Antecedents of entrepreneurial intentions amongst business students in a tertiary institution

Joseph Evans Agolla
Department of Management, Botswana Open University, Gaborone, Botswana

Gladness L. Monametsi
Department of Accounting and Finance, Botswana Open University, Gaborone, Botswana, and

Petty Phera
Department of Management, Botswana Open University, Gaborone, Botswana

Abstract

Purpose – The purpose of this paper is to examine the antecedents of entrepreneurial intentions amongst open and distance learning students during employment crisis. To achieve the purpose of this study, Ajzen's theory of planned behaviour (TPB) was applied and empirically tested on the sample population.

Design/methodology/approach – Data were taken from a sample of university students pursuing business-related courses in Open and Distance Learning mode. Self-reported questionnaires were handed to a total of 500 students to complete and return. Returned and usable questionnaires numbered 245 in total, giving a return rate of 49 per cent. Descriptive statistics and regression analyses were utilised to analyse data. Structural equation modelling incorporated into SPSS was used to assess the structural model.

Findings – The key finding reveal that Ajzen's TPB can partially be applied in determining entrepreneurial intentions in the developing economy. The study results also revealed that perceived behavioural control, personal attitude and subjective norm (SN) explained 62.5 per cent of variations in entrepreneurial intention, which surpasses many other studies conducted previously.

Research limitations/implications – Present study relied on cross-sectional data using quantitative design, therefore limiting the full understanding of the causal relationship between variables.

Originality/value – The study developed a conceptual framework based on literature that was empirically tested, which adds to existing ones, thereby extending the literature in the field. Moreover, the study managed to incorporate SN as an intervening variable, which has rarely been done.

Keywords Entrepreneurship, Botswana, Innovation, Employment, Students, Graduates

Paper type Research paper

1. Introduction

Economic crunch has created an unprecedented high unemployment rate amongst the students, more specifically in developing countries than the developed world (Dvouletý, 2017;

Gelaidan and Abdullateef, 2017; Papzan *et al.*, 2013). To alleviate the situation, governments around the world have always encouraged their respective citizens to explore alternative sources of employment and wealth creation in the form of entrepreneurship (Buli and Yesuf, 2015; Papzan *et al.*, 2013). The rationale for entrepreneurship amongst students is due to its recognition as a source of employment and wealth creation (Arrighetti *et al.*, 2016). In addition, evidence suggests that entrepreneurship is a source of economic growth and development, specifically if such ventures mature into real and successful business entities (Arrighetti *et al.*, 2016).

Therefore, the purpose of the present study is to investigate the antecedents of entrepreneurial intentions amongst business students in a tertiary institution in Botswana, using theory of planned behaviour (TPB) control. The study is motivated first by the fact that entrepreneurship is seen as a viable option that can address unemployment amongst graduates and reduce crimes associated with unemployed. Of the studies conducted on entrepreneurial intentions, the closest that could be found was Plattner *et al.*'s (2009) study on entrepreneurial readiness of university students in Botswana. Most studies have concentrated on entrepreneurial intentions in the Western world with little focus on Africa, ignoring the fact that there is evidence of differences in entrepreneurial intentions across regions and countries (Gurel *et al.*, 2010; Nabi *et al.*, 2016; Anne-Støren, 2014; Tolentino *et al.*, 2014).

2. Theoretical foundation and hypotheses development

2.1 Theory of planned behaviour

The TPB proposes that intentions to perform behaviours of different kinds can be predicted with high accuracy from attitudes toward the behaviour, subjective norms, and perceived behavioural control (PBC) (Ajzen, 1991). The TPB posits that intentions are determined by attitude towards the act, subjective norm (SN) and perceived behavioural control. The Ajzen (1991) theory states that an individual's intentions are determined by at least three independently constituents, namely, the attitude towards the act, which refers to the degree to which a person has favourable or unfavourable appraisal of the behaviour in question, subjective norm (SN), the degree a person perceive social pressure to perform or not to perform the behaviour, and PBC, which refers to the perceived ease or difficulty of performing the behaviour (Hussain, 2018; Vinogradov *et al.*, 2013).

The assumption of TPB theory is that a person when faced with a myriad of problems viz-a-vis alternative opportunities may opt to react or not to react depending on earlier appraisal of the behaviour. Ajzen (1991) posits that intentions are assumed to capture the motivational factors that influence behaviour, because they are indicators of how hard people are willing to try and how much of an effort they are planning to exert to perform the behaviour (Al-Mamun and Fazal, 2018). The TPB further states that behavioural intentions can find expression in behaviour only if the behaviour is under volitional control, that is, if the person can decide at will to perform or not perform the behaviour (Farrukh *et al.*, 2018; Park, 2017). The TPB hypothesises that three key antecedents determine behavioural intentions: attitudes towards the behaviour, SNs and PBC. Actual behaviour, in turn, is determined by intentions. However, the theory also postulates that PBC is related to actual behaviour and further considers attitudes, SNs and PBC to be related to each other (Ajzen, 1991; Iakovleva *et al.*, 2011). In addition, it also cautions that this volitional control to some degree depends on the availability of requisite opportunities and non-motivational factors such as time, money, skills and cooperation from others to act. During difficult times, external environment exerts pressure on individuals to perform the act to attune themselves to the environment (Al-Mamun and Fazal, 2018).

