universities enhance their academic strategies. Researchers have equally drawn from Abraham Maslow's hierarchical theory of motivation to explain how some people are drawn into survivalist entrepreneurship. As far back as 1995, Carland, Carland, and Carland said: "... entrepreneurship can provide the financial means to achieve basic needs, but it can also provide a vehicle by which an individual can obtain social acceptance and self-esteem by providing an opportunity to create a lasting and highly visible institution. Further, an individual could perceive his or her success in business as the zenith of self-actualization."

Entrepreneurs, therefore, have a mixture of motivations depending on the context in which they are a major driver of most economies. Government, policymakers, and all stakeholders ought to
know what motivates entrepreneurs, to better align the environment for entrepreneurship to thrive.

2.4 Perception

Perception is a crucial attribute when determining how an individual decides to engage in any entrepreneurial venture. Perception can be subdivided into 3 types, namely perception of self, perception of the environment, and perception of others (Gomezeli & Kusce, 2013; Peterson, 2017).

Peterson (2017) argues that the way an entrepreneur perceives himself/herself sets the pace for the business. This suggests that if someone perceives a positive internal locus of control, he or she may be reasonably persuaded to pursue an entrepreneurial career. A positive self-perception can be said to strongly influence entrepreneurial success. According to Gomezeli, and Kusce (2013) and Peterson (2017) entrepreneurs who have a positive self-perception towards their ability to succeed in their businesses have more satisfaction towards their business outcomes or successes. On the other hand, entrepreneurs who attribute their ability to succeed in external forces have less satisfaction in their business outcomes or successes. When successes are internalized, the individual is more likely to learn and improve on their business ventures. As entrepreneurs improve on their self-efficacy, their level of confidence to succeed would also increase (Pihie, & Akmaliah, 2009; Brunel, Laviolette, & Radu-Lefebvre, 2017; Liu, Lin, Zhao, & Zhao, 2019).

Perception of the environment in which an individual operates also affects their perception towards venturing and succeeding in entrepreneurship. How an individual interacts with the environment reflects the way he or she perceives the environment. The environment of an entrepreneur includes the government, competitors, customers, as well as other entities that the entrepreneur considers influential in business. If a budding entrepreneur perceives the process of formalizing his/her venture as cumbersome, this may discourage him from eventually setting up a business (Kaufmann, Hooghiemstra, & Feeney, 2018). A growing frustration of most businesses is dilapidated infrastructure. This may be perceived negatively by the entrepreneur (Tachiwou & Hamadou 2011). The perception others have of entrepreneurs also influences the success of their entrepreneurial venture. Entrepreneurs who are perceived positively by their immediate support network tend to succeed in their business ventures (Belwal, Al Balushi, & Belwal, 2015). Research has shown that there is a strong association between the way others view an individual and the success of that individual (Gupta, Sikdar, Turban & Wasti, 2009). Interestingly, Gupta and his colleagues suggest that the reason more males are into entrepreneurship is that entrepreneurship is perceived as a masculine discipline or profession.

Entrepreneurial perception has evolved over the years. A study by Crecente-Romero, Giménez-Baldazo, and Rivera-Galicia (2016), analyzing subjective entrepreneurship perception using the GEM report of previous years, indicates that the perception of entrepreneurial opportunities is not reliant on economic development alone but also on behavioral economics.
3. Research Methodology

Data collection was undertaken through a questionnaire survey involving students of a university of technology in South Africa. The decision to target these students was based on our understanding that universities of technology in South Africa offer vocation-based, career-focused programs with the overall hope that the students, on graduation, are likely to become entrepreneurial (Ozaralli & Rivenburgh, 2016).

