

CONCEPT OF ENTREPRENEURSHIP ANTI-IDEOLOGY

Ekaterina Y. Litau

Saint Petersburg National Research University of Information Technologies, Mechanics and Optics (ITMO University) 49, Kronverkskiy pr., St. Petersburg, 197101, Russian Federation

E-mails: ekaterina-litau@yahoo.com

Received 18 June 2019; accepted 10 October 2019; published 15 December 2019

Abstract. This paper presents the approach to the understanding of the entrepreneurship phenomenon. With this approach, it is possible to identify this social activity as essentially distinct from those that are seemingly similar but distinct in content. Having reviewed the relevant literature of this area of study with a critical eye, the author has identified systemic errors in the traditional understanding of entrepreneurship (first-order and second-order errors). Developing this approach, the author has introduced the concept of anti-ideology, which mirrors a nature of innovating as a process of creative destruction. This statement assumes that true entrepreneurship exists within the idea/anti-idea framework. The author has identified mandatory and sufficient attributes of entrepreneurial innovation. Based on the applied methodology, the author has proposed a model of progressive materialization for the anti-idea (Progressive Materialization of Anti-idea, PMAi). It helps to measure entrepreneurship in terms of its innovating component.

Keywords: entrepreneurial creativity; model of progressive materialization of entrepreneurship anti-idea (PMAi); innovations; entrepreneurship attributes

Reference to this paper should be made as follows: Litau, Y.E. 2019. Concept of entrepreneurship anti-ideology. *Enterpreunership and Sustainability Issues*, 7(2), 1308-1318. <u>http://doi.org/10.9770/jesi.2019.7.2(35)</u>

JEL Classifications: O32, L26, F63

1. Introduction

Entrepreneurship is getting more and more crucial in the economy. In today's world, the entrepreneurial mind-set has acquired structure within the framework of social relations. The recent growing interest in this phenomenon is owed to the unprecedented pace of technological advancements and rapid economical development. This growth has provided incentives to the wider consumption of goods, provoking market participants to produce products and services that are fiercely competitive and advantageous to consumers. Globalization essentially exacerbates this trend, as the division of labour leads to the diversification of production facilities. Together this has created a demand for the personality of the entrepreneur who, active in business, has an innovate and singular way of thinking as a distinctive feature. It is this phenomenon on which people lay their hopes when they solve the issue of creating new market opportunities in the world of excessive surplus. The mentioned issue predefines the chosen object of research.

Now at this point, it is important to specify the scope of economic relations which innovation creates, i.e., the sphere of entrepreneurship that results in commercially introducing goods previously unavailable in the mass market. Therefore, this area of research identifies those specific features that are inherent in the innovating entrepreneur, and making it possible for him/her to develop as an entrepreneurial genius. This leads to a need in completing a number of individual academic objectives, including highlighting certain attributes of such innovation, specifying the relationship between personal creativity and entrepreneurship. It is extremely difficult to find solutions to the mentioned problems. Among the reasons for that is the distorted idea of the entrepreneurship nature in terms of its true creative meaning.

2. Literature review

Researchers pay close attention to the entrepreneurship phenomenon. Such categories, as self-employment, small business, family business, start-ups, innovation-based and social entrepreneurship are equal activities in various sources. In nature, each of the mentioned economic activities has a distinct agenda and their merger often leads to the erroneous understanding of this phenomenon. For instance, in the paper on 'Entrepreneurship in Terms of Uncertainty', Sotnikova, Skvortsova and Lebedeva (2015) refer entrepreneurship to the activity of companies in general, excluding their specifics, size, etc. At the same time, in the paper on 'Support to Entrepreneurs' in Russia, Barinova, Zemtsov, & Tsareva (2018) apply the same concept to small businesses.

There is the similar terminology-related confusion in many papers on the features that describe business entities to one degree or another: ethnic (Ryazantsev, 2000), gender (Yudina, 2013; Gallyamov, 2016), age-specific (Semenova, 2018), etc.

When exploring the entrepreneurial success, Acharya, Rajan, & Schoar (2004) review small firms involved in agriculture. Proceeding from the self-employment criteria for survey participants, van der Loos *et al* (2013) explore the effects that testosterone has on entrepreneurial behaviour, Brandstätter (2011) reviews business owners in the research of personality aspects in entrepreneurship. Matthew and Williams (2014) (in their assessments of entrepreneurs' decision-making opportunities) examined the participants, who had said that business had been their primary source of income.

