

# PERSONALITY MODELS AND ENTREPRENEURSHIP: IMPLICATION FOR SUSTAINABLE DEVELOPMENT

## Anekwe, Sebastine Chukwudozie

Department of Political Science, NnamdiAzikiwe University, Awka ikeoraseb@yahoo.com

## **ABSTRACT**

Most documentation on entrepreneurship and its potency to the enhancement of sustainable development in the contemporary times have not given adequate consideration to the personality models that heighten desired entrepreneurship behaviour for the achievement of such development. Yet, personality models could be considered as defining factors to good entrepreneurship. This discourse therefore, addresses personality models and entrepreneurship as implication for sustainable development. Using the Big Five Personality Model, which describes essential traits that serves as the building block of personality, this discourse highlighted those models that could precipitate assuring entrepreneurship behaviour required for sustainable development. It argued strongly that for sustainable development to be achieved, credence must be given to these models believed to impact entrepreneurship to a greater extent. Thus, it recommended that above all traits, conscientiousness and openness to experience must be imbibed (though not silencing the slight influences of other traits whose possession in lower category also enhances entrepreneurship) for adequate entrepreneurship behaviour required for sustainable development.

Key Words: Personality Models, Entrepreneurship, Sustainable Development

### Introduction

World over, entrepreneurship is being encouraged because it offers a variety of consumer goods and services, and generally increases national prosperity and competitiveness (Zahra, 1999). The great interest in entrepreneurship is closely related to the fact of carrying importance for economic and social development. Growing entrepreneurial activities play a major role in mobilizing stagnant economies and contribute to the solution of the creation of new employment opportunities and of

employment problems (Jack & Anderson, 1999). Joseph Schumpeter (1943) highlights the enormous transformative potential of entrepreneurship thus:

... the function of entrepreneurs is to reform or revolutionize the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products, by reorganizing an industry and so on." (Schumpeter, 1943: 132)

Notwithstanding the great role of entrepreneurship in a nation's development, most documentation on entrepreneurship and its potency to the enhancement of sustainable development in the contemporary times have not given adequate consideration to the personality models that heighten desired entrepreneurship behaviour for the achievement of such development. Yet, personality models could be considered as defining factors to good entrepreneurship. This discourse therefore addresses personality models and entrepreneurship as implication for sustainable development.

## **Entrepreneurship**

Entrepreneurship may best refer to as the capacity and willingness to develop, organize, and manage a business venture along with any of its risks in order to make a profit. It may also refer to the entire range of business activity from self-employment all the way up-to multi-billion corporate actions (Ireland et al., 2009). It has been traditionally defined as the process of designing, launching and running a new business, which typically begins as a small business, such as a startup company, offering a product, process or service for sale or hire. Furthermore, entrepreneurship is the process by which an individual (or team) identifies a business opportunity and acquires and deploys the necessary resources required for its exploitation. The exploitation of entrepreneurial opportunities may include actions such as developing a business plan, hiring the human resources, acquiring financial and material resources, providing leadership, and being responsible for the venture's success or failure (Black, Burton, Wood, & Zimbelman, 2010). The people who create these businesses are called 'entrepreneurs' (Yetisen, Volpatti, Coskun, Cho, Kamrani, Butt, Khademhosseini, Yun, 2015).

An Entrepreneur, is a person who starts, organizes and manages any enterprise, especially a business, usually with considerable initiative and risk. Thus, rather than working as an employee, an entrepreneur runs a small business and assumes all the risk and reward of a given business venture, idea, or good or service offered for sale. Salleh and Gibbs (1990) further conceptualized an entrepreneur as someone who exhibits a distinctive set of enterprising attributes. According to these authors, these attributes embrace a number of skills, personality traits, acquire experiences and attitude. The enterprising attributes therefore, include creativity, initiative taking, analytical ability, high autonomy and achievement motivation.