The questionnaire was designed to elicit information regarding how students perceive entrepreneurship, what they think entrepreneurship is, what they consider as the factors that may discourage them from considering an entrepreneurial career, and also whether they think of themselves as capable of venturing into entrepreneurship. We made use of a combination of previously used questionnaires (e.g. Thompson, 2009; Liñán & Chen, 2009; Adediran & Onifade, 2013; Ozaralli & Rivenburgh, 2016; Udo-Imeh et al, 2015, 2016; Van Gelderen et al., 2008) to derive the instrument for this study. Besides, we also carried out a pilot study with 13 students and four academic staff. This enabled a review of the instrument and subsequently introducing more direct questions/items such as ‘Would you be willing to take some risk (personal, financial) to increase your social and professional status?’ and ‘Do you think you are entrepreneurial?’

Before data collection commenced, permission was obtained from the Research Ethics Committee of the university. In applying for ethics clearance, we stated the following:

1. Participants were free to withdraw their participation at any time.
2. No participant’s identity would be revealed. To this end, we did not require names or student numbers.
3. All information received would be for the research.

3.1 Conceptual framework

The theory of planned behavior (TPB) is well documented in the humanities, social sciences, and health sciences research. A crucial element in this model as posited by several researchers (including Ajzen 1991) is the behavioral foundation which suggests that the intention to behave in a certain way is driven by certain factors. Two common factors inherent in this consideration are the probability that the behavior will yield an outcome that was expected and the subjective evaluation of the risks and benefits of that outcome. Ajzen (1991) and many others (for example Han, Meng & Kim, 2017; Nabi et al 2018; Sussman & Gifford, 2019) have used this model to predict and explain a wide range of behaviors and intentions. We adapt this model to this research for the same reason: to try and determine factors that may influence a university student to pursue an entrepreneurial career on graduation. We developed a TPB-based conceptual framework and by doing so we formulated three hypotheses. The hypotheses are: firstly, students can be motivated (MEU) to increase their intention for entrepreneurship uptake (SEI); secondly, students can be persuaded (EUP) to increase their intention for entrepreneurship uptake (SEI); and thirdly, students’ entrepreneurship perception (PEU) will influence their intention for entrepreneurship...
uptake (SEI). All the variables – PEU, EUP, MEU, and SEI – are significant signals for entrepreneurship uptake as shown in Figure 1 below.

**Figure 1**

**The Conceptual Framework**

![The Conceptual Framework Diagram](image-url)

Source: Own elaboration.

Figure 1 conceptualizes three hypotheses:

- **H1**: Perception of entrepreneurship uptake (PEU) will associate positively with Students’ entrepreneurship intention (SEI).
- **H2**: Motivation for entrepreneurship uptake (MEU) will associate positively with Students’ entrepreneurship intention (SEI).
- **H3**: Entrepreneurship uptake persuasion (EUP) will associate positively with Students’ entrepreneurship intention (SEI).

### 3.2 Model Specification

Using the extraction from the above conceptual framework, the model specification is defined as follows:

\[
SEI = F(PEU, MEU \text{ and } EUP) \tag{1}
\]

When the equation (1) above is linearized, we have the model specified as follows:

\[
SEI_i = \beta_0 + \beta_1(PEU) + \beta_2(MEU) + \beta_3(EUP) + \xi_i \tag{2}
\]

Where:

\[
SEI = \text{Students Entrepreneurship Intention}
\]
PEU = Perception of Entrepreneurship Uptake
MEU = Motivation for Entrepreneurship Uptake
EUP = Entrepreneurship Uptake Persuasion
$\varepsilon_i$ is the stochastic error term.

4. Findings

The demographics of the respondents in this study are summarized in Table 1, using descriptive statistics of frequency and percentage. The proportion of male participants is almost triple that of female participants. The male respondents covered 70.8% of the respondents, while 29.2% were female.

