Exploring Entrepreneurial intention's mediating role in the relationship between Self-efficacy and Nascent behaviour: evidence from Zambia, Africa

Abstract:

Purpose

–This paper examines the mediating role of entrepreneurial intention (EI) in relation to the influence of the five dimensions of entrepreneurial self-efficacy (ESE) on nascent behaviour.

Design/methodology/approach

– The study relies on a quantitative approach where primary data were collected from 294 final year undergraduate students at a public university in Zambia. The data were examined by using correlation, logistic regression and mediation analyses.

Findings

– The findings indicate that each of the five dimensions of ESE is positively and significantly related with EI. Additionally, each of the ESE dimensions, except the financial aspect, is positively correlated with nascent behaviour. Lastly, the results show that the influence of ESE dimensions on nascent behaviour is significantly mediated by intention.

Research limitations/implications

–The study took place in a public university in Zambia; more universities could be involved to improve the generalisability of the study conclusions.

Practical implications

–The study shows that the five ESE dimensions positively influence not only business start-up intention but also nascent behaviour. To motivate graduates' involvement in business start-up, there is a need to tailor training and practical pedagogical approaches on entrepreneurship that are focused on developing the five ESE dimensions.

Originality/value

– This paper extends an emerging body of knowledge which has not been fully investigated in terms of the mediating role of intention on the relationships between dimensions of ESE and nascent behaviour. The study also makes a valuable contribution to the under-researched context of Zambia and African entrepreneurship.

Keywords: Nascent Behaviour, Self-efficacy, Intention, Mediation, Zambia, Africa

1.0 Introduction

Entrepreneurship is a process of identifying, evaluating and exploiting opportunities through organised efforts that have not previously existed (Carree and Thurik, 2010; Shane, 2003). For any economy, this contributes to employment generation, promotes innovation and competition through increased consumer choices (Hessels and van Stel, 2011; de Wit and de Kok, 2014). Therefore, there is a need for every country to continuously consider how to promote entrepreneurship. In Zambia, Micro, Small and Medium-sized Enterprises (MSMEs) represent 97% of all firms and offer 82% of the jobs in the country (CSO, 2013; Peters, 2014). Like many other governments, the Zambian government has taken many actions over the last two decades to promote and support entrepreneurship. Yet despite some improvements in ease of starting and doing business, a number of challenges still exist.

Firstly, based on the only three reports (i.e. 2010, 2012 and 2013) in which Zambia has been included, the Global Entrepreneurship Monitor (GEM) indicates that only 67% of Zambians view entrepreneurship as a good career choice, lower than the sub-Saharan Africa average of 77% (Amorós and Bosma, 2013; Kew, 2015). While the entrepreneurial intention (EI) at 45% in the adult population is slightly lower than the regional average of 47%, the country performs dismally compared to other African countries like Uganda (61%), Malawi (67%) and Botswana (59%). Thirdly, when it comes to the rate of ownership of established businesses (businesses older than 42 months) among the 2000 individuals surveyed in Zambia, research indicates 17% compared to Uganda (36%), Ghana (26%), Nigeria (18%) and the regional average of 15% (Amorós and Bosma, 2013; Herrington and Kelley, 2012; Kelley et al., 2011, 2012). This observation resonates with the World Bank's new business density index showing the number of new businesses per 1000 working age adults in a country. In 2010, 2011 and 2012, the index in Zambia was dismal at 1.0, 1.2 and 1.4, respectively (World Bank, 2014a). Based on the 2013 data, Zambia's new business density index was a paltry 1.36 compared to New Zealand's 15.07, South Africa's 6.5 and Botswana's 12.3 (World Bank, 2014a, 2014b). Lastly, the discontinuity rate of business (mortality rate) was at 20%, above the regional average of 17% in 2013.

While the most problematic factors for doing business in Zambia include challenges in accessing finance, high levels of corruption and high tax rates, it is possible that inadequate entrepreneurial capabilities of fledgling entrepreneurs also contribute to higher business mortality rate (Herrington and Kelley, 2012; McGee et al., 2009). Inadequate entrepreneurial capabilities may also contribute to lower rates of start-up intention and nascent behaviour. This perspective resonates with the human capital theory which posits that relevant skills, knowledge and experience can lead to higher performance outcomes in any field, including the field of entrepreneurship (Matlay, 2008; Unger et al., 2011).

Since entrepreneurship is planned behaviour (Krueger et al., 2000), an individual may not engage with an identified opportunity if he/she does not develop an EI. EI is a self-acknowledged conviction and commitment to start-up a business at a specified point in the future (Solesvik et al., 2012; Thompson, 2009). The GEM reports suggest that EI positively correlates with actual business creation rates in a society (Kelley et al., 2012). In this regard, EI is a measure of entrepreneurial potential in a country (Henley, 2007; Kautonen et al., 2013). Therefore, in order to promote entrepreneurship in any society, understanding antecedents and consequences of EI is important (Kelley et al., 2012; Thompson, 2009; Kautonen et al., 2013).

Based on the works of Azjen (2011), Sokol and Shapero (1982) as well as Bandura (Bandura, 2001), EI is a function of favourable perceptions that entrepreneurship is desirable and feasible (Ajzen, 1991; Fitzsimmons and Douglas,

2011; Shapero and Sokol, 1982). While desirability refers to the extent to which an individual considers entrepreneurship to be attractive and worthwhile, feasibility refers to the extent to which an individual considers him/herself capable of performing entrepreneurship roles. Perception of feasibility resonates with the notion of entrepreneurial self-efficacy (ESE) i.e. the degree of confidence that an individual has in his/her ability to perform the tasks required in entrepreneurship (Zhao et al., 2005; Herath and Mahmood, 2014). Nascent behaviour refers to the start and completion of some among many actual practical steps toward setting up a new business (McGee et al., 2009; Rostefoss and Kolvereid, 2005). Extant literature shows some knowledge gaps in the link amongst ESE, intention and nascent behaviour.

