

**8<sup>th</sup> icCSBs 2019**  
**The Annual International Conference on Cognitive - Social,  
and Behavioural Sciences**

**CREATIVITY AND CAREER SUCCESS OF ENTREPRENEURS  
AND PROFESSIONALS**

Elena Bobodzhonova (a)\*, Victoria Ustenko (b), Tatiana Novikova (c)

\*Corresponding author

(a) Brunel University London, Kingston Ln, London, Uxbridge UB8 3PH, Great Britain,  
bobodzhonova.elena@gmail.com

(b) The Russian Presidential Academy of National Economy and Public Administration, 84 Vernadsky Prospekt,  
Moscow, Russia, vs.ustenko@igsu.ru

(c) Russian State University for the Humanities, Miusskaya sq. 6, Moscow, GSP-3, 125993, Russia,  
avokivon@mail.ru

*Abstract*

The issue that this article addresses is the need to deepen our understanding of the factors of career success, which currently is explained primarily by the educational level and intelligence. The purpose of the study is to examine the relationship between creativity and career success of entrepreneurs and professionals working in the private sector. To gather the data, we conducted intelligence and creativity tests with 124 respondents in Russia, who have worked in their profession or industry for 10 years or more. The Torrance Creativity Test was used to measure the level of creativity of the respondents. The data leads to the conclusion that successful entrepreneurs and professionals are more creative than those who are less successful. Creativity explains more variation in career success than intelligence. This finding suggests that creativity should play a more important role in educational and training strategies of firms and individuals, striving to succeed in the environment of constant change.

© 2019 Published by Future Academy [www.FutureAcademy.org](http://www.FutureAcademy.org).UK

**Keywords:** Creativity, intelligence, career success, entrepreneurs, Torrance.



## 1. Introduction

Who is more successful in the modern workplace? College education and high scores on intelligence tests are still powerful career makers, but in the modern economy they start to make room for creativity. According to the Future of Jobs Report published by the World Economic Forum in 2016, creativity is one of the top three cognitive skills that will be required in the workplace in 2020 and beyond. A research conducted by McKinsey concludes that creativity is associated with superior financial performance of firms, since creativity of employees drives innovation and innovation is a key to growth (McKinsey, 2017).

Today over 40% of jobs require people making decisions based on their judgments and expressing their talent, and the current pace of digitization will further reduce the number of routine tasks in the economy. In the words of Richard Florida, the emerging creative class is taking us towards a society, where «creative ethos is increasingly dominant» (Florida, 2014). It will not be long, before creative thinking is relevant for the majority of jobs in the developed countries.

However, the idea of creativity as a driver of success in business and the workplace is still not adequately reflected in public policies and talent management strategies of private firms. According to an educational scholar Robinson and Aronica (2016) our educational systems are still shaped by the ideas of the industrial age. The formal education is standardized and it does not teach the creative thinking skills needed in the challenging environment of the modern workplace. According to the LinkedIn Learning Report 2019, employers are 42% more worried about missing soft skills (including creativity and persuasion) of the college graduates than technical skills. However, pre-employment assessment is dominated by the intelligence and aptitude tests, and only a small proportion of companies actually offer creativity and innovation training to their employees (Birdi, 2016).

Studies of the impact of creativity on the real-life outcomes tend to approach the concept of creativity in any of three ways. A large body of research treats creativity as a personality trait and identifies it with divergent thinking, coming up with many alternate potential solutions to the problem, in contrast with convergent thinking, coming up with a single right solution (Guilford, 1984; Torrance, 1965). A second strand of literature approaches creativity as a process that emerges from mental abilities common to all of us and puts forward a theory of the stages of the creative process (Feldman, 1980; Runco, 2014). A third set of studies examines creativity from the sociocultural perspective and defines creativity as a novel product that attains some level of social recognition (Amabile, 2018; Csikszentmihalyi, 2015; Sawyer, 2017).