Table 1

The Participants’ Demographics (n=220)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>131</td>
<td>70.8%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>54</td>
<td>29.2%</td>
</tr>
<tr>
<td></td>
<td>National Diploma</td>
<td>97</td>
<td>44.1%</td>
</tr>
<tr>
<td>Level of studies</td>
<td>Bachelor degree</td>
<td>121</td>
<td>55.0%</td>
</tr>
<tr>
<td></td>
<td>Masters</td>
<td>2</td>
<td>0.9%</td>
</tr>
<tr>
<td>Students Department</td>
<td>Entrepreneurship and Business Management</td>
<td>99</td>
<td>45.0%</td>
</tr>
<tr>
<td></td>
<td>Graphic design</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>120</td>
<td>54.5%</td>
</tr>
<tr>
<td>Nationality/Cultural Group</td>
<td>Black South African</td>
<td>174</td>
<td>94.1%</td>
</tr>
<tr>
<td></td>
<td>Coloured South African</td>
<td>10</td>
<td>5.4%</td>
</tr>
<tr>
<td></td>
<td>Black immigrant</td>
<td>1</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

Source: Own elaboration.

1 The gender question was responded to by only 185 out of 220 participants due to binary options and many may be unwilling to report their gender as the participants were free to choose the option that appealed to them.
The respondents were predominantly pursuing National Diploma and Bachelor degrees with the former covering 44.1% and the latter 55.0%. The rest, master’s students, were less than 1%. The students’ departmental information revealed that 45% of the respondents were from the Entrepreneurship and Business Management Department, while the remaining 55% were from other departments. Black South Africans accounted for 94.1%, due to the historical racial confinement of the university. The rest of the participants’ ethnic configuration included Coloured South Africans (5.4%) and Black immigrants were (less than 0.5%).

The statistical results of the cross-tabulation analysis of students' entrepreneurship intention (SEI) depict the three-stage dimension of entrepreneurship uptake by the students. The items reveal the proportion of students who intended to take up entrepreneurship during their studies as 65%, which increased to 75% for those who considered it after their studies, while the proportion of those who would consider it long after their studies was 40%, as shown in Table 2. This implies the readiness and willingness of the students to take up entrepreneurship opportunities. An increase in this proportion of entrepreneurship uptake immediately after school can be nurtured by creating an enabling environment to grow the uptake intention to the level of actual uptake and ultimately foster sustainability of the businesses (Nxopo & Iwu, 2015; Potishuk & Kratzer, 2017; Sharma, 2018; Tih, et al. 2019; Wei, Liu & Sha, 2019).

Table 2

Cross-tabulation for Entrepreneurship Intention Items (N=220)

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Do you wish to start your own business or to become self-employed during your studies?</td>
<td>144</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>65.5%</td>
<td>32.3%</td>
</tr>
<tr>
<td>Do you wish to start your own business or to become self-employed after your graduation?</td>
<td>167</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>75.9%</td>
<td>7.8%</td>
</tr>
<tr>
<td>Do you wish to start your own business or to become self-employed a long time after your graduation?</td>
<td>88</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>40.0%</td>
<td>20.9%</td>
</tr>
</tbody>
</table>

Source: Own elaboration

4.1 Normality of and Reliability Statistics for Factors

To ensure the suitability of the data for ordinary least square methods, normality and reliability tests were carried out. In this study, we conducted the skewness and kurtosis test, using the probability values of the result at a 95% confidence interval to affirm if the data were normally
distributed. Hair et al. (2006) indicated that to confirm appropriate normality assumption, skewness and kurtosis value should range between +/-3. Based on the evidence in Table 3, a conclusion of the normality of distribution is legitimate.

Before gauging the association between PEU, MEU, and EUP and SEI, reliability estimates for each factor were checked based on the Cronbachs Alpha benchmark. At the .7 benchmark (Nunnally & Bernstein, 1994; Cohen & Swerdlik, 2010), satisfactory internal consistency was established for all factors in the conceptual framework (see Table 3).

