

Inculcating Entrepreneurial Thinking: The interplay between personality and Entrepreneurial education

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***Abstract-**This paper investigates the indirect effects of entrepreneurship education delivery modes (case studies, simulations and experiential activities) on the relationship between personality dimensions (Extraversion, Neuroticism, Agreeableness, Conscientiousness and openness to experience). At a 5% significance level, statistically significant and positive correlations were found between entrepreneurship thinking and three personality dimensions (Extraversion, Conscientiousness and openness to experience). On the other hand a statistically significant negative correlation between Neuroticism and Entrepreneurship Thinking was observed. Using IBM SPSS Amos, the paper presents a model to show the total, direct and indirect effects of entrepreneurship education delivery modes on the relationship between personality dimensions and entrepreneurial thinking. The model is recommended for further testing using Moderated Mediation procedures.*

Key Words: Entrepreneurial Thinking, Personality, Entrepreneurial Education, South Africa

1. Introduction

A large body of literature agrees that entrepreneurship is a tool to addressing the socio-economic ills facing many countries around the world, in both developed and developing countries (Herrington & Kew, 2013; Mamuzo, 2012:172; Nilson, 2012:40; Vazquez-Burgete, Lenaro, Raisiene and Garcia, 2012:28; Simrie, Herrington, Kew & Turton, 2011:4; Tobias & Ingram, 2010:2, Herington, Kew & Kew, 2009:14). Yet attempts to tap into the benefits of entrepreneurship to address the socio-economics problems, both from an

individual's perspective and national levels, has not yielded desirable outcomes; poverty, unemployment and inequality persist (Mokomane, Wright & Altman, 2014). Despite government support in terms of financial aid and infrastructure development, many (about 95%) of entrepreneurial ventures fail to survive beyond their fifth year of operations (Statistics South Africa, 2002). These failures should therefore, not be attributed to shortage of resources or support, but rather to the entrepreneurs' qualities. For examples, Musara and Fatoki (2011) reveal that there is no shortage of entrepreneurs, entrepreneurial finance or even a shortage of entrepreneurial opportunities in South Africa but rather, there is a lack of awareness of the available support systems and skills to develop entrepreneurial ventures successfully. The same sentiments resonates in Shane (2003:145) who argued that, "...the number of enterprising individuals and valuable opportunities is constant over time and place, with only distribution between productive and unproductive forms varying across these dimensions".

The lack of awareness and lack of skills could be attributed to lack of entrepreneurial thinking. Weber (2012) argued that while it is important to provide support services to potential entrepreneurs, a failure to develop an entrepreneurial mindset may lead to misallocation of resources, missed opportunities and therefore missed benefits in terms of employment and value creation. Consequently, this paper argues for a framework to develop entrepreneurial thinking among the youth through entrepreneurial education. The paper begins in the next section by demystifying the entrepreneurship myth that entrepreneurs are born, not made. This will be followed by a discussion of the entrepreneurial traits and personality dimensions. Adding to the entrepreneurial traits and personality, a discussion of entrepreneurial thinking as a philosophical construct will be presented. A framework to inculcate entrepreneurial thinking through entrepreneurial education will then be presented and recommended for adoption in entrepreneurship teaching and future Research . Lastly, conclusions drawn in this paper are presented

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1.1 The Myth: Entrepreneurs are Born, Not Made

Several decades of entrepreneurship research has attempted to distinguish between entrepreneurs and non-entrepreneurs as well as why other entrepreneurs become successful while others become unsuccessful (Korunka, Frank, Lueger, & Mugler, 2003). While authors such as Hannah (1984) as well as Shane (2010) argues that entrepreneurs are born not made, recent studies (Kuratko, 2003) in entrepreneurship and entrepreneurship education argues that certain aspects of entrepreneurship can be taught and the context determines who becomes a successful entrepreneur (Nielsen *et al.*, 2012; Krueger, 2007; Korunka *et al.*, 2003, Kuratko, 2003). For example Kuratko (2003, p. 11) noted that: ... *“it is becoming clear that entrepreneurship, or certain facets of it, can be taught... business educators and professionals have evolved beyond the myth that entrepreneurs are born, not made”*. Similarly Krueger (2007:123) refutes the arguments that entrepreneurs are born, not made when they say: *“...experts, including entrepreneurs, are definitely made, not born. There may be some innate hard wiring but expertise appears to be learned”*. It can therefore be argued in this paper that an appropriate personality coupled with acquired entrepreneurial skills, knowledge and ability (i.e entrepreneurial education) are paramount to entrepreneurial success. On that note, the following section addresses the theory of personality and its relations to entrepreneurship.