Firstly, a few studies have linked ESE and nascent behaviour in the USA (Chen et al., 1998; McGee et al., 2009) and Sweden (Osmonalieva, 2013), ESE and firm performance in Sri Lanka (Herath and Mahmood, 2014), ESE and firm competitiveness in South Africa (Urban,2012), Entrepreneurship Education and ESE (Malebana and Swanepoel, 2014) as well as ESE and EI in Colombia (Campo, 2011) and USA (Kickul et al., 2009). However, there is a shortage of studies exploring the role of EI in the relationship between ESE and nascent behaviour. This limits scholars, educators, enterprise support practitioners and policy makers' understanding of detailed specific mechanisms by which individuals transition from entrepreneurial capabilities to nascent behaviour and eventually to business start-up (Kautonen et al., 2013; McGee et al., 2009; Henley, 2007).

Secondly, studies on nascent behaviour and intention are mainly conducted in developed countries (Fayolle and Liñán, 2014; Hoskisson et al., 2011; Liñán and Fayolle, 2015), thus limiting generalisability of conclusions. Developing countries differ from developed countries in socio-economic contexts and so it would be important to assess whether these frameworks are particularly applicable in diverse contexts as this would help in theory development and promotion of entrepreneurship (Bruton et al., 2010). In fact, the developing country from which the empirical data was collected for the current study, Zambia, is an under-researched context. Yet the country has high levels of youth graduate unemployment, hence the need to promote entrepreneurship in order to contribute to the generation of employment (Koe, 2016).

In light of the foregoing gaps, the current study's objectives are threefold. Firstly, it seeks to examine the influence of the multidimensional ESE on business start-up intention. Secondly, the study explores the influence of intention on nascent behaviour. Thirdly, the study empirically examines the under-researched mediating role of intention in the relationship between self-efficacy and nascent behaviour. While a handful of prior studies specifically examine ESE to explain nascent behaviour, the potential for theorising about the mediating role of intention in this relationship is neglected (Rotefoss and Kolveried, 2005; McGee et al., 2009; Henley, 2007). The central argument is that since nascent behaviour (by definition) follows intention, then factors that promote intentionality (including ESE) may also help to predict nascent behaviour. The structure of the rest of the paper is as follows: Section 2 delineates nascent behaviour from intention and self-efficacy and develops the requisite hypotheses. Section 3 highlights the methods and the measurement model. Section 4 presents the results while Section 5 makes conclusions based on the findings.

2.0 Literature Review and Hypotheses

Entrepreneurial Self-Efficacy

Social learning theory indicates that individual differences in behaviour emanate largely from differences in the types of learning experiences encountered in the

course of growing up and/or socialisation (Bandura and Albert, 1989). These experiences may affect one's perceived self-efficacy toward certain tasks (Bandura, 2001). Self-efficacy is the extent to which an individual believes in his or her capability to undertake a particular task in a given environment (Mauer et al., 2009). Based on social learning theory, behavioural patterns are learnt through: a) mastery experiences (prior actual, related or simulated experience of something and the associated positive/negative feedback); b) role modelling and vicarious experiences i.e. observation of credible role models of the behaviour and the consequences of the behaviour; and, c) social persuasion i.e. what is acceptable is learnt through social peer pressure and social discourse (Mauer et al., 2009).

The aforementioned learning experiences lead to enhanced self-efficacy i.e. the perceived capabilities to perform a specific ''task'' or handle a specific event or series of related events (Bandura, 1982). Scholars establish that self-efficacy is the most effective predictor of individual behaviour and performance (Unger et al., 2011; Wood and Bandura, 1989). Scholars indicate that entrepreneurial self-efficacy (ESE) is the strength of a person's belief that he/she is capable of successfully performing the various roles and tasks of entrepreneurship (Forbes, 2005; McGee et al., 2009). This refers to the tasks associated with new-venture creation, management and growth. Self-efficacy should, therefore, be viewed as a person's belief in his or her likelihood of completing the tasks required to successfully initiate and establish a new venture (Forbes, 2005; Kickul and D'Intino, 2005; Moberg, 2011).

Chen et al. (1998) identified 6 categories of an entrepreneur's roles: "innovator, risk taker and bearer, executive manager, relation builder, risk reducer, and goal achiever" (p.303). These roles correspond to the five sets of entrepreneurial tasks namely marketing, innovation, management, financial control, and risk taking (Jung et al., 2001; De Noble et al., 1999). De Nobel et al. (1999) developed 23 items as measures covering six theoretical dimensions i.e. perception of the entrepreneurs'/managers' abilities to develop new product and market opportunities, build an innovative environment, initiate investor relationships, define core purpose, cope with unexpected challenges, and develop critical human resources. Chen et al. (1998) argue that these tasks should be the dimensions for assessing ESE. In the study by Chen et al. (1998), based on two surveys in the USA, ESE was identified to be positively related to the business start-up intention and that students taking entrepreneurship courses had higher self-efficacy in marketing, management, and financial control than the other students. It was also established that business founders had higher self-efficacy in innovation and risk-taking than others not engaged in business creation.

Further, McGee et al. (2009) developed an improved and simplified set of ESE dimensions namely (1) searching for business opportunities, (2) planning for successful exploitation of business opportunities, (3) marshalling resources and networks as well as convincing others to identify, work and invest in the entrepreneurial opportunities, (4) implementing-people i.e. personnel and human resources aspects of implementation, and, (5) implementing-finance i.e. financial aspects of implementation (Urban, 2012). The dimensions were empirically tested using a sample of adults in the USA and found that each of the dimensions of ESE was positively related to attitude to entrepreneurship and nascent behaviour.

Based on the foregoing, individuals with higher levels of ESE are expected to have higher intention to engage in entrepreneurial activity. Thus, ESE can help to predict the likelihood of an individual becoming an entrepreneur. Individuals with high ESE believe in their abilities to influence the achievement of goals. In relation to business start-up, they are expected to perceive a high probability of success. This perspective is consistent with the human capital theory which suggests that relevant skills, knowledge and experience can lead to higher performance outcomes in any field, including entrepreneurship (Matlay, 2008; Unger et al., 2011).

Entrepreneurial Intention

Entrepreneurial intention (EI) is a state of mind that precedes the creation of a new firm (Bird, 1988; Shook et al., 2003). The intention is an indication of how hard an individual is willing to try, of how much of an effort he or she is planning to exert, in order to perform the behaviour. As a general rule, the stronger an individual's intention to undertake a specific behaviour, the more likely that individual would engage in that behaviour. Based on the works of Azjen (1991) as well as Sokol and Shapero (1982), EI is a function of favourable perceptions that entrepreneurship is desirable and feasible. Some prior studies indicate that other predictors (whether at the individual or institutional levels) would influence EI through perceived feasibility and desirability of entrepreneurship (Ajzen, 1991, 2011; Fitzsimmons and Douglas, 2011; Liñán et al., 2011; Shapero and Sokol, 1982).