Table 3

<table>
<thead>
<tr>
<th>Variables</th>
<th>Obs</th>
<th>Pr(kewness)</th>
<th>Pr(Kurtosis)</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception of Entrepreneurship Uptake (PEU)</td>
<td>220</td>
<td>0.0016</td>
<td>0.0065</td>
<td>0.88</td>
</tr>
<tr>
<td>Motivation of Entrepreneurship Uptake (MEU)</td>
<td>220</td>
<td>0.0027</td>
<td>0.0021</td>
<td>0.79</td>
</tr>
<tr>
<td>Entrepreneurship Uptake Persuasion (EUP)</td>
<td>220</td>
<td>0.0211</td>
<td>0.0000</td>
<td>0.89</td>
</tr>
<tr>
<td>Students Entrepreneurship Intention (SEI)</td>
<td>220</td>
<td>0.0150</td>
<td>0.0304</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Source: Own elaboration

4.2 Factor Analysis

To understand the latent variables for the explored factors (PEU, MEU, EUP, and SEI), a principal component analysis was undertaken. To do this, each factor was analyzed separately and SPSS was restricted to extract only one factor. Based on the evidence for each factor analysis, variables that were loaded below .4 (Field, 2009) were eliminated. In addition to retaining only variables that loaded at .4 or above, that analytical approach allowed for higher Eigen-Values and explained variance for each factor. In the factor analysis, the inter-item correlation for each factor was also examined to understand the closeness between the measurement items for each factor. The factor analysis results displayed in Tables 4 (Entrepreneurship Intention), 5 (Perception of Entrepreneurship), 6 (Entrepreneurship Uptake Persuasion), and 7 (Entrepreneurship Motivation) are satisfactory at the .4 benchmark (Field, 2005) and suggest that the measurement items are satisfactory measures of the conceptualized constructs.
Table 4
Principal Factor Analysis & Inter-item Correlation for Entrepreneurship Intention (n=222)

<table>
<thead>
<tr>
<th>Items</th>
<th>EI1</th>
<th>EI2</th>
<th>EI3</th>
<th>EI4</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI1</td>
<td>1.000</td>
<td>.805</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EI2</td>
<td>.744</td>
<td>1.000</td>
<td>.782</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EI3</td>
<td>.685</td>
<td>.789</td>
<td>1.000</td>
<td>.837</td>
<td></td>
</tr>
<tr>
<td>EI4</td>
<td>.865</td>
<td>.714</td>
<td>.803</td>
<td>1.000</td>
<td>.898</td>
</tr>
</tbody>
</table>

Total Variance Explained: 81.14%
Determinant Significance: 0.011
Eigen-Value of PC1: 4.692
Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.897 (.000)

Source: Own elaboration

Table 5
Principal Factor Analysis & Inter-item Correlation for Perception of Entrepreneurship (n=222)

<table>
<thead>
<tr>
<th>Items</th>
<th>PE1</th>
<th>PE2</th>
<th>PE3</th>
<th>PE4</th>
<th>PE6</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE1</td>
<td>1.000</td>
<td>.922</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PE2</td>
<td>.486</td>
<td>1.000</td>
<td>.752</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PE3</td>
<td>.657</td>
<td>.664</td>
<td>1.000</td>
<td>.932</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PE4</td>
<td>.632</td>
<td>.691</td>
<td>.598</td>
<td>1.000</td>
<td>.788</td>
<td></td>
</tr>
<tr>
<td>PE6</td>
<td>.717</td>
<td>.765</td>
<td>.721</td>
<td>.683</td>
<td>1.000</td>
<td>.842</td>
</tr>
</tbody>
</table>

Total Variance Explained: 78.43%
Determinant Significance: 0.021
Eigen-Value: 5.928
Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.779 (.000)

Source: Own elaboration
Table 6

**Principal Factor Analysis & Inter-item Correlation for Entrepreneurship Uptake Persuasion (n=222)**

<table>
<thead>
<tr>
<th>Items</th>
<th>EUP1</th>
<th>EUP2</th>
<th>EUP3</th>
<th>EUP4</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUP1</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td>.805</td>
</tr>
<tr>
<td>EUP2</td>
<td>.706</td>
<td>1.000</td>
<td></td>
<td></td>
<td>.782</td>
</tr>
<tr>
<td>EUP3</td>
<td>.707</td>
<td>.704</td>
<td>1.000</td>
<td></td>
<td>.837</td>
</tr>
<tr>
<td>EUP4</td>
<td>.681</td>
<td>.801</td>
<td>.893</td>
<td>1.000</td>
<td>.898</td>
</tr>
</tbody>
</table>