2. Personality Dimensions and Entrepreneurship

Studies into the relationship between entrepreneurship and personality traits have revealed that successful entrepreneurs possess certain personality characteristics such as high need for achievement, internal locus of control, high risk-taking propensity, creativity, passion, perseverance, good personal relationships (Korunka *et al.*, 2003), among others. While scholars agree that certain inborn personality traits make a successful entrepreneur, there is no consensus in entrepreneurship literature on what constitute a universal entrepreneurial personality. However, the study of personalities and their relations to entrepreneurship remains undeniably important. A widely cited theory of personality in psychology, organisational behaviour and many other social

sciences disciplines is the “Big Five Personality Model”. Contemporary adaptations of the model are based on the work of Norman (1963) who labelled personality dimensions as consisting of: (1) Extraversion, (2) Neuroticism, (3) Agreeableness, (4) Conscientiousness, and (5) openness to experience. These dimensions are commonly used in literature and are sometimes referred to as “Norman’s Big Five” or simply as the “Big Five.” Weber (2012) pointed out that an individual’s conviction to start a new business venture is to some extent a matter of personality structure, hence the relation between personality and entrepreneurial intention. Zhao, Seibert, and Lumpkin (2010) revealed association between four personality dimensions (extraversion, emotional stability, conscientiousness, and openness to experience) and entrepreneurial intentions as well as entrepreneurial performance. Of the five dimensions, only agreeableness, showed no association with entrepreneurial intentions and performance. Based on the ground breaking findings of Zhao *et al.* (2010), in the following subsections this paper argues for the Big Five personality dimensions and their relations to entrepreneurship in an attempt to consolidate an entrepreneurial personality.

2.1 Extraversion

Extraversion refers to the extent to which a person feels comfortable with relationships. People who score high on extraversion tend to be outgoing, talkative, assertive and interactive (Werner, 2014). Entrepreneurship requires a high level of energy and the ability to foster good relationships as well as social interaction with all the relevant stakeholders (Rwigema, Venter & Urban, 2008, Barrick, Mount & Gupta 2003,), such a prerequisite tallies well with extraversion personality. Furthermore, in Holland’s (1984) personality job fit model, extroverts were found to be enterprising individuals and that is entrepreneurial. Moreover, Zhao *et al.* (2010) noted that entrepreneurship is a more stimulating and exciting occupation and is therefore more appealing to extraverts. Furthermore, Shane (2003) noted that due to the fact that entrepreneurs identify opportunities that are not apparent to others, they are often confronted with the task of persuading others, including customers and employees, thus the ability to persuade others depends mainly on sociability, assertiveness, initiative and gregariousness which are all dimensions of extraversion. Moreover as explained in Shane (2003), extraversion enables an

entrepreneur to generate interest and support, thus increases the individual entrepreneurial success.

2.2 Emotional Stability (Neuroticism)

Emotional stability relates to how resilient a person is under stressful situations. People who score high on emotional stability tend to be calm, relaxed, controlled and confident (Werner, 2014). Emotional stability can be closely linked to entrepreneurial behaviours such as perseverance, tolerance of ambiguity, risk taking as well as self-efficacy; these concepts can be traced way back in the history of entrepreneurship with evidence in the works of Cantillon and Say in the 17th and 18th century (Rwigema *et al.*, 2008). People who are low in emotional stability may not succeed as entrepreneurs, mainly because entrepreneurship involves a lot of pressure, the need to make critical decisions under stressful situations as well as the ability to handle failure, learn from past mistakes and adapt. Hence emotional stability plays a very critical role in entrepreneurial success.