The perception of feasibility of entrepreneurship is related to the notion of entrepreneurial self-efficacy (ESE) i.e. the degree of confidence that an individual has in his/her ability to perform the tasks and roles of entrepreneurship (Sánchez, 2013; Zhao et al., 2005). The results of a study in Spain by Linãn et al. (2011) indicate that the primary determinants of EI are personal attitude and perceived behavioural control (i.e. perceptions of desirability and feasibility of entrepreneurship). Based on a longitudinal study in Spain, Sanchez (2013) reports that EI is positively related to self-efficacy, proactiveness and risk taking. Supported by results from a sample of 250 engineering undergraduate students in France and UK, Souitaris et al. (2007) conclude that perceptions of entrepreneurial capability lead to EI. Based on a sample of 114 students enrolled in practice-oriented and theory-oriented entrepreneurship modules, other researchers also indicate that self-efficacy is significantly related to EI (Piperopoulos and Dimov, 2015).

Furthermore, a few other studies in South Africa (Malebana, 2014; Malebana and Swanepoel, 2014; Urban, 2006) and Ethiopia (Gerba, 2012) report that self-efficacy/perceived behavioural control is positively associated with EI. However, in intentionality research, only a couple of studies actually use the multidimensional entrepreneurial self-efficacy scale developed by McGee et al. (2009). One such study was conducted by Campo (2011) in Colombia based on a sample of 61 undergraduate students. The other study was undertaken by Kickul et al. (2009) in the USA supported by a sample of 138 postgraduate students. Campo (2011) finds that not all five ESE dimensions significantly influence EI. Particularly, only marshalling had a positive significant effect while implementing people had a negative significant effect. Kickul et al. (2009) report that all ESE dimensions are positively associated with EI. The mixed conclusions from the aforementioned studies entail that there continues to be a need for more empirical evidence on the relationship between ESE dimensions and EI, especially in under-researched contexts. In light of the foregoing literature, this research hypothesises as follows:

H_1: entrepreneurial self-efficacy is positively related to entrepreneurial intention.

- *H_1a: Confidence in ability to generate product/market ideas (searching) is positively associated with entrepreneurial intention*
- *H_1b: Confidence in ability to develop a feasible business plan has a positive relationship with entrepreneurial intention*
- *H_1c: Confidence in ability to marshal resources has a positive effect on entrepreneurial intention*
- *H_1d: Confidence in people-aspects of implementation positively affects entrepreneurial intention*
- *H_1e: Confidence in financial-aspects of implementation positively affects entrepreneurial intention*

Nascent behaviour

Wagner (2007) defines a nascent entrepreneur as "…a person who has been active in trying to start a new firm in the past 12 months…" (p16). Nascent entrepreneurs engage in nascent behaviour i.e. initiating the practical steps needed to start a new firm. If an individual argues that he/she recently decided to become self-employed in the future, but has not yet taken active steps to realise that intention, he/she is an aspiring but not a nascent entrepreneur (Forbes, 1999; Rotefoss and Kolvereid, 2005). The decision/intention to become self-employed comes first; taking first steps comes next (sometimes). The focus on nascent behaviour is a result of the desire to understand how organisations emerge (Unger et al., 2011; Wagner, 2007). This is important because, globally, countries are interested in understanding how to facilitate and quicken individuals' transition from mere ideas to real businesses. In this regard, many universities offer courses on how to create, manage and grow a new business (Katz, 2003; Matlay, 2009).

The foregoing conceptualisation entails that nascent entrepreneurs have yet to start a new venture. However, they not only possess the desire to start a new firm but are also involved in specific activities that bring such desires to fruition (Obschonka et al., 2011). Usually, such individuals have engaged in at least two start-up activities, such as looking for facilities and equipment, writing a business plan, investing money, or organising a start-up team (McGee et al., 2009). Scholars empirically establish that individuals who consider themselves to be capable of performing tasks necessary to start-up a business are likely to develop an entrepreneurial intention (Liñán et al., 2011; Roy et al., 2017). Based on 250 undergraduate students in engineering programmes in France and UK, Souitaris et al. (2007) find a positive but insignificant influence of EI on nascent behaviour. In Finland and UK, based on working age samples, scholars find significant support for the intention-behaviour link (Henley, 2007; Kautonen et al., 2013). The foregoing mixed results entail that there continues to be a need for more evidence on the intention-behaviour link especially in under-researched contexts. Since scholars postulate that intention is the best predictor of future planned behaviour (Ajzen, 1991; 2011), it would be plausible to expect that individuals with higher entrepreneurial intention will eventually begin to take practical steps to actually engage in start-up activities. Therefore, this study further posits as follows:

H_2: entrepreneurial intention is positively related to nascent behaviour

Entrepreneurial Intention Mediates the Effect of Self-Efficacy on Nascent Behaviour

This study is suggesting that EI mediates the influence of entrepreneurial self-efficacy (ESE) dimensions on nascent behaviour. Based on confidence in their abilities to perform the tasks and roles of entrepreneurship, individuals with higher ESE are expected to express an intention to start-up a business. This thinking is in line with the theory of planned behaviour (Ajzen, 2011) that the higher the level of perceived behavioural control related to entrepreneurship, the higher the intention to start-up a business (Liñán et al., 2011; Nabi et al., 2017). Based on undergraduate and postgraduate student samples, Zhao et al. (2005) and Kickul et al. (2009) in the USA as well as Campo (2011) in Colombia indicate that ESE significantly influences EI. In turn, since scholars empirically establish that intention is the best predictor of actual behaviour (Henley, 2007; Kautonen et al., 2013), individuals with higher intentions will have a higher likelihood of initiating the steps necessary to actually start-up a business i.e. nascent behaviour. Indeed, Henley (2007) in UK and Kautonen et al. (2013) in Finland and Austria empirically find that individuals with well-formed intentions are more likely to actually engage in business start-up. Thus, the study hypothesises as follows:

H_3: entrepreneurial intention mediates the relationship between entrepreneurial self-efficacy and nascent behaviour

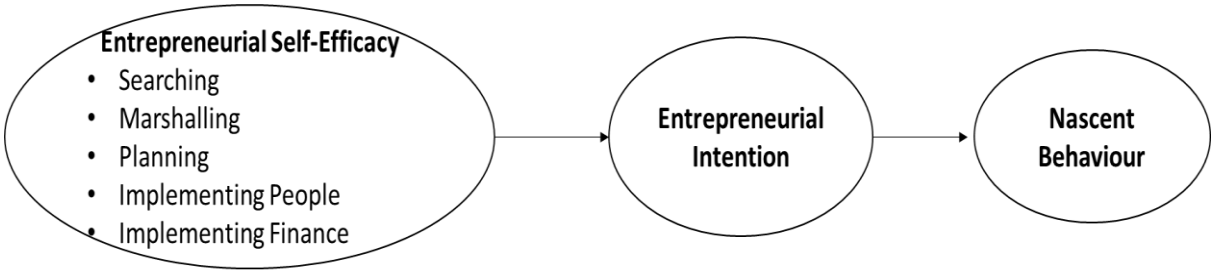

Figure 1: Conceptual Model: Self-Efficacy, Intention and Nascent behaviour

3.0 Methods

The research sought to examine the relationships amongst entrepreneurial self-efficacy (ESE), entrepreneurial intention (EI) and nascent behaviour, thus a quantitative design was employed (Creswell, 2012). A self-completion questionnaire was administered to 350 final year undergraduate business and natural sciences students in a public university in Zambia. This led to 294 usable questionnaires (84% response rate). It is typical for EI research to utilise final year student respondents because the imminent completion of their studies compels them to actively consider the next steps in their careers (Liñán et al., 2011). For some, starting a business may be realistic.

To assure content validity and allow for comparison of results with prior studies (Gartner et al., 1989; Thompson, 2009), the construct items for the questionnaire were adopted from prior research. Specifically, measures for entrepreneurial self-efficacy (19 items) and nascent behaviour (6 items) were adopted from McGee et al. (2009). Similarly, measures for entrepreneurial intention (6 items) were adopted from Liñán et al. (2011).

The instrument sought to assess students' confidence in performing the following entrepreneurial tasks (See Table 1): marshalling (ability to assemble resources for a start-up); the day to day management of people (implementing people); searching for/developing a new product/business idea; day to day management of finances (implementing finance); and, the ability to develop a feasible business plan (Planning). For EI the 6 items were: "I am ready to do anything to be an entrepreneur"; "My professional goal is becoming an entrepreneur"; "I will make every effort to start and run my own firm"; "I am determined to create a firm in the future"; "I have very seriously thought about starting a firm"; and, "I have got the firm intention to start a firm someday". All items for ESE and EI were measured on five-point Likert scales where 1 was 'strongly disagree' and 5 was 'strongly agree'. Nascent behaviour was measured using 6 dichotomous variables (yes/no) and an individual was categorised as a nascent entrepreneur if he or she had undertaken at least any two of the six items (McGee et al., 2009; Rotefoss and Kolvereid, 2005). For nascent behaviour, the 6 items were: "Attending a start your own business planning seminar or conference"; "Writing a business plan/participating in seminars that focus on writing a business plan"; "Putting together a start-up team"; "Looking for a building or equipment for the business"; "Saving money to invest in the business"; and, "Developing a product or service".

Measurement Model Validation

To further assure construct validity, a principal component analysis with Promax rotation (Hair et al., 2006; Pallant, 2016) was executed to examine the factor structure of the ESE measures (see Table 1). To assess factorability of the

correlation matrix, the Kaiser-Meyer-Olkin Measure of sampling adequacy at 0.879 was above the minimum 0.50 threshold (Pallant, 2016) and Bartlett's Test of Sphericity was significant (Approx. Chi-Square=2244.940, df= 171, sig. <0.0005). Five factors with the Eigenvalues above 1.0 were evident. These factors were generally consistent with the constructs adopted from McGee et al. (2009), representing the ESE themes of searching, planning, marshalling, people and finance aspects of implementation. These five factors altogether explained 64.1% of the variance. Reliability tests for internal consistency of the respective items in the five dimensions of ESE yielded Cronbach Alpha scores above the threshold of 0.70, suggesting that the constructs are reliable (Pallant, 2016). Lastly, the EI construct yielded a reliability coefficient (Cronbach's Alpha) of 0.837.

Table 1 Factor and Reliability Analyses for Self-Efficacy Constructs

Entrepreneurial Self-Efficacy Dimensions	**Components**				
	1	2	3	4	5
Marshalling					
Clearly and concisely explain verbally/in writing my business idea in everyday terms	**0.723**	0.203	0.236	0.083	0.202
Network i.e. make contact with and exchange information with others	**0.707**	0.245	0.245	0.128	-0.197
Get others to identify with and believe in my vision and plans for a new business	**0.673**	0.190	0.286	0.006	-0.101
Implementing People					
Inspire, encourage, and motivate my employees	0.127	**0.727**	0.201	0.309	0.002
Supervise employees	0.136	**0.708**	0.117	0.100	0.164
Train employees	0.099	**0.684**	0.085	0.218	0.082
Deal effectively with day to day problems and crises	0.212	**0.634**	0.265	0.138	0.057
Recruit and hire employees	0.201	**0.581**	0.116	-0.090	0.198
Delegate tasks and responsibilities to employees in my business	0.103	**0.525**	-0.070	0.101	0.246
Searching					
Identify the need for a new product	0.226	0.148	**0.765**	0.184	0.073
Brainstorm (come up with) a new idea for a product	0.186	0.088	**0.734**	0.048	0.079
Design a product or service that will satisfy customer needs and wants	0.256	0.248	**0.580**	-0.066	0.214
Implementing Finance					
Manage the financial assets of my business	0.091	0.201	0.014	**0.849**	0.077
Read and interpret financial statements	-0.024	0.075	0.088	**0.802**	0.021
Organise and maintain the financial records of my business	0.206	0.319	0.151	**0.717**	0.014
Planning					
Determine a competitive price for a new product or service	0.104	0.181	0.173	0.058	**0.836**
Estimate the amount of start-up funds and working capital necessary to start my business	0.201	0.034	0.089	0.224	**0.660**
Design an effective marketing/advertising campaign for a new product or service	0.202	0.133	0.231	-0.046	**0.608**
Estimate customer demand for a new product or service	0.109	0.198	0.119	0.104	**0.602**
Eigenvalues	**6.806**	**1.971**	**1.307**	**1.084**	**1.016**
Variance Explained (64.08%)	**35.836**	**10.310**	**6.878**	**5.705**	**5.346**
Cronbach`s Alpha (Reliability Tests)	**0.756**	**0.826**	**0.716**	**0.789**	**0.706**