2.2 Entrepreneurial intentions

Shiri *et al.* (2012) define entrepreneurial intentions as "a state of mind that guides individual actions in order to create and develop a new business or entrepreneurial activity". Entrepreneurs are people who have the ability to see and evaluate business opportunities, collect the resources needed to take advantage of those opportunities and take the appropriate measures in order to ensure success (Davey *et al.*, 2011; Yusuf, 2013). A lot has been debated regarding the relevance of personality traits for entrepreneurship intentions, with some debates generating contradiction by confirming a significant relationship between several personality dimensions such as extroversion, conscientiousness, openness to experience and emotional stability and entrepreneurship intentions and performance, with risk propensity also linked to intentions (Hussain, 2018; Zhao *et al.*, 2010). The literature reveals that the person's decision to become an entrepreneur is deliberate and consciously made, that is, entrepreneurial intention (EI) is the conscious state of mind that precedes action and direct attention toward a goal (entrepreneurship). From a behavioural perspective, entrepreneurship is practiced by individuals who passionately believe they have identified a unique solution to an unmet need or unresolved problem and are willing to expend great effort to satisfy these demands (Kirkley, 2016; Lee-Ross, 2017). Such persons in their minds are ready to do anything to be entrepreneurs (Kirkley, 2016). Thus, it is hypothesised that:

H1. Personal attitude (PA) towards entrepreneurship has statistically positive influences on entrepreneurial intention (EI).

2.3 Personal attitude

PA is the main driving force behind a person's success or failure to overcome obstacles when faced with ambiguous events in life (Darren Lee-Ross, 2017; Sullivan and Meek, 2012). The more a person has positive attitude towards a given situation (entrepreneurial intentions), the more that person is likely to succeed. The evidence suggests that attitude towards the behaviour refers to the extent to which an individual has a favourable evaluation of starting a new business (Aragon-Sanchez *et al.*, 2017). Similarly, Lee-Ross's (2017) study suggests that attitude towards entrepreneurial behaviour concerns a general evaluation of that behaviour; in other words, whether it is attractive or not. Hence, during a period of employment crisis, one would expect students with personal positive attitude towards entrepreneurial intentions more likely to pursue entrepreneurial ventures as opposed to those with negative attitude. Moreover, in other studies, a link between risk attitude and entrepreneurial intentions has been established (Kebaili *et al.*, 2017). In addition, starting a new business venture involve uncertainties and risks that can only be overcome by individuals with personal positive attitude towards entrepreneurship as opposed to those people with negative PA (risk averse). PAs are viewed as an individual's own judgments and evaluations in relation to certain action that the person perhaps may take when faced with tough decisions. Thus, we pose the following hypotheses to guide the research as:

H2. PA mediated by subjective norm (SN) will have a statistically positive influence on entrepreneurial intentions (EI).

2.4 Subjective norms

It is obvious that family plays an important role in a person's life irrespective of their age. In most cases, a person would not want to deviate from the norm and value held by close family, and even friends with whom he/she interacts on a daily basis (Hussain, 2018). In

addition, Gelaidan and Abdullateef (2017) study claim that relation support is a crucial factor in developing entrepreneurial intentions in people. This crucial factor can be seen in the form of emotional support or access to start-up capital from family and friends (Baughn *et al.*, 2006; Gelaidan and Abdullateef, 2017). While this has been seen to boost people's confidence to venture into new ventures, the same could not be said when it comes to lack of support from family and friends (Hussain, 2018; Ismail *et al.*, 2009; Laylo, 2018). The argument here is that lack of such support would naturally discourage people from venturing into a new business. Alongside role model, family members and friends can supply economic and emotional backing to the new entrepreneur (Gelaidan and Abdullateef, 2017; Al-Mamun and Fazal, 2018; Turker and Selcuk, 2009). Subjective norms define how a person would act in a given situation (Aragon-Sanchez *et al.*, 2017; Kirkley, 2016). Entrepreneurship comes with a lot of changes and risks that may not be easily tolerated in an individual's lifestyle. SN refers to the perceived social pressure to perform or avoid behaviour (Laylo, 2018; Park, 2017). This type of pressure could come from family, or society in general, which forces someone to do or not perform specific tasks (Farrukh *et al.*, 2018; Hussain, 2018). Therefore, for our research, we hypothesised that:

H3. SN will have statistically positive influence on EI.

2.5 Perceived behavioural control

Research findings have long established the relationship between PBC and EI (Farrukh *et al.*, 2018; Hussain, 2018). PBC is a product of Ajzen's (1991) theory of TPB that has been used over time by researchers in entrepreneurship, and now has become one of the outstanding seminal works in the study of entrepreneurship intentions among people (Jarvis, 2016; Shook *et al.*, 2003). PBC relates to the individual's control beliefs relating to the action being monitored (Iakovleva *et al.*, 2011). This factor relates to the perceived relative ease (or difficulty) of performing the monitored action. PBC was found in both studies to explain more of the variance in the intention than attitude towards the behaviour or subjective norms. Additionally, theory states that PBC is related to actual behaviour, and further considers attitudes, SNs and PBC to be related to each other (Solesvik *et al.*, 2012). Also, PBC concerns the individual's control beliefs regarding behaviour in question. PBC can be perceived as the ease or difficulty of performing the behaviour (Engle *et al.*, 2010; Iakovleva *et al.*, 2011). Moreover, evidence suggests that the individual's environment, resources and processes can have a more profound influence on such individual intentions to become an entrepreneur (Buli and Yesuf, 2015; Solesvik *et al.*, 2012). We therefore thus hypothesised that (Figure 1):
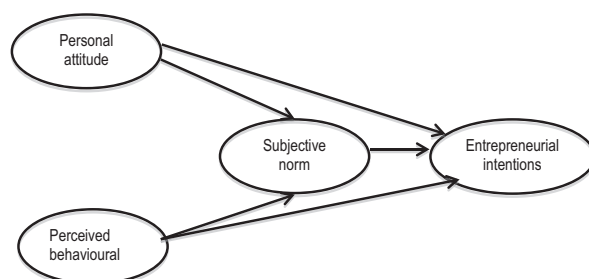

Figure 1.
Conceptual
framework and
hypotheses
development

H4. PBC mediated by SN will have a statistically positive influence on EI.