2.3 Agreeableness

Agreeableness refers to the extent to which a person complies with others. Agreeable persons are cooperative, good-natured trusting and warm (Werner, 2014). Entrepreneurs are seen as agents of change who disturbs the status quo or challenge conventional ways of doing things. Consequently, people who are highly agreeable are less likely to succeed as entrepreneurs (Zhao *et al.*, 2010). In support of this view, Barrick *et al.* (2003) argued that people who have a high level of agreeableness are most likely to have career interests in social occupations such as social work and teaching, rather than business, because those occupations provide frequent interpersonal interactions where they can work for the benefit of others. Hence the low association between agreeableness and entrepreneurial attention as reported in Zhao *et al.* (2010).

2.4 Conscientiousness

Conscientiousness refers to how reliable and meticulous a person is. Conscientious people are responsible, organised, and persistent and achievement oriented (Werner, 2014; Roberts, Chernyshenko, Stark, & Goldberg, 2005). Studies (Judge, Simon, Hurst & Kelley, 2014; Judge, Rodell, Klinger & Simon, 2013; Kreitner & Kinicki, 2001; Robbins, 2001) have shown that people who are conscientious achieve high levels of success across a broad spectrum of occupations. For entrepreneurship in particular, a high need for

achievement as well as motivation has a strong predictive value on entrepreneurial success (van Aardt, 2013; Rwigema *et al.*, 2008; Baum & Locke, 2004). This view is also supported in McClelland's (1961) who construed that individuals who scores high on conscientiousness get attracted to occupation that give them a high level of personal control over outcomes as well as direct and timely feedback, such conditions are more evident in entrepreneurship than any other occupation.

2.5 Openness to Experience

Openness to experience relates to the extent to which a person seeks new experiences. People who have a high openness to experience are imaginative, inquisitive, broad-minded and intellectual (Werner, 2014). Throughout the history of entrepreneurship, creativity and innovation dominates research on trying to conceptualise the entrepreneurship phenomenon. In fact, entrepreneurship has become synonymous to creativity and innovation, more specifically in hi-tech business ventures. Schumpeter (1947) who is regarded as the father of entrepreneurship as it is known today demonstrated a clear association between entrepreneurship and innovation. Thus entrepreneurship requires people who are imaginative, see opportunities where others will not dare and view the world from a broader perspective as a potential marketplace; hence openness to experience is a critical success factor in entrepreneurship.

3. Entrepreneurial Education

While research acknowledges that successful entrepreneurs are born with certain personality characteristics, Kurakto (2003) pointed out that certain elements of entrepreneurship can be effectively taught thus the need for entrepreneurial education. Though it is undisputable that personality characteristics predict entrepreneurial success, entrepreneurial education provide a platform for self-discovery and nurturing of the entrepreneurial spirit that is necessary to take the first step into the entrepreneurial journey. Despite widespread support in literature of the relationship between entrepreneurial education and entrepreneurial activity, there are concerns that the current state of entrepreneurial education is not sufficient in cultivation the breed of successful entrepreneurs (Mamuzo, 2012; Radipere, 2012; Rehman & Elahi, 2012). In this paper three approaches to entrepreneurial education, namely experiential activities, case studies and simulation activities are

analysed in relation to their potential in as far as inculcating entrepreneurial knowledge, skills, attitudes and abilities is concerned.

3.1 Experiential Activities

Experiential learning involve engaging students in activities that closely related to the practical application of the course material and then asking for their reflection on their experience (Cantor, 1995). Kolb and Kolb (2005) noted that learning spaces that combines experience with an opportunity for reflection are central to learning and are helpful to students in reshaping how they think, feel, perceive, and behave. Cantor (1995:5) strongly argued for experiential activities when they said experiential activities creates: *“a climate in which students can experience the body of knowledge and skills within a subject, in an active and collaborative manner, wherein they are challenged to master and learn, and where they also have an opportunity to gain those reasoning, decision making, cultural, social, and leadership skills so badly needed in today’s and tomorrow’s societies”*. In

entrepreneurship studies such activities include networking, business plan creation and dialogue with other entrepreneurs as well as potential funders or business partners. These activities emphasise on problem solving, discovery, inquiry as well as practical application of the course content thus giving students an opportunity to see the bigger picture and have a holistic understanding of the subject content.