Based on the foregoing measurement model, hypotheses were tested using the Statistical Package for Social Sciences (SPSS). Specifically, correlation, logistic regression (since the dependent variable was dichotomous) and bootstrap mediation analyses were conducted. This approach is consistent with extant literature in entrepreneurship research (Cardon et al., 2009; Khedhaouria et al., 2015; Swickert et al., 2012).

According to scholars (Baron and Kenny, 1986; Hayes, 2013), the basic idea of mediation is that the effect of X on Y may be exerted via two routes i.e. a direct effect (X influencing Y directly) and/or an indirect effect through a mediator variable (M). The indirect effect entails that X has an influence on M (i.e. path a) and, in turn, M has an impact on Y (i.e. path b). Baron and Kenny (1986, p.1177) provide a procedure to test for mediation. Variable M is considered a mediator if three criteria are met i.e. equation 1: X significantly predicts Y (i.e. path c), equation 2: X significantly predicts M, and equation 3: M significantly predicts Y when controlling for X (Baron and Kenny, 1986; Preacher and Hayes, 2008). Equations 1 and 2 are simple regression equations. In equation 3, the effect of X on Y should become smaller than the effect of X on Y in equation 1 as measured by the regression coefficients (slope). Following this procedure, although there is a reduction in the regression coefficient for each ESE dimension after introducing the mediator (see Table 4, models 2 and 3), EI in this study does not appear to mediate the relationships between each of the four dimensions of self-efficacy (except in the case of ESE marshalling). This is due to one or more of the foregoing three criteria not being met.

However, contemporary researchers emphasise the importance of specifically testing the significance of the indirect effects to overcome the shortcomings inherent in the Baron and Kenny method (Hayes and Rockwood, 2016; Naylor et al., 2012). These shortcomings include the fact that the Baron and Kenny (1986) approach does not directly test for the indirect effect; has higher type 1 error rates; has lower power; assumes normal distribution of errors; and, emphasises the need for a significant direct effect (X on Y) as a precondition for mediation analysis (Hayes, 2009; Preacher and Hayes, 2008; Swickert et al., 2012; Zhao et al., 2010). Baron and Kenny (2006) argue that evidence of mediation exists if the direct effect of X on Y when M is present differs from the effect of X on Y when M is absent (Preacher and Hayes, 2008). Statistically, testing if these two effects differ is more robust than conducting a series of regression analyses (Preacher and Hayes, 2008). The Sobel test provides a more direct test of an indirect effect but assumes a normal distribution of errors (Preacher and Hayes, 2008). A more conservative approach is not to assume normal distributions but to instead use a bootstrap test (Soulsby and Bennett, 2015; Zhao et al., 2010). Preacher and Hayes (2008) provide the framework and necessary SPSS syntax to test for significance of mediation with the Sobel test and a bootstrapping test. This approach to mediation analysis has gained prominence in entrepreneurship research literature (Cardon et al., 2009; Goethner et al., 2009; Khedhaouria et al., 2015).

4.0 Results

4.1 *Sample profile*

As can be observed from Table 2, 51.5% of the respondents were male and 48.5% were female. With 80% of the respondents between 18 and 23 years of age and only 6% above the age of 26, the average age in the sample was 22.6. This is consistent with prior studies on Zambian university students (Mwiya, 2014). Prior research indicates that older individuals are more likely to have higher self-efficacy and entrepreneurial intention (EI) because of employment experience (Henley, 2007). Extant literature also indicates that gender is an important consideration in entrepreneurship. This is because women have less early career experience, social support and fewer role models than their male counterparts (BarNir et al., 2011; Shinnar et al., 2014) and so they are likely to report lower EI and its antecedents. Based on correlation coefficients in Table 3, the results on age and gender are consistent with extant literature in relation to EI but not nascent behaviour. In the current study, while age and gender are both positively associated with EI and nascent behaviour, the results are only statistically significant with EI.

With regard to field of study, while 76.8% of the respondents were enrolled in business related programmes (economics, accounting, administration and marketing), 23.2% were pursuing non-business degrees (natural sciences and natural resources). This distribution was important because the findings would be meaningful across different disciplines. In terms of nascent behaviour, 62.1 percent of the respondents were engaged in some practical steps in preparation for starting up a business while 37.1% were not. The Global Entrepreneurship Monitor (GEM) reports indicate that, compared to innovation-driven economies, factor and efficiency-driven economies report higher total early entrepreneurial activity (i.e. nascent behaviour and new business birth rates) because of high necessity-motivated entrepreneurship. In 2012, the GEM survey on Zambia had 41% total early entrepreneurial activity (Kelley et al., 2012). However, as is typical with factor-driven economies, established business rates were much lower at 4% in 2012 and 17% in 2013 (Amorós and Bosma, 2013).