H5. PBC will directly have a statistically positive influence on EI.

3. Research methodology

This study was conducted at one of the public owned higher learning institutions in Botswana. The institution offers business and management programmes for the students pursuing their career while working through Open and Distance Learning mode. The rationale for the choice of this institution was informed by the facts that, the majority of these students are pursuing careers in business programmes not only to secure jobs but also career progressions as they are already employed elsewhere.

3.1 Sample

The present study was conducted at the Botswana Open University (BOU) using students as respondents. The questionnaire was self-administered to the participants from January 2018 to April 2018. Study sample comprises 245 out of 500 students pursuing diploma, degree and postgraduate programmes in business through Open and Distance Learning (ODL) mode. This gave a return rate of 49 per cent of fully completed and returned questionnaires. Using purposive sampling method, only those students who were pursuing career in business programmes at diploma level and above were requested to participate in the study. The researchers' self-administered questionnaires to the students during class contact after obtaining their consent. This method was found convenient, because it is easy to access the majority of the students during the residential sessions.

3.2 Measurement instrument development

The study adapted Buli and Yesuf's (2015) measurement instrument, and this was refined using Ajzen's (1991) theory. The questionnaire consisted of five questions, namely, PA, SN, PBC, EI and demography. The scale measurement was based on a five-point Likert scale ranging from 1 (*strongly disagree – SD*) to 5 (*strongly agree – SA*). The items in the measurement instrument were as follows: PA (five items), subjective norms (three items), PBC (six items), EI (six items) and demography (gender and age).

4. Results
4.1 Descriptive statistics

The results presented here were obtained after performing descriptive statistics, correlations, regression analysis and AMOS and to portray the main features of variables under study and the relationship between them. Respondents ranged in age between 20 and 51 years, with a mean age value (M = 2.19) and standard deviation (SD = 0.702). From the respondents' profile, it is evidenced that women are 154 (62.9 per cent) in mumber compared to 60 men, representing 62.9 per cent and 24.5 per cent, respectively. Age wise, a small number (31) are below the age 31 years. In terms of age, 68.5 per cent are 40 years of age or less, meaning a significant number of the participants is considered to be in their youthful years. A good number of the respondents (47.8 per cent) fall between 31 and 40 years, followed by those who are 41-50 years old (25.7 per cent) and those who are 51 years old above, representing (2.0 per cent).

4.2 Validity and reliability tests

This is a report on the validity of the model and the values of the regression weights. Convergent validity refers to the extent to which indicators of a construct converge or share a high proportion of variance in common (Hair *et al.*, 2010). This tests the convergent and discriminant validity of the critical constructs and can be assessed by referring to the measurement model. Fornell and Larcker's (1981) study suggest that to test for the convergent validity for a measurement model, the following three criteria must be met; first, all factor loadings should be significant and higher than 0.50 (Janssens *et al.*, 2008), second, the scale composite or construct reliability should exceed 0.70 (Nunnally and Bernstein, 1994), and last, the average variance extracted (AVE) for each construct should be 0.5 or above (Hair *et al.*, 2010).

Table I indicates measures of convergent validity of the model. In the present study, we tested convergent validity of the measurement model utilising AVE and composite reliability (CR). To assess the discriminant validity, use of the AVE is recommended. To this end, the square root of the AVE (diagonal of Table I) is compared with the correlations between the constructs (the off-diagonal elements of Table I). As can be seen, the square root of the AVE for all the constructs is greater than the correlation between them, suggesting that each construct relates more strongly to its own measure than to others.

CR is a less biased estimate of reliability than Cronbach's alpha, and the acceptable value of CR is 0.7 and above. The values in italics are the square roots if each AVE (i.e. square root of $0.567 = 0.753$), and the values in red are the bivariate correlation values. It can be observed in Table IV that PA, SN and EI are all above the recommended value of 0.7, except for the PBC, which is 0.647. From Table I, AVE values talk about the validity of the model. AVE values should be above 0.5. In the table, it can be observed that PBC does not have high enough validity as it is below 0.5. We can therefore safely say that all the constructs in the measurement model showed adequate convergent validity and reliability, except for the PBC that fell below the recommended threshold of 0.5 levels.

To test discriminant validity, sometimes it is advisable to use standardised regression weights significant at 0.05 levels. Table II shows the standardised regression weights of the model. It can be observed from the table that regression weights, which are significant, are those of SN-PBC, SN-PBC, EI-PA and EI-PBC, while SN-PA and EI-SN are not. It is recommended that these should not be more than 0.05 significant levels.