The use of experiential activities in entrepreneurial education is well documented (Krueger, 2007; Corbett, 2005). For example Corbett (2005) explores the role of experiential activities within the process of opportunity recognition and exploration and revealed differential impacts of experiential activities on future entrepreneurial success. Similarly, Krueger (2007) revealed that experiential activities are important in entrepreneurial cognitive development and instils entrepreneurial beliefs among students. These entrepreneurial cognitive development and entrepreneurial beliefs, according to Krueger (2007) are paramount to entrepreneurial success. Furthermore, Pittaway and Cope (2007) provides a comprehensive model for new venture planning that incorporates critical aspects of experiential learning such as active experimentation, concrete experience, insightful questioning, reflective observation, assessment mechanisms as well as learning from previous experience. In further support of experiential learning, Pittaway and Cope

(2007) argued that entrepreneurship is an actioned oriented field of study, hence effective entrepreneurial learning takes place through experience and discovery.

The social dimensions of entrepreneurial learning (Hamilton, 2004; Rae, 2002) also provide strong support for experiential learning in entrepreneurial education. Entrepreneurships is deeply rooted in the social dynamics as well as interaction with the context (Rwigema *et al.*, 2008, Rae, 2002), consequently learning activities that link students to individuals or organisations that are relevant to their future occupations as well as providing interfaces for knowledge exchanges to take place are undoubtedly paramount in entrepreneurial learning. Furthermore, the view that learning takes place in context (Hines & Thorpe, 1995) is worth noting as a precursor to entrepreneurial education, thus entrepreneurial learning can effectively take place in the communities of practice; such is the case in experiential learning.

3.2 Case Studies

Prince and Felder (2006) clearly describes case studies as: *“...involve[ing] one or more challenges of various types, such as diagnosing technical problems and formulating solution strategies, making business management decisions taking into account technical, economic, and possibly social and psychological considerations, and confronting ethical dilemmas”*. Proponents of the case study method of teaching such Fasko (2003); Mayer (2002) as well as Lundeberg, Levin & Harrington (1999) provide strong theoretical arguments for the use of case studies in teaching. For example Mayer (2002) pointed out that the case study method of teaching is an effective method because it helps students solve problems that are more realistic within a given context. Similarly Lundenberg (1999) argued that case studies allow students the opportunities to analysis multiple situations using multiple perspectives. The value of case studies in entrepreneurial education is therefore untainted. A review of literature on the challenges facing entrepreneurs as well as reasons for failure over the history of entrepreneurship yield a similar set of factors (Rwigema *et al.*, 2008) therefore through relating to historical encounters and how entrepreneurs solved the challenges, students will be able to gain substantial knowledge on how to solve entrepreneurial problems through case study diagnosis and analysis.

The use of case studies in teaching entrepreneurship is widespread. A closer look at textbooks both prescribed and recommended for entrepreneurship in institution of higher learning reveals that almost all the textbooks in entrepreneurship include case studies and/or entrepreneur profiles to elaborate on theories as well as for assessment purposes. Oyugi (2014) further noted that case studies are amongst the most commonly used methods in teaching entrepreneurship in institutions of higher learning. Too often, case studies are used to inspire students, to expose students to the realities of entrepreneurship as well as challenge students' creativity and problem solving abilities in the face of entrepreneurial challenges. Blenker, Elmholdt, Frederiksen, Korsgaard & Wagner (2014) acknowledges that while case studies suffer from limited comparability and generalizability as well as severe biases of teacher-researcher conflation; they provide contextually relevant encounters that may be helpful to students' entrepreneurial development within their relevant contexts and challenges. Thus case studies in entrepreneurial education are paramount in creating entrepreneurial thinking.

3.3 Simulation Exercises

Similar to experiential activities, business simulation exercises are also used in entrepreneurial teaching and learning. While the traditional textbook and lecture methods are important in laying the foundation of entrepreneurship, Cadotte (2014) notes that business simulations provide students with the opportunity to ponder, test, reflect and adjust their knowledge. Students will be able to achieve high levels of critical thinking which are necessary for entrepreneurial success through repeated practice of their trade. Studies such as Ashley, Kibbe & Thornton (2014) revealed that business simulation exercises are critical in developing critical thinking among students hence the use of business simulation in entrepreneurial education teaching and learning is undoubtedly paramount as a predictor of entrepreneurial success.