Confusion arises from mistaking entrepreneurship with other types of economic activity. The most common error (*first-order error*) is the perception of entrepreneurship as a business making process. This means that people think that consider one an entrepreneur (business person, manager, investor; intermediary business owner) if his/her activities focus on economic benefits regardless of target figures and the nature of their business.

As we have mentioned above, the nature of these two types of activities (innovative-production and private business) is not the same, although people often refer them to the same concept of entrepreneurship. Their differences explain behavioural motives and a content-related side of business. Researchers distinguish the following main personality traits that are necessary for implementation of small business projects: independence, a risk taker, the ability to take responsibility for performance, higher work capacity (Soininen, Puumalainen, Sjogren, & Syrja, 2015; Begley & Boyd, 1987). Small businesses are mostly not innovation-based, i.e., do not lead to structural qualitative economic changes, but serve as a basis for economic stability and growth (Romanova, Korovin, & Kuzmin, 2017; Kowo, Adenuga, & Sabitu, 2019). At the same time, high-tech innovation requires fundamentally opposite traits (Dyer, Gregersen, & Christensen, 2008; Toomsalu, Tolmacheva, Vlasov, & Chernova, 2019), namely: the ability to innovate (creative thinking), to think of usual things outside of the box (divergent thinking), and to develop critical thinking, higher level of education in certain areas of knowledge, skills to make a relevant group and work in a team of highly qualified specialists.

The abovementioned terminology-related confusion causes systemic errors in the policy that define measures to support and develop entrepreneurial initiatives.

Various researchers confirm the idea of the existing entrepreneurial intelligence (Gardner, 2007), but what exactly forms the intelligence has not yet been clear. In general, Tschepurenko and Yakovlev (2013) and many others believe that the innovating entrepreneur is a person with an appropriate type of the genius (talent) as a distinct ability that differs the person from other types of genius in fields of logics, linguistics, etc. Repeated efforts to define the components of the genius (talent) have not yet led to impressive results (Kislin, 2008). There are many doubts in scientific validity of such attempts. Not all the researchers support the idea that the genius (talent) is an innate ability and stays undeveloped throughout the life (Day, Boardman, & Krueger, 2017).

The search for evidence of the entrepreneurial genius, its criteria, development of the methodology for its development and prospects for the methodology to be applied in the development of managerial competencies are main tasks that researchers face in this area.

The classification of the psychotypes, which economic entities (Litau, 2019) belong to, will make it possible to differentiate their functional role in business and find their attributes. Researchers have dome multiple efforts to identify entrepreneurship components. As a result of such studies, models REASEC, META approach, etc. have grown in popularity (Annex). In attempts to identify key traits of the successful entrepreneur, researchers have repeatedly used the well-known five-factor model developed by Costa and McCrae (1995), so-called Big Five, which includes the following components: extravert nature, openness to experimenting, emotional stability, consciousness, and no-conciliation habitude. It seems that each of the mentioned qualities to one or another degree describes the entrepreneur. However, it can equally belong to the people engaged in any other business. Hence, the model (in terms of the science methodology) is not a sufficient and necessary attribute of the entrepreneurship phenomenon (*second-order error*).

All of the entrepreneur's traits (see Annex) implicitly have a methodology-related error. The presented descriptions of main traits do not make it possible for us to highlight the innovating entrepreneur's personality in an unambiguous way, as an enumeration of traits does not provide us with a holistic view of the phenomenon.

3. Material and Methods

So far, we have not had a clear definition of entrepreneurial creativity and features that help us to distinguish entrepreneurial creativity from other types of creativity. Researchers have not yet made fully clear the psychometric characteristics of this type of talent. It is crucial to understand what a sufficient attribute of the entrepreneur is, i.e. identify a fundamental and inherent trait that provides for the genesis of this phenomenon itself. The phenomenon under consideration discloses itself in the course of a creative action.

Economic activity of the subject should lead to appearance of the product, which (as we might consider) is a result of creativity. Creativity is an activity, in the process of which people create qualitatively new values or produce something objectively new. The unique character of its result is a main criterion that distinguishes the entrepreneurial creativity from other economic activities (Masloboeva, 2016). Leasing of commercial real estate, retail trade, etc. are not creative entrepreneurial activities. They are examples of efficient economic activities aimed at economic benefits, but they are not innovative in any way.