Discriminant validity is achieved by considering correlations between constructs or factors. It is postulated that items should correlate more strongly with their own construct as

Constructs	AVE	CR	PA	PBC	SN	EI
PA	0.567	0.851	*0.753*	0.446	−0.06	0.689
PBC	0.418	0.862	0.446	*0.647*	0.137	0.65
SN	0.688	0.912	−0.06	0.137	*0.830*	−0.035
EI	0.713	0.914	0.689	0.65	−0.035	*0.845*

Table I.
Correlations and
square root of AVE

Constructs	Estimated regression weight	Sig	Estimated standardised regression weight
SN ← PA	−0.196	0.078	−0.150
SN ← PBC	0.374	0.028	0.204
EI ← PA	0.569	<0.001	0.488
EI ← PBC	0.725	<0.001	0.441
EI ← SN	−0.059	0.124	−0.066

Table II.
Model with
standardised
regression weights

opposed to any other, indicating that they are perceived by the respondents as belonging to their theoretical constructs (Buli and Yesuf, 2015). In our case, as demonstrated in Table III, all constructs, PA, SN, EI and PBC, correlate strongly with their constructs than any other. Therefore, we conclude that there was no problem with discriminant validity in this study.

On the one hand, variables PBC and PA have a positive and significant correlation with EI measures. On the other hand, variable SN has a negative and significant correlation with EI. In addition, SN and PBC have a positive and significant correlation with each other.

4.3 Structural equation modelling

Reliability measures refer to the internal consistency of the factors. The scale was assessed using Cronbach's alpha coefficient to test its internal consistency and reliability. A minimum cut-off for Cronbach's α coefficient is always recommended to range between 0.6 good to 0.9 best measures. Therefore, any measures that fall below the 0.6 cut-off point marks were deemed not suitable in this study. This is always achieved by performing factor analysis using Cronbach's α coefficient (Agolla and Van Lill, 2016; Andy, 2005). As shown in the Table I, the values of Cronbach's α coefficient are above the minimum (0.6) threshold that is recommended (Nunnally, 1978) (Table IV).

Table V indicates the results of Kolmogorov–Smirnov (K-S) Lilliefors correction test to determine data distribution. Assessing normality assumption should be considered for using parametric statistical tests.

In this scenario, it is recommended that K-S alone should not be relied on due to its low power; hence, the normality tests was conducted using S-W as shown in the table (Ghasemi and Zahediasl, 2012; Yap and Sim, 2011). From Table V, our study validated data, and correct statistical tests have been used.

Latent constructs	PBC	PA	SN	EI
PBC	1.000			
PA	0.486**	1.000		
SN	0.149*	−0.144*	1.000	
EI	0.711**	0.657**	−0.105	1.000

Table III.
Correlations matrix

Notes: **Correlation is significant at the 0.01 level (two-tailed); *correlation is significant at the 0.05 level (two-tailed)

Constructs	Mean	SD	Cronbach's α coefficient
PBC (6 items)	3.40	1.02	0.91
PA (5 items)	4.67	0.98	0.84
SN (3 items)	2.31	1.33	0.86
EI (6 items)	4.17	0.78	0.86

Table IV.
Cronbach's α coefficient and mean

Constructs	Kolmoorov–Smirnova Lilliefors correction test			Shapiro–Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
SN	0.148	245	0.000	0.883	245	0.000
EI	0.124	245	0.000	0.876	245	0.000

Table V.
Tests of normality

To examine the conceptual framework of the present study, we performed "structural equation modelling technique". Structural equation modelling (SEM) is a multivariate technique used to test this type conceptual framework because of its ability to simultaneously examine a number of dependent linear relations in a situation where one or more constructs (variables) are both dependent and independent (Agolla and Van Lill, 2016; Mbrokoh, 2016). To perform SEM analysis, there are certain common fit measures that are available to statisticians. In this case, the common fit measures adopted (CMIND.F, GFI, CFI, RMR and root mean square error of approximation [RMSEA]) were applied to appraise the overall model fit. The overall fit values of the study model are summarised as shown in Table VI, and their scores fulfil the acceptable levels.

Chi-square test tests the null hypothesis that the over-identified (reduced) model fits the data and does a just-identified (full, saturated) model. In a just-identified model, there is a direct path (through an intervening variable) from each variable to each other variable. When one or more of the paths deleted, we obtained an over-identified model. The non-significant Chi-square here (0.974) indicated that the fit between our over-identified model and the data is not significantly worse than the fit between the just-identified model and the data. This can be seen from the just-identified model in this study. A good fit model is one that can reproduce the original variance-covariance matrix (or correlation matrix) from the path coefficients, in much the same way that a good factor analytic solution can reproduce the original correlation matrix with little error.

NPAR is the number of parameters in the model. In the saturated (just-identified) model there are 210 parameters – 20 variances (one for each variable) and 190 path coefficients. For our tested (default) model, there are 79 parameters. For the independence model (one where all of the paths have been deleted), there are 20 parameters. CMIN is a Chi-square statistic comparing the tested model and the independence model to the saturated model (Table VI). We saw the former a bit earlier. CMIN/DF, the relative Chi-square, is an index of how much the fit of data to model has been reproduced by dropping one or more paths. One rule of thumb is to decide which paths you have to drop if too many index exceeds 2 or 3. In this case, the CMIN/DF is much less than 3 and the p-value > 0.05, which points to a good fit of the model.