4. Entrepreneurial Thinking

Entrepreneurships as a process involve a great deal of information processing and decision making. Consequently understanding the cognitive processes in entrepreneurship is paramount as a tool to identify the likely forces and predict the outcomes that are involved in entrepreneurial information processing and decision making. Entrepreneurship as a field of study has its own language and tools of analysis,

such language and tools of analysis requires a unique approach of thinking and cognition, herein termed entrepreneurial thinking, in order to decode, comprehend and enact the outcomes of information processing (Krueger, 2007). Thus understanding entrepreneurial cognition is paramount to the study of the entrepreneurship process as well as developing individuals with an entrepreneurial mindset who will become future entrepreneurs. Nielsen, Klyver, Evald & Torben, (2012:31) defined entrepreneurial cognition as "...the study of how the brain processes the impulses and information that the entrepreneur receives from the environment". Thus it is how the entrepreneur understands what they think is taking place in their environment and within themselves that predict their entrepreneurial success (Nielsen et al., 2012).

The entrepreneurship process begins with opportunity recognition and opportunity recognition requires an entrepreneur who has the ability to identify a gap in the market, evaluate the market gap and make decisions to exploit it. For example, a possibility of a new technical invention requires an entrepreneur who has a subjective ability to recognise the possible value addition of the invention in order for it to be brought to the market, such ability is entrepreneurial thinking. In the stage of opportunity exploitation, there is need to make drastic decision and changes fuelled by environmental changes and uncertainty, this requires an entrepreneur who is flexible and has an enate ability to adapt in order to survive, which is entrepreneurial thinking. Entrepreneurial thinking thus involves a philosophy that sees the world as a marketplace; visualize the future, challenging conventions and critical thinking in order to develop courses of action to see and exploit opportunities that present themselves. Therefore this paper proposes an Entrepreneurial Education Model to cultivate entrepreneurial thinking.

5. Methods

This study is an exploratory descriptive study and quantitative methods will be used to analyse the data. The participants in this study consist of third year Entrepreneurship students at Monash University, South Africa Campus. From this population, the study achieved a response rate of 86%.

Of particular interest in this study is to test for the moderated mediation effects of the hypothesised relationships. Firstly, following Baron and Kenny's (1986)'s as well as Preacher, Rucker and Hayes's (2007) proposal to test for the mediated moderation

effects, we will test for the effects of personality (P) on the decision to enrol for entrepreneurial education (EE). We will then show the interaction effects between personality and entrepreneurship education on entrepreneurial thinking (ET), and then we introduce the modes of delivery in entrepreneurial education (Case studies (C), Simulation exercises (S) and experiential activities (EA)) as mediators. The main aim is to probe the interaction effect of personality and EE on ET separately to clarify the nature of their key relationships. Secondly the moderated mediation effects will be tested. Moderated mediation models attempt to provide an explanation on how and when the given effects occur (Preacher *et al.*, 2007). In this study, we hypothesise that the strength of ET is dependent upon P and this interaction is contingent upon the mode of delivery in EE (C, S and EA). Thus the indirect conditional effect of P on ET is moderated by C, S and EA) thus:

$$f(\hat{\theta} / C, S, EA) = (\hat{a}_1 + \hat{a}_2 C)(\hat{b}_1 + \hat{b}_2 S)(\hat{c}_1 + \hat{c}_2 EA)$$

6. Results

Descriptive statistics

The means, standard deviations and correlations for all the variables under investigation are shown in Table 1. Of particular note in this study, statistically significant, moderate and positive correlations are observed between the use of case studies and entrepreneurial thinking ($r=.448$; $p<.001$), Extraversion personality and Entrepreneurial thinking ($r=.402$; $p<.001$) as well as between Conscientiousness personality and entrepreneurial thinking ($r=.386$; $p<.001$). A strong and statistically significant positive correlation is observed between Openness to Experience and Entrepreneurial thinking ($r=.635$; $p<.001$). Neuroticism and entrepreneurial thinking showed a negative but significant correlation ($r=-.406$; $p<.001$). Other covariates are as shown in Table 1.