Explicitly, the Entrepreneur is commonly seen as a business leader and innovator of new ideas and business processes (Zhang &Cueto, 2015). Entrepreneurs tend to be good at perceiving new business opportunities and they often exhibit positive biases in their perception (i.e., a bias towards finding new possibilities and seeing unmet market needs) and a pro-risk-taking attitude that makes them more likely to exploit the opportunity (Zhang &Cueto, 2015). Again, an entrepreneur is typically in control of a commercial undertaking, directing the factors of production – the human, financial and material resources – that are required to exploit a business opportunity. Entrepreneur act as the manager and oversee the launch and growth of an enterprise. According to Economist Joseph Schumpeter (1883–1950) the role of the entrepreneur in the economy is "creative destruction" – launching innovations that simultaneously destroy old industries while ushering in new industries and approaches. For Schumpeter, the changes and dynamic disequilibrium brought on by the innovating entrepreneur ... [are] the 'norm' of a healthy economy (Hisrich, 2011).

Entrepreneurial spirit is characterized by innovation and risk-taking (Riitta, Eric, & Henning, 2012). While entrepreneurship is often associated with new, small, for-profit start-ups, entrepreneurial behavior can be seen in small-, medium- and large-sized firms, new and established firms and in for-profit and not-for-profit organizations, including voluntary sector groups, charitable organizations and government (Hisrich, 2011). For example, in the 2000s, the field of social entrepreneurship has been identified in which entrepreneurs combine business activities with humanitarian, environmental or community goals. Thus, entrepreneurship typically operates within an entrepreneurship ecosystem which often includes government programs and services that promote entrepreneurship and support entrepreneurs and start-ups; nongovernmental organizations such as small business associations and organizations that offer advice and mentoring to entrepreneurs (e.g., through entrepreneurship centers or websites); small business advocacy organizations that lobby the government for increased support for entrepreneurship programs and more small business-friendly laws and regulations; entrepreneurship resources and facilities (e.g., business incubators and seed accelerators); entrepreneurship education and training programs offered by schools, colleges and universities; and financing (e.g., bank loans, venture capital financing, angel investing, and government and private foundation grants) (Clifford, 2016).

Accordingly, entrepreneurship of great instance constitutes a vital engine for economic, social, practical and all round development of any country. Entrepreneurship has been identified by many both globally and nationally as a tool for a sustainable, virile and stable economy. Thus, the experiences of developed economies in relation to the roles played by entrepreneurship buttresses the fact that the importance of entrepreneurship cannot be overemphasized especially among the developing countries in African. In order to highlight its significance in relation to the growth and development of a given economy, entrepreneurship has been variously referred to as a "source of employment generation". This is because entrepreneurial activities have been found to be capable of making positive impacts on the economy of a nation and the quality of life of the people (Adejumo, 2000). Studies have established its positive relationship with stimulation of

economic growth; employment generation; and empowerment of the disadvantaged segment of the population, which include women and the poor (Oluremi and Gbenga, 2011; Mueller and Thomas, 2000; Reynolds, 1987).

# Personality

Personality has been defined as enduring personal characteristics that are revealed in a particular pattern of behaviour in a variety of situation. Thus, a durable disposition to behave in a particular way in a variety of situations such as honest dependable, moody, impulsive, extravagant, domineering, friendly, conscientiousness, agreeable, anxious, excitable etc. describe dispositions that represent personality traits (Weiten, 2007). As a multidimensional concept, personality has been defined as individual attributes involving patterns that influence behavior, thought, motivation, and emotion in a human being.

In this line of thought, Personality may further be described as a vigorous and organized set of characteristics possessed by a person that uniquely influences his/her environment, cognitions, emotions, motivations, and other aspects of behaviour in various situations. In the description of Engler, (2009), personality describes the pattern of thoughts, feelings, social adjustments, and behaviors consistently exhibited over time that strongly influences one's expectations, self-perceptions, values, and attitudes. Hannah, and Akmal, (2016) further explained that personality encompasses all of the thoughts, behavior patterns, and social attitudes that impact how humans view themselves and what they believe about others and the world around them.