Total Variance Explained: 81.8%

Eigen-Value of PC1: 5.698

Determinant Significance: 0.019

Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.856 (.000)

Source: Own elaboration

Table 7

**Principal Factor Analysis & Inter-item Correlation for Entrepreneurship Motivation (n=222)**

<table>
<thead>
<tr>
<th>Items</th>
<th>EM1</th>
<th>EM2</th>
<th>EM3</th>
<th>EM4</th>
<th>EM5</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM1</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.853</td>
</tr>
<tr>
<td>EM2</td>
<td>.736</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td>.882</td>
</tr>
<tr>
<td>EM3</td>
<td>.721</td>
<td>.844</td>
<td>1.000</td>
<td></td>
<td></td>
<td>.937</td>
</tr>
<tr>
<td>EM4</td>
<td>.701</td>
<td>.734</td>
<td>.881</td>
<td>1.000</td>
<td></td>
<td>.811</td>
</tr>
<tr>
<td>EM5</td>
<td>697</td>
<td>832</td>
<td>769</td>
<td>796</td>
<td>1.000</td>
<td>.832</td>
</tr>
</tbody>
</table>

Total Variance Explained: 72.2%

Eigen-Value of PC1: 5.488

Determinant Significance: 0.031

Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.885 (.000)

Source: Own elaboration
4.3 Discriminant Validity

According to methodological literature, researchers must ensure that conceptualized constructs are unique, in other words, the factors should not correlate significantly (Field, 2005; 2009). In conformance, we carried out a correlation analysis of the four factors explored in this study, and the correlation coefficients (see Table 8) justify a conclusion of discriminant validity - there are no significant correlations between the four constructs.

Table 8

<table>
<thead>
<tr>
<th>Discriminant Validity - Correlations Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Intention</td>
</tr>
<tr>
<td>Perception</td>
</tr>
<tr>
<td>Persuasion</td>
</tr>
<tr>
<td>Motivation</td>
</tr>
<tr>
<td>Intention</td>
</tr>
<tr>
<td>Perception</td>
</tr>
<tr>
<td>Persuasion</td>
</tr>
<tr>
<td>Motivation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intention</th>
<th>Perception</th>
<th>Persuasion</th>
<th>Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.000</td>
<td>.350***</td>
<td>.447***</td>
<td>.521***</td>
</tr>
<tr>
<td></td>
<td>1.000</td>
<td>.479***</td>
<td>.381***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.000</td>
<td>.196*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.000</td>
</tr>
</tbody>
</table>

Source: Own elaboration

4.4 Multi-Variable Regression Analysis

Having confirmed reliability and validity for all four conceptualized factors, multiple regression analysis was carried out to examine the conceptualized hypotheses. Implementing the multiple regression analysis, we aimed not only to extract the regression coefficients (and significance levels) but also to understand clearly if there are multi-collinearity threats. At (R2 = 0.830, F-Change of 98.578, and Sig. F-Change of 0.000), the regression results suggest a significant association of the independent variables (PEU, EUP, and MEU) on the dependent variable (SEI) (see Table 9). As documented in Table 9, students' entrepreneurship intention (SEI) is significantly a factor of PEU, EUP, and MEU. In other words, H1, H2, and H3 are supported.