Table 1: Descriptive Statistics and Correlations

	Mean	SD	1	2	3	4	5	6	7	8
1. EntreThinking	5.05	1.213								
2. ExpeActivities	6.88	.799	.007							
3. Simulations	5.54	.737	.096	.668**						
4. CaseStudies	5.63	.698	.448**	-.166*	-.078					
5. Extraversion	11.25	5.420	.402**	-.024	-.071	.291**				
6. Agreeableness	15.25	7.017	-.144	.129	-.156*	-.101	.251**			
7. Conscientiousness	13.19	8.251	.386**	-.245**	-.003	.187*	.158*	.364**		
8. Neuroticism	2.44	6.472	-.406**	.078	.288**	.171*	-.211**	-.459**	-.316**	
9. Openness	32.69	6.819	.635**	.128	-.054	.222**	.354**	.274**	.086	-.548**

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

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

Reliability of Scales

As shown in Table 2 three scales used in this study yielded reliability coefficients scores that are greater than 0.70, as a result the reliability of the scales can be assumed. The personality scale was developed from the Big five personality items found in a public domain source. All the other scales were self-generated.

The Structural Model

Structural Equation modelling was conducted using IBM SPSS Amos. The structural model is shown in

Fig 1. The model fit test showed that the model is significant ($R^2=0.549$, $p<0.001$). All the predictor variables except Simulations showed statistically significant effects on Entrepreneurial Thinking. Only Agreeableness and Neuroticism yield negative effects on Entrepreneurial Thinking. The regression weights on predictor variables on Entrepreneurial thinking are shown in Table 3.

Table 2 Reliability of Scales

Scale	No. of items	CronBach's Alpha
Personality Dimensions	46	.778
Modes of delivery	13	.736
Entrepreneurial Thinking	8	.925

Table 3: Regression Weights on Entrepreneurial thinking

	Hypothesis	Beta	S.E.	C.R.	P
EntreTh	<- CaseStudies	.413	.061	6.725	***
EntreTh	<- Simulations	.030	.051	.589	.556
EntreTh	<- ExpeActiviti es	.302	.048	6.272	***
EntreTh	<- Extraversion	.045	.007	6.097	***
EntreTh	<- Agreeablene ss	-.109	.006	17.315	***
EntreTh	<- Conscientiou sness	.065	.005	12.482	***
EntreTh	<- Neurotiscism	-.062	.008	7.464	***
EntreTh	<- Openness	.078	.007	10.754	***

To assess moderated mediation (Preacher et al., 2007), four conditions will be examined:

1. Significant effects of personality dimensions on Entrepreneurial Thinking;
2. Significant interactions between personality dimensions and the three modes of delivery (case studies, simulations and Experiential Activities) in predicting Entrepreneurial Thinking.

3. Significant effect of Entrepreneurial thinking on Entrepreneurial thinking
4. Different conditional indirect effect of personality dimensions on Entrepreneurial thinking, via delivery modes, across low and high levels of each of the moderating variables. The last condition, which is the essence of moderated mediation, establishes whether the strength of the mediation via delivery modes differs across the different levels of the moderator (Preacher et al., 2007).

However for the sake of brevity in this paper only the differences between the standardised Total Effects, Direct effects and Indirect Effects are presented in Table 4. As can be seen in Table 4, the indirect effects of all personality dimensions except for Neuroticism decreases (however remains positive) due to the moderating effects of delivery modes (Case Studies, Simulations and Experiential activities). The indirect effect of Neuroticism on Entrepreneurial Thinking via delivery modes is positive whereas the direct effect is negative. This can be interpreted to mean that entrepreneurship education increases entrepreneurial thinking among individuals with a Neuroticism personality. Based on these findings it can be confirmed that delivery modes moderate the relationship between personality dimensions and entrepreneurial thinking.