The category of creativity has symbiotic relationships with destruction (creation through destruction). The understanding of entrepreneurial activity as aimed at destruction corresponds to the dialectical negation law in terms of academic logic. We might state that entrepreneurial activity generates a contradiction by means of

creating the new and destroying the old. Thus, the dialectical contradiction is a distinguishing feature that describes entrepreneurship and distinguishes it from all of the other activities, despite the fact that names are the same due to the circumstances. Consequently, the subject, who initiates this type of activity, is an innovating entrepreneur, so significant for the economy.

This leads to the conclusion, which is the most important for the understanding of this phenomenon. Any object newly created by innovation must have a pair (anti-object), something that will be destroyed as a result of creating the new object. The absence of the mentioned dynamics in the development of the produced pair of goods points to an uncreative nature of activity, assuming that the activity is not entrepreneurial in the given framework.

The availability of the anti-object is a criterion of the entrepreneurial idea. The pairing test allows verifying the results of *labour in business* (assuming production of goods, works, and services) for compliance with the activity referred to as entrepreneurial and innovative. In this context, the newly created object (good) simultaneously assumes the anti-idea, something that will be destroyed upon implementation of the innovative component. Based on significance and prevalence of the anti-idea, we can make reasonable predictions on significance of the entrepreneurial idea.

Thus, in terms of creation-destruction, a sufficient attribute of entrepreneurship is the activity, in the process of which people produce the new good, introduction of which inevitably leads to the destruction of available ones and the evolutionary change in socio-economic relations. These new goods and methods compete with the old ones and thus competition leads to socio-economic progress in society.

Further, in compliance with the theorization methodology, we will identify attributes of entrepreneurship.

4. Results and Discussion

Real entrepreneurial creativity has inextricable connections with gaining of economic benefits. This implies the most important component: entrepreneurial creativity does not exist outside of its connection to the economic life of the society. It is impossible to assess the significance and scale of the entrepreneurial idea if it is not implemented. The action of creative destruction must also happen. Therefore, a necessary attribute for the entrepreneurship and innovation is the inalienable connection of the economic entity with the society expressed in socio-economic relations that arise regarding the introduction of the newly created good.

Innovating entrepreneurs do not have distinctive external features that would help to distinguish them from other entities. At the same time, achievement of the commercial success often requires considerable time. The paradox is that there is a public need in innovators, but what they exactly are is unclear until the success in their business. Only Schumpeter managed to overcome this challenge when he considered the entrepreneur through creative destruction, thereby referring to the most important category of creativity (Schumpeter, 1942). We can show Schumpeter's creative destruction as a process of a search for the anti-idea and we have used this in the proposed model for entrepreneurship formalization.

The entrepreneurship anti-idea progressive materialization model (PMAi) (Figure 1) might serve as a basis for the assessment of innovative concept significance and further development of the system of criteria to assess scale and usefulness from possible materialization of the entrepreneurial creativity.

ISSN 2345-0282 (online) http://jssidoi.org/jesi/ 2019 Volume 7 Number 2 (December) http://doi.org/10.9770/jesi.2019.7.2(35)

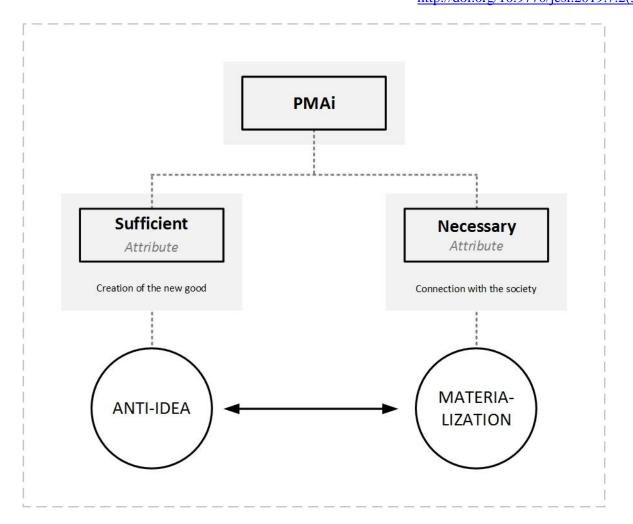


Fig. 1. Model of progressive materialization for the entrepreneurship anti-idea

Anti-ideology is a combination of the goods, which will be jeopardized in case of implementing the entrepreneurial idea. The model shows an inextricable connection between the materialization of the entrepreneurial idea and the destruction of existing goods that simultaneously occur. The absence of this bond assumes the absence of the innovative component in the idea under consideration.

Prior to materialization of the entrepreneurial idea, its social necessity is considerably uncertain. We broadly understood social necessity assuming the achievement of commercial success and social benefit. The measurement of the entrepreneurial idea value from this point of view makes it possible to evaluate its capacity.