GFI, the Jöreskog's goodness of fit index, tells what proportion of the variance in the sample variance-covariance matrix is accounted for by the model. This should exceed 0.9 for a good model. For the saturated model it will be a perfect 1. Adjusted GFI (AGFI) is an alternate GFI in which the value of the index is adjusted for the number of parameters in the model. The fewer the number of parameters in the model relative to the number of data points (variances and covariances) in the sample variance-covariance matrix), the closer the AGFI will be to the GFI. The PGFI (P is for parsimony), the index is adjusted to reward simple models and penalise models in

Overall fit of the model

Root mean square error of approximation (RMSEA)	0.000
Comparative fit index (CFI)	1.100
IFI	1.061
RFI	0.762
Goodness fit index (GFI)	0.958
Chi-square (CMIN/D.F)	0.775

Table VI.
Model fit

which few paths have been deleted. This goodness of fit indices compares model (default) to the independence model rather than to the saturated model. The Normed Fit Index (NFI) is simply the difference between the two models' Chi-squares divided by the Chi-square for the independence model (Mbrokoh, 2016). For our data, that is (617.312-101.504)/617.312 = 0.836. Values of 0.9 or higher (some say 0.95 or higher) indicate good fit (Table VI).

The comparative fit index (CFI) uses a similar approach (with a non-central Chi-square) and said to be a good index for use even with small samples. It ranges from 0 to 1, like the NFI, and 0.95 (or 0.9 or higher) indicates a good fit (Table VI). RMSEA estimates lack of fit compared to the saturated model. RMSEA of 0.05 or less indicates good fit, and 0.08 or less adequate fit. LO 90 and HI 90 are the lower and upper ends of a 90 per cent confidence interval on this estimate. PCLOSE is the p-value testing the null that RMSEA is no greater than 0.05.

4.4 Model testing
From Table VII, it can be observed that standardised regression weights for the paths *SN* to *PBC*, *EI* to *PA*, and *EI* to *PBC* are significant, while *SN* to *PA* and *EI* to *SN* are non-significant.

This result is similarly to the study (Buli and Yesuf, 2015), which found that SN and EI not significantly related. Contrary to (Ajzen, 1991; Iakovleva *et al.*, 2011) assertion that there is a relationship between PA, SN, PBC and EI.

In Figure 2, the values of the standardised regression weights PA, PBC, SN and EI are presented. The R^2 change for regression PA toward EI was 0.49 ($p < 0.05$). R^2 Change for regression for PA towards SN was -0.15 ($p < 0.05$), R^2 change for variable PBC toward SN

	Estimated regression weight	Sig	Estimated standardised regression weight	Accept/Reject
SN ← PA	−0.196	0.078	−0.150	Not supported
SN ← PBC	0.374	0.028	0.204	Supported
EI ← PA	0.569	<0.001	0.488	Supported
EI ← PBC	0.725	<0.001	0.441	Supported
E I← SN	−0.059	0.124	−0.066	Not supported

Table VII.
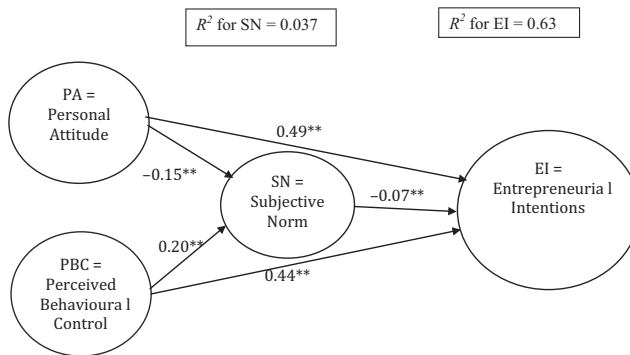Structural path analysis (hypotheses testing)

Figure 2.
Redrawn model with standardised regression weights

was 0.20 ($p < 0.05$), R^2 change for regression PBC toward EI was 0.44 ($p < 0.05$). Our model explains 62.5 per cent of variance in EI due to PA, SN and PBC.

5. Discussion

The results of the present study answer at least 3 hypotheses and rejected 2 hypotheses. The squared multiple correlation coefficients, i.e. R^2, of each path in the model, whereas EI is the dependent, R^2 is 0.625 (62.5 per cent) accounting to variations in the independent variable. Thus, the 62.5 per cent of the variation in EI is directly due to the variation in the independent variables PBC, PA and SN. In other words, 37.5 per cent of the variance is unexplained or, due to other factors, not accounted for in the TPB. Nonetheless, this was a significant result and exceeded those found by other comparable researchers (Buli and Yesuf, 2015; Karimi et al., 2013, 2014; Linan and Chen, 2009), which suggest that attitudes toward behaviour (PA), SNs and PBC typically explain 30-50 per cent of the variance in EI, hence leaving out nearly 50 per cent of the variance in the EI unexplained. It can be concluded that this result is highly satisfactory, because most previous research using models typically have only managed to explain between 30-50 per cent (Ferreira et al., 2012; Linan and Chen, 2009).