Literature reveals that personality has been conceptualized from a variety of perspectives, involving various levels of breadth (John, Hampson, & Goldberg, 1991; McAdams, 1995), each of which has made unique contributions to the understanding of individual differences in behavior and experience (personality). This includes Eysenck's (1987) assumption, which states that just three traits are enough to explain personality: neuroticism, extraversion, and psychoticism. Another is Harkness and McNulty's five factors of positive emotionality / extraversion, aggressiveness, constraint, negative emotionality / neuroticism, and psychoticism (Harkness, McNulty, & Ben-Porath, 1995). The next isTellegen's(1982) three dimensions of negative affectivity, positive affectivity, and constraint and finally the Five Factor Model (Big Five) dimensions of neuroticism, extraversion, openness, conscientiousness, and agreeableness (Costa & McCrae, 1990), which is of great importance in the present discourse.

# **Theoretical Explications**

The theoretical foundation of this paper is based on the psychological theories of the "Refugee and Schumpeter effects". These theories posit that the ability to make good judgment about the future leads an individual to become a successful entrepreneur. The need for achievement psychological approach of McClelland was particularly dominant in driving people for entrepreneurship. According to McClelland (1987), Arch motives seem to influence the individual to select entrepreneurial career. He opines that "the presumed mechanism by which achievement level translate itself into economic growth is the entrepreneurial class. Thus, if the need for achievement is high, there will be more people who behave like entrepreneurs" (Islam, 1989, Raimi, 2010). The second theory is Richard Cantillon and John Stuart Mill's psychological theory of entrepreneurship,

otherwise called risk taking theory (RTT). The theory considers entrepreneurship as a mentality to take chance or calculated risk, because people taking a very big risk also have a great responsibility (Alam & Hossan, 2003, Sexton & Bowntown, 1983). These attributes are grossly linked to the two personality attributes (conscientiousness and openness to experience) clamored for in this discourse as having more positive impact on entrepreneurial prowess, involvements and achievements. Imbibing otherwise is a sure path to acquiring entrepreneurial skills necessary for sustainable development.

## **Entrepreneurship and Big Five Personality Attributes**

The most comprehensive and precise description of personality is the Big Five factors model (Holt, Rutherford & Clohessy, 2007; McCrae, 2011; Roccas, Sagiv, Schwartz, &Knafo, 2002). This model defines personality in five broad factors: extraversion, agreeableness, openness to experience, conscientiousness and neuroticism (Costa & McCrae, 1992). To a great extent, these factors describe behaviours that tend to demonstrate entrepreneurial competence hence they are deemed appropriate for business research (Holt et al., 2007; Obschonka, Silbereisen, & Schmitt-Rodermund, 2015; Obschonka, Silbereisen, & Schmitt-Rodermund, 2012; Rauch &Frese, 2007; Zheng, Yang &Feng, 2010). A general description of entrepreneurial personality based on this model shows that entrepreneurs tend to be endowed with conscientiousness, extraversion, openness and low on neuroticism and agreeableness (Lounsbury, Smith, Levy, Leong, & Gibson, 2009). Details are shown thus:

## **Agreeableness**

This personality factor includes attributes such as trust, altruism, kindness, affection and other pro-social behaviours, all of which are greatly concerned with interpersonal behavior and attitude (Lee, Johnston, & Dougherty, 2000; Zhao, Seibert & Lumpkin, 2010). People who are high in agreeableness tend to be more cooperative while those low in this trait tend to be more competitive and even manipulative. Research has however associated high level of agreeableness with inability to succeed in business situations (Patel & Thatcher, 2014; Schröder, Schmitt-Rodermund& Arnaud, 2011; Shane & Nicolaou, 2013). Accordingly, low self-interest, low achievement orientation and low competitiveness has been attributed to the entrepreneurial incompetence of agreeable individuals (Roccas et al., 2002) and possibilities of conflicts in business (Zhao et al., 2010). Having being identified with altruistic tendencies, agreeable individuals tend to be incapable of negotiating challenging deals and influencing others (Schröder et al., 2011) to attain business goals. Nevertheless, agreeable entrepreneurs can command respect, trust and cooperation (Cogliser, Gardner, Gavin, & Broberg, 2012).