Table 2 Sample Profile

Characteristic	Description	Percentage
Age	18 to 20	8.00
	21 to 23	72.00
	24 to 26	14.00
	above 26	6.00
Gender	Male	51.54
	Female	48.46
Discipline	Economics	16.38
	Natural Sciences	10.58
	Natural Resources	12.63
	Banking Finance	7.51
	Bachelor of Accountancy	16.38
	Bachelor of Business Administration	17.75
	Marketing	18.77
Nascent Entrepreneur	NO	37.90
	Yes	62.10

4.2 Correlations among Self-Efficacy, Intention and Nascent behaviour

Table 3 shows the means and standard deviations of the dependent variable (nascent behaviour), independent variables (the five dimensions of entrepreneurial self-efficacy), control variables (age and gender) and the proposed mediator (entrepreneurial intention). The correlations among all these variables are also presented; all the correlations are less than 0.80. Though statistically significant, relatively low intercorrelations among the variables indicate that multicollinearity should not be a problem (Pallant, 2016).Table 3 shows that, with the exception of Implementing Finance ($p>0.05$) which is insignificant, four of the five dimensions of entrepreneurial self-efficacy (ESE) are significantly positively correlated with nascent behaviour ($p<0.01$). Except for finance aspects of implementation, this means that individuals with higher ESE are more likely to engage in nascent behaviour i.e. initiating the practical steps to start-up a business. Additionally, Table 3 shows that each of the five dimensions of ESE is significantly and positively correlated with EI ($p<0.01$). This means that individuals with higher ESE are more likely to intend to start-up a business. Therefore, individuals who are more likely to express an intention to start-up a business are those with high ESE i.e. high confidence in their abilities to search for business opportunities or develop new product ideas (searching); to convert an idea into a feasible business plan (planning); assemble the required resources (marshalling); understand and manage the required finances (implementing finance); as well as manage the human resources (implementing people). Lastly, the results in Table 3 also reveal that EI is positively associated with nascent behaviour ($p<0.01$).

Table 3 Mean, Standard Deviation (SD) and Correlation Matrix

#	Variable	Mean	Std. Deviation	N	1	2	3	4	5	6	7	8
1	Nascent Behaviour	0.620	0.486	293	-							
2	Entrepreneurial Intention	3.976	0.892	293	0.277**	-						
3	Age	22.620	2.969	285	0.035	0.187**	-					
4	Gender	0.490	0.501	292	0.028	0.252**	0.338**	-				
5	ESE Searching	3.820	0.790	293	0.215**	0.402**	0.121*	0.173**	-			
6	ESE Planning	3.716	0.769	293	0.263**	0.409**	0.118*	0.143*	0.562**	-		
7	ESE Marshalling	3.820	0.867	293	0.293**	0.380**	0.100	0.101	0.586**	0.589**	-	
8	ESE Implementing Finance	4.032	0.951	292	0.078	0.205**	0.011	0.036	0.253**	0.284**	0.250**	-
9	ESE Implementing People	4.036	0.736	292	0.254**	0.369**	0.110	0.035	0.502**	0.576**	0.551**	0.423**

** Correlation is significant at the 0.01 level (2-tailed) * Correlation is significant at the 0.05 level (2-tailed)

4.3 Regressing ESE and Intention on Nascent Behaviour

Table 4 presents results of logistic regression analyses examining the combined influence of the control variables, each of the dimensions of ESE and EI on nascent behaviour.

Table 4 Results of Logistic Regression Analyses for Nascent Behaviour (Y)

	Model 1	Model 2	Model 3
Control Variables	B	B	B
Gender	0.020	-0.004	-0.016
Age	0.087	-0.002	-0.145
Independent Variables (X)			
ESE Searching		0.009	-0.093
ESE Planning		0.306	0.206
ESE Marshalling		0.488*	0.449*
ESE Implementing People		0.318	0.256
ESE Implementing Finance		0.089	-0.107
Mediator (M)			
Entrepreneurial Intention			0.510**
Chi-square	0.451	31.075**	40.054**
Change in Chi-square	0.451	30.624**	8.979**
Pseudo R-Squared			
Cox & Snell R square	0.002	0.104	0.132
Nagelkerke R Square	0.002	0.141	0.179

*p<0.05, ** p<0.01

Table 4 reflects the three logistic regression models performed to assess the combined effects of control variables (Model 1: age and gender), independent variables (Model 2: each of the five dimensions of entrepreneurial self-efficacy), and the mediator variable (Model 3: entrepreneurial intention), on the likelihood that respondents would report nascent behaviour. When only the control variables are considered, model 1 is statistically insignificant ($\chi 2$ (2, N = 284) =0.451, p=0.798), indicating that the model was unable to distinguish between the respondents who reported nascent behaviour and those who did not. The pseudo-R-squared values are Cox and Snell R Squared =0.002 and Nagelkerke R Squared=0.002. In Model 2, besides the control variables, the five entrepreneurial self-efficacy (ESE) dimensions are introduced. Model 2 is statistically significant at 1% ($\chi 2$ (7, N = 285) = 31.075, p=0.0005), indicating that the model was able to distinguish between respondents who reported nascent behaviour and those who did not report nascent behaviour. In addition, model 2 explained 10.4% (Cox and Snell R squared) and 14.1% (Nagelkerke R squared) of the variance in the nascent behaviour status. In terms of individual contribution to the variance, only ESE Marshalling had a significant effect (B=0.488, p=0.016); the rest of the independent variables were insignificant.

Lastly, Model 3, besides considering the control variables and the independent variables, introduces the mediator variable (M) i.e. entrepreneurial intention. The full model containing all variables was statistically significant at 1% ($\chi 2$ (8, N = 285) = 40.054, p=0.0005), indicating that the model was able to distinguish between respondents who reported and those who did not report nascent behaviour. The model as a whole explained 13.2% (Cox and Snell R squared) and 17.9% (Nagelkerke R squared) of the variance in the nascent behaviour status. The model also correctly classified 69% of cases. As shown in

Table 4, only EI (B=0.510, p=0.003) and ESE Marshalling (B=0.449; p=0.030) were statistically significant in model 3. When models 2 and 3 are compared, introducing EI has resulted in the reduction of the regression coefficients (B) for each independent variable. This connotes possible mediation effects of EI on the relationships between ESE dimensions and nascent behaviour (Baron and Kenny,1986, p.1177). The next subsection reports mediation analyses results.

4.4 Statistical Mediation Analyses Results

The empirical evidence adduced in the preceding sections supports hypothesis 1 that each of the dimensions of entrepreneurial self-efficacy (ESE) is a significant antecedent of EI i.e. entrepreneurial intention (Chen et al., 1998; Shinnar et al., 2014). The preceding logistic regression results also support hypothesis 2 that the higher the levels of EI, the higher the likelihood of reporting nascent behaviour i.e. beginning of actual practical steps in the process of business start-up (Kautonen et al., 2013). This section examines the mediating role of intention in the relationship between each of the dimensions of ESE and nascent behaviour. The results are based on contemporary procedures in regression-based statistical mediation analyses (Fritz and MacKinnon, 2007; Zhao et al., 2010).The choice of mediation analysis is based on Hypotheses 3 in the conceptual model suggesting that ESE influences EI which in turn is positively associated with nascent behaviour.