Towards ensuring the validity of the findings from this study, further multi-collinearity diagnostics were examined to support the ballpark evidence (Draper & Smith, 1981; Field, 2005) (see Table 8). As evident in Table 8, there was no significant correlation at the .8 benchmark (Field, 2005) amongst the factors. The multi-collinearity diagnostics for this study match with benchmarks: the condition index for each factor was below 15 (see Table 10) (Belsley, Kuh & Welsch, 1980), and the variance inflation factor (VIF) and the tolerance levels are below the benchmark of above 10 (Myers, 1990) for the former and 0.10 or less (Field, 2005) for the latter. Therefore, there are no multi-collinearity threats in this study (Belsley, Kuh, & Welsch, 1980; Johnston, 1984).
Table 9

Regression Analysis Results

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95.0% Confidence Interval for B</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-.622</td>
<td>.163</td>
<td>-3.819</td>
<td>.000</td>
</tr>
<tr>
<td>Perception</td>
<td>.327</td>
<td>.076</td>
<td>.333</td>
<td>4.310</td>
</tr>
<tr>
<td>Persuasion</td>
<td>.557</td>
<td>.128</td>
<td>.316</td>
<td>4.339</td>
</tr>
<tr>
<td>Motivation</td>
<td>1.488</td>
<td>.162</td>
<td>.532</td>
<td>9.209</td>
</tr>
</tbody>
</table>

Summary of the regression result: Adjusted $R^2 = 0.830$, F-Change = 98.578, and sig. F-Change of 0.000.
*Dependent variable: Entrepreneurial Intention.

Source: Own elaboration

Table 10

Collinearity Diagnostics

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimension</th>
<th>Eigenvalue</th>
<th>Condition Index</th>
<th>Variance Proportions</th>
<th>(Constant)</th>
<th>Perception</th>
<th>Persuasion</th>
<th>Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>2.945</td>
<td>1.000</td>
<td>.01</td>
<td>.02</td>
<td>.01</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.871</td>
<td>1.839</td>
<td>.00</td>
<td>.17</td>
<td>.12</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.121</td>
<td>4.943</td>
<td>.00</td>
<td>.62</td>
<td>.39</td>
<td>.64</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>.064</td>
<td>6.775</td>
<td>.99</td>
<td>.19</td>
<td>.48</td>
<td>.34</td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Entrepreneurship Intention

Source: Own elaboration

In concluding this section, we reaffirm the following: Three hypotheses were formulated to explain the dependent variable (SEI). The regression result affirmed the correlation result and support the three alternative hypotheses that student’s entrepreneurship intention can be positively and
significantly motivated and persuaded. Also, the result confirmed that student’s entrepreneurship intention could be positively influenced by their perception of what entrepreneurship is and their perceived characteristics of an entrepreneur. The pre- and post-estimation analysis supported the assumption of the multivariable regression analysis and made the result of the model reliable and valuable for policy consideration. Policy options that will persuade, motivate and enhance positive perception of entrepreneurship development should be framed around the university of technology students. This will increase entrepreneurship uptake at a three-time dimension scale – during their studies, immediately after their studies, and long after their studies – and will likely save the country from unemployment crises.

5. Conclusion, Implications, and Future Research

Entrepreneurship remains a key ingredient for nurturing the growth and development of any economy. Because of this, it is necessary to empirically investigate this topic to shed light on how its contribution to the sustainability of an economy can be enhanced. Several studies (e.g. Pihie & Akmaliah, 2009; Kim-soon et al 2016; Ebewo et al, 2017; Peterson, 2017; Fatoki, 2019; Aderibigbe et al 2019) have considered the university setting in this regard. Emergent insights document a range of factors that influence a student’s decision to take up an entrepreneurial career on graduation. Our study supports and enhances domain discourse. In our case, this range of factors has the potential to persuade, motivate, and enhance positive perception of entrepreneurship among university students. The question one therefore asks is: what is the role of the university within the larger entrepreneurial ecosystem? In answering this question, one draws from Mazzarol’s (2014) entrepreneurial ecosystem where the university is identified as an important part of it. Further to identifying the university as an important player in the entrepreneurial ecosystem is the need to examine the following questions:

- Are universities training anyone to become entrepreneurs?
- How is entrepreneurship taught?
- Do the teaching styles support learning of entrepreneurship?
- What’s the best method of teaching entrepreneurship?

The above questions can be explored empirically in future research.