The anti-idea progressive materialization model clearly shows an internal connection of necessary and sufficient attributes of entrepreneur's innovation. The proposed attributes (creation of the new good and bond with the society) reveal its content and make the basis for the development of tools, using which we can set it off against other types of economic activity.

In quantitative measurements of the entrepreneurial idea value, we come from a scale of its influence on the market and from a level of its social utility (Figure 2).

ISSN 2345-0282 (online) http://jssidoi.org/jesi/ 2019 Volume 7 Number 2 (December) http://doi.org/10.9770/jesi.2019.7.2(35)

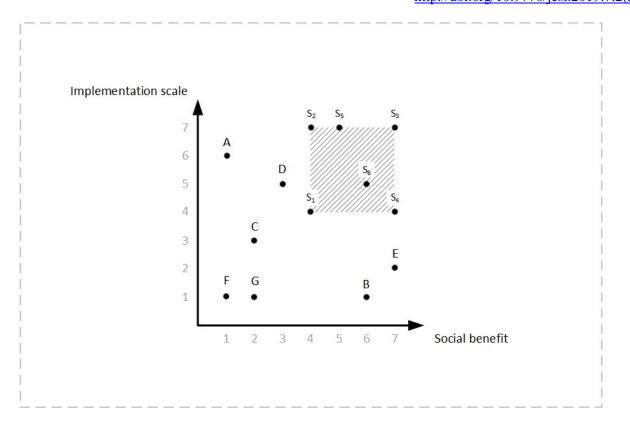


Fig. 2. Value of entrepreneurial idea significance (rate range: A - high value of implementation scale and low significance, B - is low value of implementation scale and high significance, C, D, and E - are the best range of quantitative estimates)

We measure idea significance in terms of the social benefit. Implementation of the idea destroys an available good, thereby starting the process of economic development. Therefore, the new good must be beneficial in itself. To measure significance of the entrepreneurial idea, there is the chosen optimal range of quantitative ratings from 1 to 7. We consider it optimal for sociological, marketing, and economic research (e.g., Likert scale) (Reshetnikova & Dovgan, 2015). The second parameter (scale level) lies on assessment of the idea distribution (sales might serve as such a criterion).

It follows from Figure 2 that the shaded area is the most desirable both in terms of the economic benefit for a single subject, who implements an innovative idea, and in terms of the society. Undoubtedly, there might be the good with a poor social benefit and wide distribution.

Thus, the PMAi model allows measuring the entrepreneurship in terms of the innovative component.

Following up upon the discussion of the author's approach, it is time to point out that people erroneously consider the entrepreneurship phenomenon within the framework of economics outside the transdisciplinarity methodology (Bazhanov & Scholz, 2015). Most of the activities done by the entrepreneur are only possible through solving of comprehensive cognitive tasks. Hence, in order to understand the entrepreneur's traits, one needs to know a lot about how the human mind works. At the same time, we are sure that there are certain features of thought processes that are typical for the entrepreneurial and innovative type of the personality. While researchers of entrepreneurship are just starting to apply methodology of neuro sciences (Laureiro-Martinez, Brusoni, Canessa, & Zollo, 2014; de Holan, 2013; Ortiz-Teran, Turrero, Santos, Bryant, & Ortiz, 2013), close attention to the brain and its operation has had a long research tradition with the focus on ways of thinking's influence on underlying

ISSN 2345-0282 (online) http://jssidoi.org/jesi/ 2019 Volume 7 Number 2 (December) http://doi.org/10.9770/jesi.2019.7.2(35)

motives (Goodale, Kuratko, Hornsby, & Covin, 2011), narratives (Garud & Giuliani, 2013), aspirations (Armstrong & Hird, 2009), actions (Townsend, 2012), imagination (Cornelissen, 2013), cognition (Mitchell *et al.*, 2002; Chuvikov, 2017), knowledge (Shane, 2000; Vlasov, & Demin, 2017; Vlasov, Juravleva, & Shakhnov, 2019), intuition (Mitchell, Friga, & Mitchell, 2005), and even the way of thinking (Haynie, Shepherd, Mosakowski, & Earley, 2010). At the same time, they attempt to explain the relationship between mental operations and a specific action or no-action in terms of entrepreneurship.

It is worth paying attention to the fact that setting off the personality against other psychotypes helps to attribute something as the entrepreneurship. In this context, we can use results of psychological and neuropsychophysiological research to design efficient groups of managers.