Table 5 shows the results of the Preacher and Hayes (2008) Sobel's Z test and the 5000 samples bootstrap test at 95% confidence level using the unstandardized path coefficients. The criteria are that if the Sobel's Z test is significant ($p<0.05$) or if the bootstrap confidence interval (CI) for the mediation path (a*b) excludes zero, then mediation is said to be statistically significant (Cardon et al., 2009; Khedhaouria et al., 2015; Swickert et al., 2012; Zhao et al., 2010).

Table 5 Mediation Results - Bootstrap 95% Confidence Intervals and Sobel Test

Model	Independent Variable (X)	Mediating Variable (M)	Dependent Variable (Y)	Effect of X on M (a)	Effect of M on Y (b)	Indirect effect of X on Y through M (ab)	95% Confidence Interval	Sobel Test (Z)
1	ESE Searching	Entrepreneurial Intention	Nascent Behaviour	0.4532**	0.5449**	0.247	0.1086 to 0.4560	3.1476**
2	ESE Planning	Entrepreneurial Intention	Nascent Behaviour	0.4741**	0.4995**	0.2368	0.0916 to 0.4450	2.9245**
3	ESE Marshalling	Entrepreneurial Intention	Nascent Behaviour	0.3909**	0.4860**	0.1899	0.0691 to 0.3727	2.8319**
4	ESE Implementing People	Entrepreneurial Intention	Nascent Behaviour	0.4472**	0.5308**	0.2372	0.0979 to 0.4508	3.0365**
5	ESE Implementing Finance	Entrepreneurial Intention	Nascent Behaviour	0.1929**	0.6575**	0.1268	0.0377 to 0.2461	2.7415**

Note: ** p< 0.01 * p< 0.05

Table 5 reports the results for individual indirect effects of ESE dimensions on nascent behaviour through entrepreneurial intention (EI) i.e. Searching (Model 1), Planning (Model 2), Marshalling (Model 3), Implementing People (Model 4) and Implementing Finance (Model 5). All the models show that the indirect effects of the five ESE dimensions on nascent behaviour, through their effects on EI, are positive and statistically significant: Searching (ab=0.2470, Confidence Interval 0.1086 to 0.4560, Z=3.1476, p=0.0016); Planning (ab=0.2368, Confidence Interval 0.0916 to 0.4450, Z=2.9245, p=0.0035); Marshalling (ab=0.1899, Confidence Interval 0.0691 to 0.3727, Z=2.8319, p=0.0046); Implementing People (ab=0.2372, Confidence Interval 0.0979 to 0.4508, Z=3.0365, p=0.0024); and, Implementing Finance (ab=0.1268, Confidence Interval 0.0377 to 0.2461, Z=2.7415, p=0.0061). The significant results for the normal-theory based Sobel's Z test (all $p<0.01$) are corroborated by the bias-corrected bootstrap 95% confidence intervals that entirely exclude zero in all the five models.

In relation to mediation, firstly, the results mean that two individuals who differ by 1 unit in their reported ability to develop a unique business idea and/or identification of a special business opportunity (ESE searching) are expected to differ by 0.2470 units (on a scale of 0 to 1) in the likelihood of reporting nascent behaviour. This is as a result of the tendency for those with high ESE searching ability to develop higher EI (a=0.4532, $p<0.01$) which in turn positively affects the likelihood of nascent behaviour (b=0.5449, $p<0.01$). Secondly, two individuals who differ by 1 unit in their reported confidence to convert business ideas into a feasible business plan (planning) are expected to differ by 0.2368 units (on a scale of 0 to 1) in the likelihood of reporting nascent behaviour. This is a consequence of the inclination for those with high ESE planning ability to develop higher EI (a=0.4741, $p<0.01$) which in turn positively affects nascent behaviour (b=0.4995, $p<0.01$).

Thirdly, two individuals who differ by 1 unit in their reported confidence to assemble resources to bring the venture into existence (marshalling) are expected to differ by 0.1899 units (on a scale of 0 to 1) in the likelihood of reporting nascent behaviour. This is because of the predisposition for those with high marshalling ability to develop higher EI (a=0.3909, $p<0.01$) which in turn positively correlates with nascent behaviour (b=0.4860, $p<0.01$). Fourth, two individuals who differ by 1 unit in their reported confidence in the people aspects of business start-up implementation (implementing –people) are expected to differ by 0.2372 units (on a scale of 0 to 1) in the likelihood of reporting nascent behaviour. This is as a result of the tendency for those with high ability in the people aspects of implementation to develop higher EI (a=0.4472, $p<0.01$) which in turn influences nascent behaviour (b=0.5308, $p<0.01$).

Lastly, two individuals who differ by 1 unit in their reported confidence in the finance aspects of business start-up implementation (implementing –finance) are expected to differ by 0.1268 units (on a scale of 0 to 1) in the likelihood of reporting nascent behaviour. This is a consequence of the inclination for those with high ability in the finance aspects of implementation to develop higher EI ($a=0.1929$, $p<0.01$) which in turn is positively associated with nascent behaviour ($b=0.6575$, $p<0.01$).

5.0 Discussion

The findings in this study have supported the proposed conceptual model hypothesising that each of the entrepreneurial self-efficacy (ESE) dimensions significantly influences entrepreneurial intention (EI) which in turn leads to nascent behaviour. These findings entail that individuals with high confidence to perform the tasks reflected in each of the dimensions of ESE (marshalling, searching, planning, as well as people and finance aspects of implementation) will also report higher EI (Table 3). Thus, hypothesis 1 suggesting that each of the ESE dimensions is positively associated with EI is fully supported. This conclusion is in line with the conceptual model (Figure 1) suggested in this study. This conclusion also resonates with findings in prior studies linking ESE and EI in Colombia (Campo, 2011) and USA (Kickul et al., 2009). While Kickul et al. (2009) found that all five dimensions were positively and significantly related to EI, Campo (2011) report that only marshalling (positive) and implementing people (negative) were statistically significant. Although Chen et al. (1998) in the USA had found a similar result based on a different set of dimensions of ESE (i.e. marketing, innovation, management, risk-taking and financial control), the current study is among the few studies to test McGee et al. (2009)'s refined dimensions of ESE on intentionality. It is also the first study to explore these dimensions in the Zambian context.