If the dwindling economies of the developing countries (Hill, 2018; Prince, Halasa-Rappel, & Khan, 2018) coupled with graduates not possessing employability skills (Owens & Tibby, 2014; Iwu, Mandyoli, & Nxopo, 2018) are among the reasons why there is escalating unemployment, should researchers not turn their attention to universities to inquire whether they are sufficiently training students to become entrepreneurs. This may assist in resolving the argument that instead of training students to become job seekers, the university should thoroughly impart entrepreneurial skills to students.

Even though the majority of our participants considered entrepreneurship as something they would pursue after graduation, it was clear from our study that students' perceptions and attributes are critical to understanding whether the efforts of a university to train students to
become entrepreneurs can yield the necessary outcome. Ying (2008) questions students' attitudes, commitment, and mentality and whether they bode well for the entrepreneurship training. This perhaps suggests that to meaningfully achieve entrepreneurial outcomes during and after training, a student must have the willingness to pursue entrepreneurship on graduation (Tarekegne & Gelaneh, 2019). An important implication of this study is the question of whether these qualities — attitudes, commitment, positive mentality - can be nurtured during entrepreneurship education. Future research could assess the quality of lecturing, the methods used in teaching, and the learning of entrepreneurship. Enhancing this view, Iwu et (2019, p.10) noted the "importance of ensuring an appropriately designed curriculum and competent lecturing team".

Some other researchers have also found similar attributes as significant contributors to the uptake of an entrepreneurial career. Ying (2008) noted the necessity of personal characteristics such as self-drive, creativity, commitment, a sense of direction, and the ability to manage risk. Iwu et al (2020) found similarly that risk-taking and creativity added to the likelihood of an entrepreneurial career.

To conclude, we recommend that to advance the teaching of entrepreneurship, some key value paths are necessary. These value paths include the following:

1. The Sustainable Development Goals (SDGs).
   These SDGs not only serve as reminders of what we should be doing to better our world, they also serve as tools to teach. Goal #14 for instance looks at life below water. What does it say to us? This signifies that opportunities abound in an interdisciplinary method of teaching entrepreneurship. Beyond this, one can also start looking at the SDGs as meeting the goals of entrepreneurship. Goal #8 of the SDG addresses decent work and economic growth and resonates with the ideals of entrepreneurship (Ribeiro-Duthie, 2020; Moya-Clemente, Ribes-Giner, & Pantoja-Díaz, 2020; Basarud-Din, & Zainal, 2020). Perhaps universities can start focusing on how these goals may influence their curriculum?

2. Global Entrepreneurship Monitor (GEM) Reports.
   Since 1999, the UK-based Global Entrepreneurship Monitor has been researching entrepreneurship ecosystems around the world. The report is put together by a consortium of teams primarily associated with top academic institutions in various countries. Important points to note here include the benefits of using the reports and the case studies in them to enrich the teaching and learning of entrepreneurship.

3. Any discussion of an entrepreneurial ecosystem includes the university. Mazzarol's (2014) entrepreneurial ecosystem framework depicts a relationship between the conditions that foster economic prosperity and wealth creation. So, in galvanizing an entrepreneurial mindset, Mazzarol (2014) argues for a morally sound government to develop policies that work, as well as appoint ministers who can 'play a critical role in fostering enterprise and innovation'. Mazzarol further argues that the promotion of inclusive economic growth requires the prioritization of small and medium enterprises (SMEs) development which means that governments should encourage investments in SMEs through a funding practice.
that allows for easy access to finance, the creation of networks that offer mentorship and other assistance as well as instituting a culture that values entrepreneurship.

Finally, this study was conducted in the South African setting and this fact must be borne in mind when transporting the conclusions from this study on to other geographical settings, given that national culture conditions the mindset and ways of doing things (e.g. Opute & Madichie, 2017). Given the heterogeneity across national cultures, a major direction towards validating the finding from this study and improving overall domain discourse is to explore the extent to which the findings from this study hold valid (or not) in other cultural settings. Further within that target, future research could explore other antecedents beyond the conceptualization in this study.

6. References


https://doi.org/10.6000/1929-7092.2019.08.127