### Extraversion

This trait is characterized by excitability, sociability, 'talkability', assertiveness, and high amounts of emotional expressiveness. People who are high in extraversion are outgoing and tend to gain energy in social situations. People who are low in extraversion (or introverted) tend to be more reserved and have to expend energy in social settings. Extraversion has been reported to be a good predictor of success among occupations requiring social interactions (Barrick& Mount, 1991). This is

because entrepreneurs need to spend more time interacting with different stakeholders (Shane &Nicolaou, 2013). The entrepreneurial role is predominantlyalluring to extraverts because it requires domination, adventure, pleasure-seeking, ambitiousness, impulsiveness and self-confidence (Holland, 1997). Therefore, extraversion is related to both entrepreneurial intentions and success (Fine, Meng, Feldman &Nevo, 2012; Wang, Chang, Yao, & Liang, 2015; Zarafshani&Rajabi, 2011).

Again, extraversion is also related to risk taking behavior, which increases entrepreneurial optimism (Nicholson, Soane, Fenton-O'Creevy, &Willman, 2005) and self-efficacy (Hartman & Betz, 2007; Rauch &Frese, 2007; Wang et al., 2015), which may enhance entrepreneurial intentions and success on one hand. On the other hand, entrepreneurial success which has to do with the ability to succeed in business leadership roles can be booted by extraversion (Chan, Uy, Chernyshenko, Ho, & Sam, 2015; Cogliser et al., 2012; Hartman & Betz, 2007). Thus Business leadership requires entrepreneurs to be active, good communicators, upbeat, negotiators, marketers and network builders.

#### Neuroticism

This trait is characterized by sadness, moodiness, and emotional instability. It also refers to a tendency towards emotional instability involving experiencing fear, sadness, anger and hostility (Barrick& Mount, 1991; Holt et al., 2007; Reed, Bruch & Haase, 2004; Zhao et al., 2010). Individuals who are high in this trait tend to experience mood swings, anxiety, moodiness, irritability and sadness. Those low in this trait tend to be more stable and emotionally resilient. These attributes enlisted neuroticism as one of those traits that can be labeled as a 'dark' personality trait. As such, behavioral tendencies of neurotic individuals such as being sensitive to negative feedback, distress from small failures and anxious responses to difficult situations (Barrick& Mount, 1991; Reed et al., 2004; Zhao et al., 2010) are indicative of a negative relationship between neuroticism and entrepreneurial success (Shane & Nicolaou, 2013; Zhao et al., 2010). Neuroticism also tends to reduce risk-taking propensity (Sinha&Srivastava, 2013), thus reducing the likelihood of persisting in entrepreneurial roles (Patel and Thatcher, 2014). Moreover, neurotic individuals are likely to have lesser social capital arising from their lack of the social competence (Barrick, 2005; Cogliser et al., 2012; Patel & Thatcher, 2014). This makes them less successful in entrepreneurial activities that require social skills. However, no research has been carried out to establish whether deficiencies of neuroticism result into poor management of business startup resources and lead to entrepreneurial failure.

# **Openness to experience**

This trait features characteristics such as imagination and insight. This also encompasses purposeful seeking and appreciation of new experience (Reed et al., 2004). Individuals endowed with openness to experience tend to be open-minded and tolerate a range of values (Lee et al., 2000; Reed et al., 2004; Roccas et al., 2002; Zhao et al., 2010). They also tend to be more adventurous and creative; while the opposite of this create a platform which is often much more traditional, leading to big time struggle with abstract thinking.

The openness to experience personality attributes indeed can help entrepreneurs to appreciate customer needs and learn to deal with competition and market trends. Openness to experience is associated with self-direction and stimulation values (Gorgievski, Ascalon& Stephan, 2011) and intellectual curiosity (Zhao et al., 2010), which are necessary for entry, persistence as well as succeeding in entrepreneurial roles. However, individuals scoring high on openness tend to be unconventional entrepreneurs (Holt et al., 2007). They are more likely to question existing ways of doing business, which, in addition to their intellectual capacity, results into identification of new opportunities. This may justify the correlation that research has found to exist between openness to experience and financial success (Shane &Nicolaou, 2013b).

### Conscientiousness

The standard features of this trait include high levels of thoughtfulness, with good impulse control and goal oriented behaviours. It also suggests the disposition to follow rules and exert effort to achieve goals (Barrick, 2005; Reed et al., 2004). This definition summarizes several positive attributes including personal competence, achievement-striving, self-discipline, confidence, and dependability (Costa & McCrae, 1992; Holt et al., 2007; Mount, Barrick, Scullen, & Rounds, 2005; Roccas et al., 2002; Watson & Newby, 2005). However, individual that are high on conscientiousness tend to be organized and mindful of details.