Conclusion

People have started to perceive the innovating entrepreneur as a structure-forming element in economic development. The growing number of papers on this subject clearly confirms this. Our research has made it possible to elaborate entrepreneurship theorization and make this phenomenon formal.

In the course of the research, we proposed the approach to understanding of entrepreneurship. The approach makes it possible to identify this activity as essentially distinct from other similar economic activities. We refer entrepreneurship and innovation to the subject's activity aimed at deriving economic benefits to create new goods. The introduction of new goods inevitably leads to the destruction of existing ones and an evolutionary change in socio-economic relations. In the framework of this approach, we have introduced the concept of anti-ideology in entrepreneurship. The concept mirrors the nature of innovating as a process of creative destruction. This methodological principle is a basis for the model of progressive materialization of the entrepreneurship anti-idea (PMAi). It makes it possible to evaluate the capacity of an entrepreneurial idea before time of its implementation.

References

Abdullah, F., Hamali, J., Deen, A.R., Saban, G., & Abdurahman, A.Z.A. (2009). Developing a framework of success of Bumiputera entrepreneurs. Journal of Enterprising Communities, 3(1), 8-24. <u>https://doi.org/10.1108/17506200910943652</u>

Acharya, V., Rajan, A., & Schoar, A. (2004). What Determines Entrepreneurial Success? – A Phichometric Study of Rural Entrepreneurs in India. Retrieved from <u>https://ifmrlead.org/what-determines-entrepreneurial-success-a-psychometric-study-of-rural-entrepreneurs-in-india/</u>

Ahmetoglu, G., Leutner, F., & Chamorro-Premuzic, T. (2011), EQ-nomics: Understanding the relationship between individual differences in trait emotional intelligence and entrepreneurship. Personality and Individual Differences, 51 (8), 1028-1033. https://doi.org/10.1016/j.paid.2011.08.016

Armstrong, S.J. & Hird, A. (2009). Cognitive style and entrepreneurial drive of new and mature business owner-managers. Journal of Business and Psychology, 24(4), 419-430. <u>https://doi.org/10.1007/s10869-009-9114-4</u>

Barinova, V.A., Zemtsov, S.P., & Tsareva, Y.V. (2018). Entrepreneurship and institutions: Does the relationship exist at the regional level in Russia? Voprosy Ekonomiki, 6, 92-116. <u>https://doi.org/10.32609/0042-8736-2018-6-92-116</u>

Bazhanov, V. & Scholz, R.V. (2015). Transdisciplinarity in Philosophy and Science: Approaches, Challenges, Prospects. Moscow: Navigator Publishing House.

Begley, T.M. & Boyd, D.P. (1987). Phychological characteristics associated with performance in entrepreneurial firms and smaller businesses. Journal of Business Venturing, 2(1), 79-93. <u>https://doi.org/10.1016/0883-9026(87)90020-6</u>

ISSN 2345-0282 (online) <u>http://jssidoi.org/jesi/</u> 2019 Volume 7 Number 2 (December) http://doi.org/10.9770/jesi.2019.7.2(35)

Bulu, M., Eraslan, I.H., & Nasır, A., (2005). The Characteristics of Turkish Entrepreneurs. In Global Business and Technology Association (GBATA), 2005 International Conference. Lisbon-Leiria, Portugal, July 12-16.

Cornelissen, J.P. (2013). Portrait of an entrepreneur: Vincent van Gogh, Steve Jobs, and the entrepreneurial imagination. Academy of Management Review, 38(4), 700-709. <u>https://doi.org/10.5465/amr.2013.0068</u>

Costa, P. T., Jr. & McCrae, R.R. (1995). Persons, places, and personality: career assessment using the revised NEO personality inventory. Journal of Career Assessment, 3(2), 123-139. <u>https://doi.org/10.1177/106907279500300202</u>

Chuvikov, D. A. (2017). Application of expert modeling in new knowledge obtained by man. Radio industry (Russia), 2, 72-80. https://doi.org/10.21778/2413-9599-2017-2-72-80

David, Z. & Edward, B. (2011). Personal characteristics and strategic orientation: entrepreneurs in Canadian manufacturing companies. International Journal of Entrepreneural Bahaviour and Research, 17(1), 82-103. <u>https://doi.org/10.1108/13552551111107525</u>

Day, M., Boardman, M.C., & Krueger, N.F. (2017). Handbook of Research Methodologies and Design in Neuroentrepreneurship. Cheltenham: Edward Elgar Publishing. <u>https://doi.org/10.4337/9781785365041</u>