In our study, we confirmed partially that (Ajzen, 1991) TPB theory could be applied when studying entrepreneurial intentions among students. Study confirmed statistically positive significant relationship between PA and EI, indicating that students view entrepreneurship as attractive career, advantageous, given opportunity and resources, and would pursue entrepreneurial ventures. Therefore, conforming H1 of the study, that PA will have statistically positive influence on entrepreneurial intentions (EI). This result confirms other studies (Buli and Yesuf, 2015; Ferreira et al., 2012), which also found positive relationships between PA and EI amongst tertiary students. Alternatively, H2, which hypothesised a relationship between PA and SN, was found to be a non-significant, indicating that family and friends influences may hold so much when it comes to pursuing entrepreneurial ventures. Another study (Do Paço et al., 2011) found that PA and PBC have a significant influence on entrepreneurial intentions, while the influence of subjective norms is weaker. SN toward EI showed a non-significant relationship. Our result supports another study (Arrighetti et al., 2016), which found that family support is not relevant in explaining entrepreneurial intentions amongst the students. This, contrary to result, did not confirm (Ferreira et al., 2012) similar studies on the effect of SN on EI, which found that SN has a significant relationship. Our study also corroborates Vinogradov et al. (2013), who found PA and PBC to be strong predictors of entrepreneurial intention, while SN had no significant effect. These differences in the results can be interpreted to mean that most of the students have control of their lives given that majority are employed adults who are only furthering their education for various reasons such career shift and progression as opposed to getting employment for the first time. Other study (Vinogradov et al., 2013) found that entrepreneurial intention increases with more favourable SN, but at a greater rate for those respondents who have few satisfactory employment opportunities. This further confirm our assertion that, those adults' students may not be influenced by family and friends when it comes to desire to pursue entrepreneurial activities.

PBC had multiple correlation coefficients (R^2) of the path PBC explained 0.20 (20 per cent) variations in SN. Indicating that PBC had positive effects on the SN. This means that those who students who have desire to venture into business though may

not have the support from their family and close friends, could still venture into business so long as they have strong PBC. Students who view themselves as able to start businesses and keep them running, have control of start-ups, know the necessary practical details to start a firm, and believe in profitability of such venture would still have intentions without necessary support or influence from their family and close friends. On one hand, the present study reveals that PBC has influence on EI, R^2 change standardised regression weight is 0.44, that is, 44 per cent of PBC explained variations in EI. This result corroborated other studies (Ajzen, 1991; Iakovleva *et al.*, 2011) findings, which found a strong relationship between PBC and EI.

6. Concluding remarks

The present study result offers a worthwhile understanding into the landscape of the entrepreneurial setting in Botswana from an ODL tertiary institution students' perspective. We confirm that TPB can partially be applied in other environment in studying entrepreneurial intentions. Our study achieved statistically significant explanatory power of 62.5 per cent of the variations in EI, due to PA, SN and PBC that is considered to be more robust, given most studies have only managed to attain 30-50 per cent of variations in EI.

The study first contribution is refining the Ajzen's TPB through essentially introduction of SN as intervening variable between PA and EI, again SN between PBC and EI as a direct antecedent to intentions. In the literature we could not find much studies that have included SN and intervening variable; therefore, this study has explored the relationships between PBC and SN and found a positive significant effect that have added another dimension to the study of entrepreneurial intentions scale. The study also extends the literature in this interesting field that has long over-relied on literature generated in the Western world, through empirically testing the Ajzen's theory in the context of Botswana a developing country particularly from Africa. It is worth noting that the study of entrepreneurship is culture context in that, different regions or cultures are likely to have different factors intentions. The reason here is cultural values are likely to influence attitudes (Iakovleva *et al.*, 2011). Moreover, the paper implores scholars to question the validity of inclusion of the variable SNs in the study of entrepreneurial intentions given that it is receives strong support in other cultures. Last, the scale developed can also be useful in gauging the likelihood of unemployed students venturing into entrepreneurial activities.

This study contributes to the practice through the framework presented here that could be useful to the financiers of the potential entrepreneurs as this may offer guidelines in which to base their decisions on when deciding to fund new entrepreneurial ventures. In addition, government particularly, the Botswana government can find this result useful as this may inform decisions when granting students funds for new ventures. This is because not all unemployed graduates will have the desire to venture into business; therefore, funding them without first determining their intentions first may be foolhardy. Gauging entrepreneurial intentions among students involve a complex process such as knowing values and cultural aspects impacts on an individual. We opined in this study that, the main intellectual contribution of this manuscript could influence the ways grants are disbursed to various students, and also financiers can use the results to select the entrepreneurs with the highest likelihood of long-term success. This will ensure that only those students or students who qualify based on those criteria

(measurement scale) are eligible for funding, hence increasing the number of successful start-ups with possible successful rate.

Our main limitations of the present study come from cross-sectional data, entrepreneurial intentions cannot be perfectly measured in a snapshot type of situations, but rather may require monitoring over a period of time. This is because people and circumstances that drive or motivate them to venture into businesses are likely to change over time, hence creating new intentions. Methodologically we relied purely on quantitative data, therefore could not establish deep reasons behind intentions amongst the students. However, we suggest for triangulation approach as a way of in-depth inquiry to corroborate these findings in the context of Botswana. We could not establish significant effects of SN on EI, which is contrary to most studies. It is suggested that other research need to establish this relationship in the future. Given entrepreneurial intentions depends upon various factors, we recommend for further studies using similar variables in other cultural and geographical settings a way to validate the TPB theory as well as our results. Therefore, this study advances entrepreneurship research by addressing the call for more studies in developing countries context.

References

Agolla, J.E. and Van Lill, J.B. (2016), "An empirical investigation into innovation drivers and barriers in public sector organisations", *International Journal of Innovation Science*, Vol. 8 No. 4, pp. 404-422.

Ajzen, I. (1991), "The theory of planned behaviour", *Organisational Behaviour, And Human Decision Processes*, Vol. 50 No. 2, pp. 179-211.

Al-Mamun, S. and Fazal, S.A. (2018), "Effect of entrepreneurial orientation on competency and micro-enterprise performance", *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 12 No. 3, pp. 379-398.