Fig 2 Structural Model

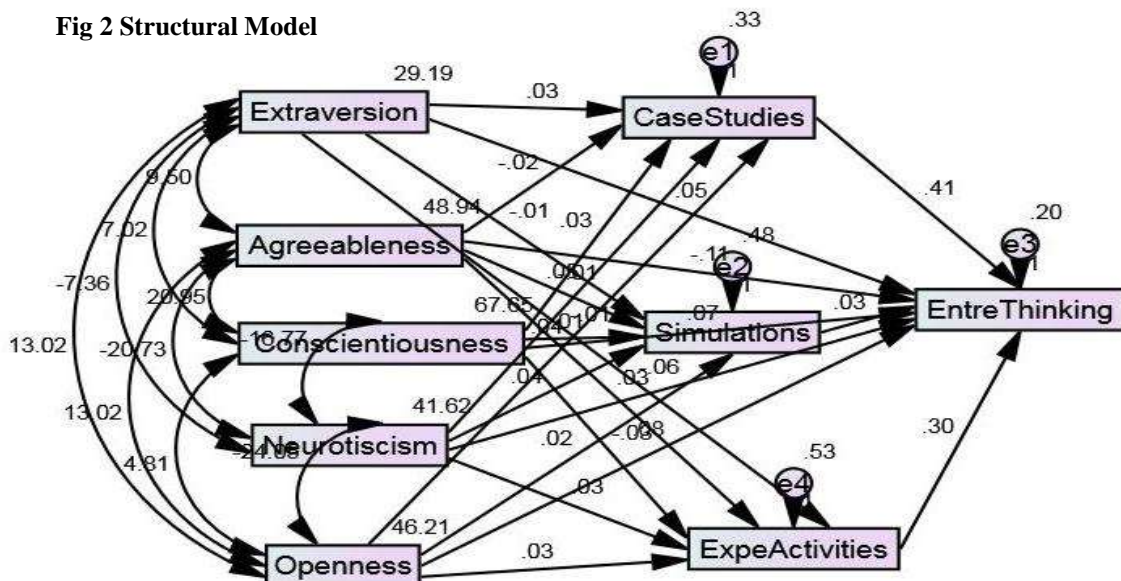


Table 4 Standardized Estimates

a) Standardized Total Effects								
	Openness	Neuroticism	Conscientiousness	Agreeableness	Extraversion	Experiences	Simulations	CaseStudies
Experiences	.227	.231	-.286	.299	-.086			
Simulations	.189	.395	.137	-.061	-.061			
CaseStudies	.417	.472	.327	-.176	.235			
EntreThinking	.583	-.166	.465	-.608	.238	.198	.018	.236

b) Standardized Direct Effects								
	Openness	Neuroticism	Conscientiousness	Agreeableness	Extraversion	Experiences	Simulations	CaseStudies
Experiences	.227	.231	-.286	.299	-.086			
Simulations	.189	.395	.137	-.061	-.061			
CaseStudies	.417	.472	.327	-.176	.235			
EntreThinking	.436	-.330	.442	-.624	.200	.198	.018	.236

b) Standardized Indirect Effects								
	Openness	Neuroticism	Conscientiousness	Agreeableness	Extraversion	Experiences	Simulations	CaseStudies
EntreThinking	.147	.164	.023	.016	.037			

7. Discussion and Conclusion

This paper considers the personality traits that are relevant to entrepreneurial success based on the traits approach to the study of entrepreneurship. Although innate personality traits are relevant to entrepreneurial intentions; the value of effective entrepreneurial education in enhancing entrepreneurial thinking to foster entrepreneurial success is untainted. Experiential exercises, case studies and simulation exercises were presented as effective tools in entrepreneurial education to cultivate entrepreneurial thinking. Consequently the paper presents a conceptual model that considers that personality traits as antecedents to entrepreneurial success, combined with entrepreneurial education will lead to entrepreneurial thinking. Entrepreneurial thinking mediated by increased self-efficacy increases entrepreneurial intentions and ultimately entrepreneurial activity. This study therefore proposes that personality traits are inborn and undeniably difficult to change through entrepreneurial education, hence to that extent agrees that entrepreneurs are born with certain personality characteristics that distinguish them from non-entrepreneurs. This is not to argue that entrepreneurship cannot be taught but rather to say entrepreneurial personality traits mediated with inculcated entrepreneurial thinking produces

successful entrepreneurs. This proposition is supported by the findings of this study. Similarly it is hypothesized that different teaching methods appeal differently to different personalities and as result they mediate the relationship between entrepreneurial education and entrepreneurial thinking. Consequently, the study proposes and recommends an entrepreneurial framework to inculcate entrepreneurial thinking among students. The framework considers personality traits and modes of delivery in entrepreneurial education as important ingredients to inculcate entrepreneurial thinking among students and proposes moderated mediation relationships between personality and entrepreneurial education; Entrepreneurial education and entrepreneurial thinking; entrepreneurial thinking and entrepreneurial intentions and ultimately entrepreneurial intentions and entrepreneurial activity. The proposed model in this paper requires further testing using the moderated mediation modelling procedures as proposed in Preacher et al. (2007).

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