De Holan, P.M. (2014). It's all in your head: why we need neuroentrepreneurship. Journal of Management Inquiry, 23, 93-97. https://doi.org/10.1177/1056492613485913

Dyer, J.H., Gregersen, H.B., & Christensen, C. (2008). Entrepreneurial behaviors, opportunity recognition, and the origins of innovative ventures. Strategic Entrepreneurship Journal, 2, 317-338. <u>https://doi.org/10.1002/sej.59</u>

Ehigie, B.O. & Umoren, U.E. (2003). Psychological factors influencing perceived entrepreneurial success among Nigerian women in small-scale business. Journal of International Women's Studies, 5(1), 78-95.

Gallyamov, R. (2016). Features of women's entrepreneurship in modern Russia. Economics and Management, 3, 56-64.

Gardner, G. (2007). Mind Structure: The Theory of Multiple Intelligence Moscow: Williams Publishing House LLC.

Garud, R. & Giuliani, A.P. (2013). A narrative perspective on entrepreneurial opportunities. Academy of Management Review, 38(1), 157-160. <u>https://doi.org/10.5465/amr.2012.0055</u>

Goodale, J.C., Kuratko, D.F., Hornsby, J.S., & Covin, J.G. (2011). Operations Management and corporate entrepreneurship: the moderating effect of operations control on the antecedents of corporate entrepreneurial activity in relation to innovation performance. Journal of Operations Management, 29(1-2), 116-127. <u>https://doi.org/10.1016/j.jom.2010.07.005</u>

Gray, C. (2002). Entrepreneurship, resistance to change and growth in small firms. Journal of Small Business and Enterprise Development, 9(1), 61-72. <u>https://doi.org/10.1108/14626000210419491</u>

Haynie, J.M., Shepherd, D., Mosakowski, E., & Earley, P.C. (2010). A situated metacognitive model of the entrepreneurial mindset. Journal of Business Venturing, 25, 217-229. <u>https://doi.org/10.1016/j.jbusvent.2008.10.001</u>

Holland, J.L. (1997). Making vocational choices: A theory of vocational personalities and work environments, 3rd ed. Odessa, FL, US: Psychological Assessment Resources.

Hui, K.S., Csete, J., & Raftery, J. (2006). Factors involved in success of Hong Kong construction and property entrepreneurs. International Journal of Entrepreneurial Behaviour and Research, 12(4), 228-245. <u>https://doi.org/10.1108/13552550610679177</u>

Karabulut, A. (2016). Personality traits on entrepreneurial intention. Procedia – Social and Behavioral Sciences, 229, 12-21. https://doi.org/10.1016/j.sbspro.2016.07.109

Kislin D.V. (2008). Main approaches to the study of the phenomenon of entrepreneurship (based on the review of foreign literature). Vestnik of Lobachevsky University of Nizhni Novgorod, 6, 208-2016.

Kowo, S. A., Adenuga, O. A. O., Sabitu, O.O. (2019). The role of SMEs development on poverty alleviation in Nigeria. Insights into Regional Development, 1(3), 214-226. <u>https://doi.org/10.9770/ird.2019.1.3(3)</u>

ISSN 2345-0282 (online) <u>http://jssidoi.org/jesi/</u> 2019 Volume 7 Number 2 (December) http://doi.org/10.9770/jesi.2019.7.2(35)

Laureiro-Martinez, D., Brusoni, S., Canessa, N., & Zollo M. (2014). Understanding the exploration-exploitation dilemma: an fMRI study of attention control and decision making performance. Strategic Management Journal, 36, 319-338. <u>https://doi.org/10.1002/smj.2221</u>

Litau, E.Y. (2019). Classification of economic psychotypes subjects management. Economic Science and Humanities, 2(235), 100-110.

Man, T. (2019). Nurturing entrepreneurial competencies through university-based entrepreneurship centers: A social constructivist perspective. Seminal Ideas for the Next Twenty-Five Years of Advances, 21, 141-161. <u>https://doi.org/10.1108/S1074-754020190000021006</u>

Masloboeva, O.D. (2016). The projective nature of creative process. In Creativity as a national element. The Sense of Creativity: Innovation and Design. Collected papers of St. Petersburg State University of Economics (pp. 26-40).