Explicitly, these attributes (i.e. conscientiousness trait) can foster achievement values or conformity values (Roccas et al., 2002). The former is more relevant for entrepreneurial roles, given that the need for achievement tends to increase entrepreneurial competence and performance. Conscientious individuals have leadership abilities (Cogliser et al., 2012); therefore, they are capable of managing businesses. Conscientiousness is also related to high level of psychological capital (Luthans, Avolio, Avey& Norman, 2007). This form of capital can increase an entrepreneur's effort and persistence towards achieving business goals.

## **Entrepreneurship, Big Five Personality Traits and Sustainable Development**

Creativity and innovativeness (all of which are attributes of personality) have become the benchmark and critical driver of sustainable human development and prosperity especially in the 21<sup>st</sup> century knowledge-based economy on one hand (Baker &Nelson, 2005). On the other hand, the entrepreneurial skill development remains the fulcrum upon which sustainable economic and social progress revolves (Ebiringa, 2012). This has been overly described as a driver of economic growth and poverty reduction, especially in developing countries (Osuagwu 2006; Anyadike*et al*, 2012; Adejumo, 2001; Fatoki, 2011).

However, much of the research in entrepreneurship has been founded upon the premise that entrepreneurs embody distinctive personality which can be identified and used to indicate potential for entrepreneurship (Barcelona &Valida, 1994). Specifically, a number of psychological attributes have been suggested as predictors of entrepreneurial behavior, with some degree of concurrence. Lumpkin and Erdogan (2004) looked at the needs of achievement, affiliation and power in entrepreneurs

versus others. Kantor (1988) is of the view that propensity towards entrepreneurship is associated with several personal characteristics such as values and attitudes, personal goals, creativity, risk-taking propensity and locus of control. Of the personality traits, Ebiringa (2011b) proposed achievement motivation, risk taking and locus of control as important characteristics.

Among these characteristics, risk assessment and risk taking are considered the primary elements of entrepreneurship. Need for achievement, tolerance for ambiguity, risk taking and locus of control were analyzed with respect to entrepreneurial characteristics and were identified as correlates of being or desiring to be an entrepreneur (Olson, 2004). However, Scale of Big Five personality traits are treated as the most stable scale to measure personality trait. "openness to experience", "extraversion" and "conscientiousness" of Big Five personality traits significantly and positively influences entrepreneurship; "Agreeableness", and "neuroticism" significantly and negatively influences entrepreneurship (Pushkar & Subha, 2012). This follows that for a successful entrepreneurial prowess (already established as a major tool on which development can be fostered and sustained), the developing countries such as Nigeria should strive to inculcate in her citizenry (in all means and forms) the personality attributes of conscientiousness and openness to experience, alongside the positive attributes of extraversion. This will enable them to engage in ground-breaking entrepreneurial involvements and exhibitions necessary for the achievement of the sustainable development goals.

## **Conclusion and Recommendations**

At a time like this when every nation especially the developing ones are clamouring for adequate development, with a major aim of creating an environment in which all can expand their capabilities, and opportunities can be enlarged for both present and future generations, there is need for tools that can sustain this development. Without sustained and continuous economic progress at the individual as well as societal level, the realization of human potential would be a mirage. In other words, without determining the factors that aid the move towards development, achieving sustainable development goal may be unattainable.

However, the collapse of some of gadget speculated to aid development has indeed provoked all fingers to start pointing towards entrepreneurial prowess. Despite, entrepreneurship in itself may hardly be harnessed if proper factors (such as personality dimensions or attributes) necessary for its success are not properly placed. This paper thus concludes that for sustainable development to be achieved, credence must be given to these factors believed to impact entrepreneurship to a greater extent. It therefore recommends that above all traits, conscientiousness and openness to experience must be imbibed (though not silencing the slight influences of other traits whose possession in lower category also enhances entrepreneurship) for adequate entrepreneurship behaviour required for sustainable development.