Anne-Støren, L. (2014), "Entrepreneurship in higher education", *Education + Training*, Vol. 56 No. 8, pp. 795-813.

Aragon-Sanchez, A., Baixauli-Soler, S. and Carrasco-Hernandez, A.J. (2017), "A missing link: the behavioral mediators between resources and entrepreneurial intentions", *International Journal of Entrepreneurial Behavior and Research*, Vol. 23 No. 5, pp. 752-768.

Arrighetti, A., Caricati, L., Landini, F. and Monacelli, N. (2016), "Entrepreneurial intentions inthe time of crisis: a field study", *International Journal of Entrepreneurial Behavior and Research*, Vol. 22 No. 6, pp. 835-859.

Baughn, C.C., Chua, B.L. and Neupert, K.E. (2006), "The normative context for women's participation in entrepreneurship: a multicountry study", *Entrepreneurship Theory and Practice*, Vol. 30 No. 5, pp. 687-708.

Buli, B.M. and Yesuf, W.M. (2015), "Determinants of entrepreneurial intentions: technical-vocational, education and training students in Ethiopia", *Education+Training*, Vol. 57 No. 8/9, pp. 891-907.

Davey, T., Plewa, C. and Struwig, M. (2011), "Entrepreneurship perceptions and career intentions of international students", *Education + Training*, Vol. 53 No. 5, pp. 335-352.

Do Paço, A., Ferreira, J., Raposo, M., Rodrigues, R.G. and Dinis, A. (2011), "Entrepreneurial intention among secondary students: findings from Portugal", *International Journal of Entrepreneurship and Small Business*, Vol. 13 No. 1, pp. 92-106.

Dvouletyˇ, O. (2017), "Determinants of Nordic entrepreneurship", *Journal of Small Business and Enterprise Development*, Vol. 24 No. 1, pp. 12-33.

Engle, R.L., Dimitriadi, N., Gavidia, H., Schlaegel, C., Delanoe, S., Alvarado, I., He, X., Buame, S. and Wolff, B. (2010), "Entrepreneurial intent: a twelve-country evaluation of Ajzen's model of planned behaviour", *International Journal of Entrepreneurial Behavior and Research*, Vol. 16 No. 1, pp. 35-57.

Farrukh, M., Alzubi, Y., Shahzad, I.A., Waheed, A. and Kanwal, N. (2018), "Entrepreneurial intention: the role of personality traits in perspective of theory of planned behaviour", *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 12 No. 3, pp. 399-414.

Ferreira, J.J., Raposo, M.L., Rodrigues, R.G., Dinis, A. and do Paço, A. (2012), "A model of entrepreneurial intentions", *Journal of Small Business and Enterprise Development*, Vol. 19 No. 3, pp. 424-440.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Gelaidan, H.M. and Abdullateef, A.O. (2017), "Entrepreneurial intentions of business students in Malaysia: the role of self-confidence, educational and relation support", *Journal of Small Business and Enterprise Development*, Vol. 24 No. 1, pp. 54-67.

Ghasemi, A. and Zahediasl, S. (2012), "Normality tests for statistical analysis: a guide for non-statisticians", *International Journal of Endocrinology and Metabolism*, Vol. 10 No. 2, pp. 486-489.

Gurel, E., Altinay, L. and Daniele, R. (2010), "Tourism students' entrepreneurial intentions", *Annals of Tourism Research*, Vol. 37 No. 3, pp. 646-669.

Hair, J.F., Black, W.C. and Babin, B.J., A.R.E. (2010), *Applications of SEM, Multivariate Data Analysis*, 7th ed., Prentice Hall, Upper Saddle River, NJ, pp. 687-784.

Hussain, S. (2018), "Towards nurturing the entrepreneurial intentions of neglected female business students of Pakistan through proactive personality, self-efficacy and university support factors", *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 12 No. 3, pp. 363-378.

Iakovleva, T., Kolvereid, L. and Stephan, U. (2011), "Entrepreneurial intentions in developing and developed countries", *Education + Training*, Vol. 53 No. 5, pp. 353-370.

Ismail, M., Khalid, S.A., Othman, M., Jusoff, K., Abdul Rahman, N., Mohammed, K.M. and Shekh, R.Z. (2009), "Entrepreneurial intention among Malaysian undergraduates", *International Journal of Business and Management*, Vol. 4 No. 10, pp. 54-60.

Jarvis, L.C. (2016), "Identification, intentions and entrepreneurial opportunities: an integrative process model", *International Journal of Entrepreneurial Behavior and Research*, Vol. 22 No. 2, pp. 182-198.

Karimi, S., Biemans, H.J.A., Lans, T., Chizari, M. and Mulder, M. (2014), "Effects of role models and gender on students' entrepreneurial intentions", *European Journal of Training and Development*, Vol. 38 No. 8, pp. 694-727.

Karimi, S., Biemans, H.J.A., Lans, T., Chizari, M., Mulder, M. and Naderi Mahdei, K. (2013), "Understanding role models and gender influences on entrepreneurial intentionss among college students", *Procedia – Social and Behavioural Sciences*, Vol. 93, pp. 204-214.

Kebaili, B., Al-Subyae, S.S. and Al-Qahtani, F. (2017), "Barriers of entrepreneurial intentions among qatari male students", *Journal of Small Business and Enterprise Development*, Vol. 24 No. 4, pp. 833-849.