Mitchell, R.K. *et al.*, (2002). Toward a theory of entrepreneurial cognition: rethinking the people side of entrepreneurship research. Entrepreneurship Theory and Practice, 27(2), 93-104. <u>https://doi.org/10.1111/1540-8520.00001</u>

Mitchell, J.R., Friga, P.N., & Mitchell, R.K. (2005). Untangling the intuition mess: intuition as a construct in entrepreneurship research. Entrepreneurship Theory and Practice, 29(6), 653-679. <u>https://doi.org/10.1111/j.1540-6520.2005.00102.x</u>

Nandram, S. & Samson, K. (2007). Entrepreneurial Behavior: NRG Working Paper No. 07-04, 1-29.

Ortiz-Teran, E., Turrero, A., Santos, J.M., Bryant, P.T., Ortiz, T. (2014). Brain cortical organization in entrepreneurs during visual Stroop decision task. Clinical, Cosmetic and Investigational Dentistry, 6, 45-56. <u>https://doi.org/10.2147/NAN.S48243</u>

Papz, A., Zarafshani, K., Tavakoli, M., & Papzan, M. (2008). Determining factors influencing rural entrepreneurs' access. African Journal of Agricultural Research, 3(9), 597-600.

Romanova, O. A., Korovin, G. B., & Kuzmin, E. A. (2017). Analysis of the development prospects for the high-tech sector of the economy in the context of new industrialization. Espacios, 38(59), 25.

Reshetnikova, T.B. & Dovgan, S.M. (2015). Marketing Research. Second edition supplemented. State HEI NSU, 280-281.

Ryazantsev, S.V. (2000). Ethnic entrepreneurship as a form of migrant adaptation. Social Sciences, 5, 73-86.

Schumpeter, J. (1942). Capitalism, Socialism, and Democracy. New York: Harper & Brothers.

Semenova, Yu.A. (2018). Challenges in youth entrepreneurship in modern Russia. The fourth industrial revolution: realities and today's challenges. In 10th Anniversary St. Petersburg sociological readings. Proceedings of the International Scientific Conference, 346-350.

Shane, S. (2000). Prior knowledge and the discovery of entrepreneurial opportunities. Organization Science, 11(4), 448-469. https://doi.org/10.1287/orsc.11.4.448.14602

Shane, S. & Nicolaou, N. (2010). Genetics, the Big Five, and the tendency to be self-employed. Journal of Applied Psychology, 95(6), 1154-1162. <u>https://doi.org/10.1037/a0020294</u>

Singh, R.H. & Rahman, H. (2013). Entrepreneurs' personality traits and their success: an empirical analysis. International Research Journal of Social Science and Management, 3(7), 99-104.Desai, V. (2001). Dynamics of Entrepreneurial Development and Management. New Delhi: Himalaya Publishing House.

Soininen, J., Puumalainen, K., Sjogren, H., & Syrja, P. (2015). What drives entrepreneurial orientation in small firms? The roles of ownermanager and financial conditions. International Journal of Business Excellence, 8(1), 85-103. <u>https://doi.org/10.1504/IJBEX.2015.065981</u>

Sotnikova, E.A., Skvortsova, N.A., & Lebedeva, O.A. (2015). Business under uncertainty conditions. Fundamental Research, 2(7), 1465-1469.

Timmons, J.A. (1994). New Venture Creation, Entrepreneurship for the 21 st Century, 4 th Edition, Glasgow: Irwin; University of Strathclyde.

Toomsalu, L., Tolmacheva, S., Vlasov, A., & Chernova, V. (2019). Determinants of innovations in small and medium enterprises: A European and international experience. Terra Economicus, 17(2), 112–123. <u>https://doi.org/10.23683/2073-6606-2019-17-2-112-123</u>

ISSN 2345-0282 (online) <u>http://jssidoi.org/jesi/</u> 2019 Volume 7 Number 2 (December) http://doi.org/10.9770/jesi.2019.7.2(35)

Townsend, D.M., (2012). Captains of their own destiny? Toward a theory of entrepreneurial agency in firm survival. Entrepreneurial Action, 14, 125-160. <u>https://doi.org/10.1108/S1074-7540(2012)0000014008</u>

Tschepurenko, Yu.A. & Yakovlev A.A. (2013). A Theory of Entrepreneurship: The Importance of Context. Russian Management Journal, 11(2), 51-60.

van der Loos, M.J.H.M. et al. (2013). Serum testosterone levels in males are not associated with entrepreneurial behaviour in two independent observational studies. Physiology & Behaviour, 119, 110-114. <u>https://doi.org/10.1016/j.physbeh.2013.06.003</u>