### References

- Barrick, M.R. (2005). 'Yes, Personality Matters: Moving on to More Important Matters. *Hum. Perform.* 18(4), 359-372.
- Barrick, M.R. & Mount, M.K. (1991). The Big Five Personality Dimensions and Job Performance: A Meta-Analysis. *Pers. Psychol.* 44(1), 1-26.
- Black, E. L., Burton, F. G., Wood, D. A., & Zimbelman, A. F. (2010). 'Entrepreneurial Success: Differing Perceptions of Entrepreneurs and Venture Capitalists'. *The International Journal of Entrepreneurship and Innovation*,11 (3), 189–198.
- Clifford, C. (2016). Why everyone will have to become an Entrepreneur. www. *Entrepreneur.com*.
- Cogliser, C.C., Gardner, W.L., Gavin, M.B. & Broberg, J.C. (2012). 'Big Five Personality Factors and Leader Emergence in Virtual Teams Relationships with Team Trustworthiness, Member Performance Contributions, and Team Performance'. *Group Organ. Manage.* 37(6), 752-784.
- Chan, K.Y., Uy, M.A., Chernyshenko, O.S., Ho, M.H.R. & Sam, Y.L. (2015). 'Personality and Entrepreneurial, Professional and Leadership Motivations. *Pers. Individ. Diff.* 77,161-166.
- Costa, P. T., Jr., & McCrae, R. R. (1990). Personality Disorders and the Five-Factor Model of personality. *Journal of Personality Disorders*, 4, 362–371
- Costa, P.T. & McCrae, R.R. (1992). 'Four Ways Five Factors are Basic'. *Pers. Individ. Diff.* 13(6), 653-665.
- Eysenck, H. J. (1987). 'The Definition of Personality Disorders and the Criteria Appropriate for their Description'. *Journal of Personality Disorders*, 1, 211–219.
- Fine, S., Meng, H., Feldman, G. & Nevo, B. (2012). 'Psychological Predictors of Successful Entrepreneurship in China: An Empirical Study'. *Int. J. Manage.* 29, 279-292.
- Gorgievski, M.J., Ascalon, M.E. & Stephan, U. (2011). 'Small Business Owners' Success Criteria, a Values Approach to Personal Differences'. *J. Small Bus. Manage*. 49(2), 207-232.
- Harkness, A. R., McNulty, J. L., & Ben-Porath, Y. S. (1995). 'The Personality Psychopathology Five (PSY–5): Constructs and MMPI–2 Scales'. *Psychological Assessment*, 7, 104–114.
- Hartman, R.O. & Betz, N.E. (2007). The Five-Factor Model and Career Self-Efficacy General and Domain-Specific Relationships'. *J. Career Assess.* 15(2), 145-161.
- Hisrich, R. D. (2011). *Entrepreneurship*. McGraw-Hill Education. ISBN 978-0-07062-017-9.
- Holland, J. L. (1997). 'Making Vocational Choices: A Theory of Vocational Personalities and Work Environments'. Odessa, FL: *Psychological Assessment Resources*
- Holt, D.T., Rutherford, M.W., & Clohessy, G.R. (2007). 'Corporate entrepreneurship: An empirical look at individual characteristics, context, and process'. *J. Leadership. Organ. Stud.*, 13 (4); 40-54.
- John, O. P., Hampson, S. E., & Goldberg, L. R. (1991). 'Is there a basic level of personality description?' *Journal of Personality and Social Psychology*, 60, 348-361.