Hypotheses 2 suggested that EI is positively associated with nascent behaviour. This postulation has been supported by the data (Table 3 and Table 4). This conclusion is consistent with prior studies (Kautonen et al., 2013) in Austria and Finland, as well as Henley (2007) and Matlay (2008) in the United Kingdom, who establish that individuals with higher EI are more likely to eventually actually start their own businesses. However, the finding contradicts Souitaris et al. (2007) who report a non-significant link between intention and nascent behaviour.

In relation to Hypotheses 3 which indicates that EI mediates the influence of ESE dimensions on nascent behaviour, the results have confirmed the postulation (Table 5). This result is among the pioneers in testing the mediating role of intention on the relationships between the five ESE dimensions and nascent behaviour. This means that if entrepreneurship education programmes are designed and redesigned to specifically develop knowledge, skills and competencies in each of the five dimensions of ESE, this would lead to the promotion of entrepreneurship through the enhancement of EI and the resulting likelihood of nascent behaviour. Clearly, these findings entail that even in under-researched developing country contexts like Zambia, ESE is key to promoting entrepreneurship.

Contributions and Practical Implications

Motivated by the knowledge gaps in the literature, this study sought to explore and examine the mediating effect of entrepreneurial intention (EI) on the relationships between the five entrepreneurial self-efficacy (ESE) dimensions and nascent behaviour. Based on sample data from 294 final year university students in a public behaviour. Lastly, the study finds that the influence of each of the ESE dimensions on nascent behaviour is mediated by EI. university in Zambia, through correlation, logistic regression and mediation analyses, the study makes some conclusions. Firstly, the study established that each of the five ESE dimensions significantly correlates with EI. Secondly, the study shows that EI is positively related to nascent

The contribution to knowledge is threefold. Firstly, the study contributes to the scant literature on the ESE-Intention link (Campo, 2011; Kickul et al., 2009) by testing the effect of the five ESE dimensions proposed by McGee et al. (2009) on intentions. This means that apart from having an influence on attitudes to entrepreneurship and nascent behaviour as established by McGee et al. (2009), the dimensions are also determinants of EI. The implication is that if skills development initiatives and entrepreneurship education programmes are designed and redesigned to specifically develop knowledge, skills and competencies in each of the five ESE dimensions, more individuals will develop an intention to start-up a business. This would be one of the ways for promoting new venture creation in a society since EI correlates positively with actual start-up rates (Kelley et al., 2011).

Secondly, prior studies have found that the five ESE dimensions influence competitive behaviours of entrepreneurs in South Africa (Urban, 2012), entrepreneurs' innovative actions in Sweden (Osmonalieva, 2013) and firm performance in Indonesia (Herath and Mahmood, 2014). Extant literature neglects to explore the possible mediational role of EI in the link between ESE and nascent behaviour. This study contributes by suggesting that each of the five dimensions' influence on nascent behaviour is mediated by intention. This means that the five dimensions exert their influence on nascent behaviour directly and indirectly through intention. This further entails that despite the confidence an individual may have in his/her ability to perform the tasks of an entrepreneur, actual behaviour will not commence unless an intention is formed. The EI would then increase the likelihood of an individual initiating actual business start-up activities.

Thirdly, the paper explores EI of final year students in Zambia and therefore represents a valuable contribution to African entrepreneurship research. Besides a few studies on Africa such as in South Africa (Malebana and Swanepoel, 2014; Urban, 2006, 2012) and in Ethiopia (Gerba, 2012), extant literature reveals that research on EI, nascent behaviour and self-efficacy is mainly conducted in developed countries; developing

countries, especially Africa, and that includes Zambia, are under-researched (Fayolle and Liñán, 2014; Hoskisson et al., 2011; Liñán and Fayolle, 2015; Mwiya et al., 2017). This constrains generalisability of the prior research conclusions. By conducting this research in Zambia, a contextual contribution to knowledge has been made thus improving the external validity of prior research conclusions.

The implication of this study for policy makers and educators is that in order to promote graduates' involvement in starting up businesses, there is a need to focus on developing knowledge, skills and competencies in the five dimensions of entrepreneurial self-efficacy (ESE). These include: marshalling (ability to assemble resources and develop networks necessary for a start-up); the day to day management of people (implementing people); searching for/developing a new product/business idea; day to day management of finances (implementing finance); and, the ability to develop a feasible business plan (Planning). For educators, this would require not only relevant and state of the art content but also effective and practical pedagogical approaches. For example, once the theories are well understood by the learners, there is need to include learning by doing. This could entail embracing project-based learning, internships to solve real problems for fledgling MSMEs, guest entrepreneur lecturers, etc. Indeed the theories and practices of entrepreneurship should be interwoven in entrepreneurship education and its delivery (Zhao et al., 2005). Traditional lecture-based delivery is no longer adequate (Piperopoulos and Dimov, 2015; Souitaris et al., 2007). Equally, for enterprise support institutions, there is need to promote entrepreneurship based on mechanisms that develop ESE in aspiring and fledgling entrepreneurs.

This study had some limitations which form the basis for directions for future research. Since the study took place in only one public university in Zambia, increasing the sample base to cover the entire country would improve generalisability of conclusions. Secondly, this was a cross-sectional study, thus the results can only offer a snapshot of the phenomenon. Future research may consider a longitudinal study to explore how each of the ESE dimensions impacts the transition from intention to nascent behaviour and eventually to actual business start-up. It would probably also be insightful to follow up the nascent entrepreneurs as they progress from fledgling businesses to established businesses with a view to understanding how differences in ESE dimensions influence survival and growth of the new businesses. Lastly, while this study justifiably used three techniques to test the hypotheses i.e. correlation, logistic regression and bootstrap mediation analyses based on prior studies as examples (Cardon et al., 2009; Khedhaouria et al., 2015; Swickert et al., 2012), future studies could consider structural equation modelling to evaluate all the relationships at once.

The foregoing limitations notwithstanding, this study extends an emerging body of knowledge on the five ESE dimensions, which has not been fully investigated in terms of the influence of these dimensions on nascent behaviour and EI. The study offers new insights in a developing context with regards to the mediating role of EI in the relationships between ESE dimensions and nascent behaviour.

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