Vlasov, A. I., & Demin, A. A. (2017). Visual methods of formalization of knowledge in the conditions of the synchronous technologies of system engineering. In ACM International Conference Proceeding Series. <u>https://doi.org/10.1145/3166094.3166098</u>

Vlasov, A. I., Juravleva, L. V, & Shakhnov, V. A. (2019). Visual environment of cognitive graphics for end-to-end engineering projectbased education. Journal of Applied Engineering Science, 17(1), 99–106. <u>https://doi.org/10.5937/jaes17-20262</u>

Wood, M.S. & Williams, D.W. (2014). Opportunity evaluation as rule-based decision-making. Journal of Management Studies, 51(4), 573-602. <u>https://doi.org/10.1111/joms.12018</u>

Yudina, A.A. (2013). Gender peculiarities of small business in Russia: on the issue about the degree of problem development. Management Issues, 3(24). Retrieved from <a href="http://www.http://wwwwwwwwww.http://wwww.http://www

Source	Model/Key parameters
Timmons (1994)	Imposed obligations and determination, leadership, constant search for new opportunities, risk tolerance, ambiguity and uncertainty, creativity, self-confidence and ability to adapt, motivation for excellence
Gray (2002)	Based on the model proposed by J. Timmons, contributing the mandatory component: motivation and driving force
Holland (1997)	RIASEC model: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), Conventional (C).
David, & Edward (2011)	Striving for achievements and recognition + internal locus of control
Ahmetoglu (2011)	META-approach, presented as a 4-axis structure: sensitivity to emerging chances, creativity, opportunism, and farseeing
Shane & Nicolaou (2010)	Extrovert in nature, openness to new experience, friendliness, consciousness, emotional resilience
Singh, & Rahman (2013)	Creativity, innovation, dedication and hard work, good planning, sincerity and commitment, endurance, personal resourcefulness, self-efficacy, ability to take risks, ability to make decisions, flexibility, target orientation and internal locus of control
Desai (2001)	Emotional resilience, personal relationships, attention and tact
Ehigie, & Umoren (2003)	Self-concept, perceived managerial competence, operational pressure, duties at work
Acharya, Rajan, & Schoar (2004)	Self-efficacy, locus of control for the both states
Bulu (2005)	Success, hard work, good idea, money
Hui, Csete, & Raftery (2006)	Self-efficacy, locus of control, decision making, attitude towards risk
Nandram, & Samson (2007)	Attention to detail, ability to see chances, persuasiveness, target-orientation, self-confidence, creativity, courage, reliability, ambitiousness, tenacity, disposition toward empathy, locus of control
Papz, A., Zarafshani, K., Tavakoli, M., & Papzan, M. (2008)	Need in achievements, innovations, internal locus of control, marketing, no bureaucracy, entrepreneur's success
Abdullah, Hamali, Deen, Saban, & Abdurahman (2009)	Progress, decision-making and achievement-oriented thinking, risk management, tenacity, establishing of contacts, optimism
Man (2019)	Active experimenting, authenticity, social interaction, sense of ownership, support
Karabulut (2016)	Locus of control, need in achievements, risk tolerance, entrepreneurial vigilance, entrepreneurial intentions

Annex. Overview of perception and entrepreneur's personality traits (second-order errors)

ISSN 2345-0282 (online) http://jssidoi.org/jesi/ 2019 Volume 7 Number 2 (December) http://doi.org/10.9770/jesi.2019.7.2(35)

Ekaterina LITAU, Doctor of Philosophy (Ph.D.) in Economics and Management, Master of Science (M.S.) in Finance and Economics, Juris Doctor (J.D.), the Associate Professor on the Faculty of Technological Management and Innovations, Saint Petersburg National Research University of Information Technologies, Mechanics and Optics. Ekaterina is the author of books on developing project management and the initiator of entrepreneurial projects. She has been running the researches in the field of Entrepreneurship for more than 15 years and is currently involved in studies in transdisciplinary area bringing together Economics, Neuroentrepreneurship and Cognitive Science. Research interests: Theory of Entrepreneurship, Neuroentrepreneurship, Modern economic models, Enterprise Development Issues, Financial management, Cognitive science in Economics.

ORCID ID: orcid.org/0000-0003-0045-8778

Register for an ORCID ID: https://orcid.org/register

Copyright © 2019 by author(s) and VsI Entrepreneurship and Sustainability Center This work is licensed under the Creative Commons Attribution International License (CC BY). http://creativecommons.org/licenses/by/4.0/

CC O Open Access