Kirkley, W.W. (2016), "Entrepreneurial behaviour: the role of values", *International Journal of Entrepreneurial Behavior and Research*, Vol. 22 No. 3, pp. 290-328.

Laspita, S., Breugst, N., Heblich, S. and Patzelt, H. (2012), "Intergenerational transmission of entrepreneurial intentions", *Journal of Business Venturing*, Vol. 27 No. 4, pp. 414-435.

Laylo, A. (2018), "Macro-level enabling conditions for the information of social business enterprises in the Philippines", *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 12 No. 1, pp. 5-13.

Lee-Ross, D. (2017), "An examination of the entrepreneurial intent of MBA students in Australia using the entrepreneurial intentions questionnaire", *Journal of Management Development*, Vol. 36 No. 9, pp. 1180-1190.

Linan, F. and Chen, Y. (2009), "Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions", *Entrepreneurship Theory and Practice*, Vol. 33 No. 3, pp. 593-617.

Mbrokoh, A.S. (2016), "Exploring the factors that influence the adoption of Internet banking in Ghana", *Journal of Internet Banking and Commerce*, Vol. 21 No. 2, pp. 1-21.

Nabi, G., Walmsley, A., Liñán, F., Akhtar, I. and Neame, C. (2016), "Does entrepreneurship education in the first year of higher education develop entrepreneurial intentions? The role of learning and inspiration", *Studies in Higher Education*, Vol. 43 No. 3, pp. 452-467.

Nunnally, J.C. (1978), *Psychometric Theory* (2nd ed.), MacGraw-Hill, New York, NY.

Nunnally, J.C. and Bernstein, I.H. (1994), *Psychological Theory*, MacGraw-Hill, New York, NY.

Papzan, A., Afsharzade, N. and Moradi, K. (2013), "Entrepreneurial intention determinants: an empirical model and a case of Iranian students in Malaysia", *Journal of Entrepreneurship, Management and Innovation*, Vol. 9 No. 3, pp. 43-55.

Park, C. (2017), "A study on effect of entrepreneurship on entrepreneurial intention: focusing on ICT majors", *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 11 No. 2, pp. 159-170.

Plattner, I., Lechaena, M., Mmolawa, W. and Mzingwane, B. (2009), "Are university students psychologically ready for entrepreneurship? A Botswana study", *African Journal of Business Management*, Vol. 3 No. 7, pp. 305-310.

Shiri, N., Mohammadi, D. and Hossein, S.M. (2012), "Entrepreneurial intentions of agricultural students: effects of role model, social support, social norms and perceived desirability: scholars research library", *Archives of Applied Science Research*, Vol. 4 No. 3, pp. 892-897.

Shook, C.L., Priem, R.L. and McGee, J.E. (2003), "Venture creation and the enterprising individual: a review and synthesis", *Journal of Management*, Vol. 29 No. 3, pp. 379-399.

Solesvik, M.Z., Westhead, P., Kolvereid, L. and Matlay, H. (2012), "Student intentions to become self-employed: the Ukrainian context", *Journal of Small Business and Enterprise Development*, Vol. 19 No. 3, pp. 441-460.

Sullivan, D.M. and Meek, W.R. (2012), "Gender and entrepreneurship: a review and process model", *Journal of Managerial Psychology*, Vol. 27 No. 5, pp. 428-458.

Tolentino, L.R., Sedoglavich, V., Lu, V.N., Garcia, P.R.J.M. and Restubog, S.L.D. (2014), "The role of career adaptability in predicting entrepreneurial intentions: a moderated mediation model", *Journal of Vocational Behaviour*, Vol. 85 No. 3, pp. 403-412.

Turker, D. and Selcuk, S.S. (2009), "Which factors affect entrepreneurial intentions of university students?", *Journal of European Industrial Training*, Vol. 33 No. 2, pp. 142-159.

Vinogradov, E., Kolvereid, L. and Timoshenko, K. (2013), "Predicting entrepreneurial intentions when satisfactory employment opportunities are scarce", *Education + Training*, Vol. 55 No. 7, pp. 719-737.

Yap, B.W. and Sim, C.H. (2011), "Comparisons of various types of normality tests", *Journal of Statistical Computation and Simulation*, Vol. 81 No. 12, pp. 2141-2155.

Zhao, H., Seibert, S.E. and Lumpkin, G.T. (2010), "The relationship of personality to entrepreneurial intentions and performance: a meta-analytic review", *Journal of Management*, Vol. 36 No. 2, pp. 381-404.

Further reading

Agolla, J.E. (2015), "Assessment of innovation in Kenya's public sector organisations", unpublished PhD thesis, North-West University, Mafikeng Campus Library, South Africa.

Bagozzi, R.P. and Yi, Y. (1988), "On the evaluation of structural equation models", *Journal of the Academy of Marketing Science*, Vol. 16 No. 1, pp. 74-94.

Bernstein, I.H. and Nunnally, J. (1994), *Psychometric Theory*, Mc-Graw-Hill, New York, NY.

Campbell, D.T. and Fiske, D.W. (1959), "Convergent and discriminant validation by the multitrait-multimethod matrix", *Psychological Bulletin*, Vol. 56 No. 2, pp. 81-105.

Park, C.H. and Chu, H. (2018), "Exploration on factors influencing Korean diaspora entrepreneurs' investment in the homeland: evaluation of the WKBC and WKBN", *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 12 No. 3, pp. 338-362.

Corresponding author

Joseph Evans Agolla can be contacted at: nyagonya2009@gmail.com