- Lee, F.K., Johnston, J.A. & Dougherty, T.W. (2000). Using the five-factor model of personality to enhance career development and organizational functioning in the workplace. J. Career Assess. 8(4), 419-427.
- Lounsbury, J.W., Smith, R.M., Levy, J.J., Leong, F.T. & Gibson, L.W. (2009). Personality characteristics of business majors as defined by the big five and narrow personality traits'. *J. Educ. Bus.* 84(4), 200-205.
- Luthans, F., Avolio, B.J., Avey, J.B. & Norman, S.M. (2007). 'Positive psychological capital: Measurement and relationship with performance and satisfaction'. *Pers. Psychol.* 60(3), 541-572
- McAdams, D. P. (1995). What do we know when we know a person? *Journal of Personality*, 63, 365-396.
- McCrae RR (2011). Personality theories for the 21st century. *Teach. Psychol.* 38(3), 209-214.
- Mount, M.K., Barrick, M.R., Scullen, S.M.&Rounds, J. (2005). 'Higher-order dimensions of the big five personality traits and the big six vocational interest types'. *Personnel Psychol.* 58(2), 447-478.
- Nicholson, N.Soane, E., Fenton-O'Creevy, M. & Willman, P. (2005). 'Personality and domain-specific risk taking'. *J. Risk Res.* 8(2), 157-176.
- Obschonka, M., Silbereisen, R.K., & Schmitt-Rodermund, E. (2012). Explaining entrepreneurial behavior: Dispositional personality traits, growth of personal entrepreneurial resources, and business idea generation. *Career Dev. Q.* 60(2), 178-190.
- Obschonka M, Silbereisen R.K., Schmitt-Rodermund E (2015). Successful entrepreneurship as developmental outcome'. *European Psychologist.*
- Patel, P.C. & Thatcher, S.M. (2014). Sticking it out individual attributes and persistence in self-employment'. *J. Manage.* 40(7), 1932-1979.
- Rauch, A. & Frese, M. (2007). Let's put the person back into entrepreneurship research: A meta-analysis on the relationship between business owners' personality traits, business creation, and success. *Eur. J. Work Organ. Psychol.* 16(4), 353-385.
- Reed, M.B., Bruch, M.A., & Haase, R.F. (2004). Five-factor model of personality and career exploration. *J. Career Assess.* 12(3), 223-238.
- Riitta, K., Eric, L. C. & Henning, P. (2012). All the right moves: How entrepreneurial firms compete effectively. *Strategic Entrepreneurship Jnl.*,6 (2), 116–132.
- Roccas, S., Sagiv, L., Schwartz, S.H., &Knafo, A. (2002). The big five personality factors and personal values'. *Pers. Soc. Psychol. Bull.* 28(6), 789-801.
- Schröder, E., Schmitt-Rodermund, E. & Arnaud, N. (2011). 'Career choice intentions of adolescents with a family business background'. *Fam. Bus. Rev.* 24(4), 305-321.
- Shane, S. & Nicolaou, N. (2013). The genetics of entrepreneurial performance. *Int. Small Bus.J.*
- Sinha, N. & Srivastava, K.B. (2013). Association of personality, work values and sociocultural factors with intrapreneurial orientation'. *J. Entrep.* 22(1), 97-113.
- Tellegen, A. (1982). 'Brief manual for the Differential Personality Questionnaire'. Unpublished manuscript, University of Minnesota.
- Wang, J.H., Chang, C.C., Yao, S.N. & Liang, C. (2015). The contribution of self-efficacy to the relationship between personality traits and entrepreneurial intention. *Higher Educ.* pp. 1-16

- Watson, J. & Newby, R. (2005). 'Biological sex, stereotypical sex-roles, and sme owner characteristics'. *Int. J. Entrep. Behav. Res.* 11(2), 129-143.
- Weiten, W. (2007). *Psychology: Themes and variations* 7<sup>th</sup>(ed) University of Nevada, Las Vegas.
- Yetisen, A.K., Volpatti, A.F., Coskun, S., Cho, E., Kamrani, H., Butt, A. & Khademhosseini, S.H. Y. (2015). Entrepreneurship. *Lab Chip.*15 (18), 3638–60.
- Zarafshani, K. & Rajabi, S. (2011). Effects of personality traits on entrepreneurial intentions: An empirical study in Iran. *Int. J. Manage.* 28(3), 630-641.
- Zhang S.X. & Cueto, J. (2015). The Study of Bias in Entrepreneurship. Entrepreneurship Theory and Practice, 41 (3)
- Zhao, H., Seibert, S.E. & Lumpkin, G.T. (2010). The Relationship of Personality to Entrepreneurial Intentions and Performance: A Meta-Analytic Review. *J. Manage.* 36(2), 381-404.
- Zheng, J., Yang, J. & Feng, H. (2010). Personality Trait Structure of Shanxi Business-Tycoons in the Chineseming and Qing Dynasties. *Int. J. Psychol. Stud.* 2(2), 117-126.