These various perspectives have been used to study the effects of creativity on a broad range of indicators such as public and personal achievement (Runco, Millar, Acar, & Cramond, 2010), creative achievement (Torrance, 1988; Plucker & Makel, 2010), on-the-job performance (Sternberg, Conway, Ketron, & Bernstein, 1981), etc. Evidence is consistent in indicating that creativity is associated with benefits in terms of real-life outcomes. Moreover, there is a large body of literature showing that although creativity is correlated with intelligence (Kim, 2008; Batey & Furnham, 2006), creativity tends to explain more variation in real-life outcomes than intelligence for respondents with an above-average level of intelligence (Furnham, 2008).

However, only a relative handful of studies have specifically examined the impact of creativity on career success in business. At the same time, this is not a usual practice for creativity studies to focus on groups with specific occupational characteristics. We are not aware of studies on this topic examining entrepreneurs and professionals with significant work experience. The selection of participants who have worked in the given industry or profession for 10 years or more was motivated by the need to draw a more reliable distinction between career success and failure.

The scarcity of information on the relationship between creativity and career success is regrettable, because it is sort of evidence that would allow individuals, firms and governments to make better decisions in the field of education and training.

## **2. Problem Statement**

Individual and corporate spending on education continues growing world-wide, but the efficiency of this investment has recently attracted much attention in the scholarly and public debate. The perspective on education and intelligence as driving factors of career success reflects economic reality of the second half of the twentieth century with its rapid industrial growth and the need for industry-specific hard skills. However, the accelerating pace of the technological progress and the emergence of the post-industrial economy have increased demand for soft-skills and, specifically, creativity. The role of creativity in modern economies driven by innovation is growing, but this shift is not adequately reflected in the contents and structure of educational and training programs. The insufficient attention given to creativity development can partially be attributed to the lack of evidence on the actual impact of creativity on economic success and career outcomes, and this deficiency is addressed by the present research.

## **3. Research Questions**

The main research questions addressed are as follows:

- Are successful entrepreneurs and professionals more creative than their less successful counterparts?
- Is the relationship between creativity and career success stronger than the relationship between intelligence and career success?
- How does creativity relate to intelligence?
- Which components of creativity (fluency, flexibility, originality, etc.) have a stronger relationship with career success?

## **4. Purpose of the Study**

The purpose of the study is to empirically evaluate whether creativity is associated with higher levels of success of entrepreneurs and professionals and whether creativity explains more variation in career success than intelligence. The sample includes 124 persons, who were workers or owners of private firms in Russia and who had the experience of 10 years or more in their respective industry or profession. We compare the levels of creativity of the «successful» and «unsuccessful» respondents as measured by the Torrance Test of Creative Thinking and their intelligence levels as measured by the Eysenck's test for IQ.

## 5. Research Methods

We conducted a cross-sectional survey of 124 entrepreneurs and professionals associated with private companies registered in Russia. The survey was administered in person and in groups depending on location and access. We used a single-stage sampling procedure with a nonprobability sample based on respondents' availability and convenience.

The age of respondents ranged from 32 to 55 with an average age being 40 years. There were 60 females and 64 males in the sample. All of the respondents had a college level education and were either owners or workers of private companies. Their work experience in the profession or industry ranged from 10 to 32 years with an average of 16 years.

The dependent variable in the research was career success, which was defined for entrepreneurs as being an owner or a partner in company operating for 3 years or more and generating profit (as stated by a respondent). For professionals, career success was defined as being mid- and top-level managers or occupying position of significant seniority in the staffing structure. In cases where formal distinction between career success or failure was blurred, we relied on the respondents' own assessment of their career success and the level of professional satisfaction. 55 respondents in our sample met the criteria for career success, and remaining 69 were qualified in our study as unsuccessful.

The first independent variable in this study was creativity, which was measured by the Torrance Test of Creative Thinking (TTCT). TTCT is one of the most widely used tests of creative thinking and was applied in over 2000 studies to assess levels of creative thinking in respondents of different ages ranging from children to adults. Empirical evidence shows TTCT to be among the most reliable and valid creativity tests. TTCT is based on J. Guilford's concept of divergent thinking and defines creativity as the process of sensing problems or gaps in information, then identifying the difficulties and seeking solutions through trial and error or through forming hypotheses (Torrance, 1965).

TTCT consists of two sets of tests, which assess verbal and figural components of creative thinking. Although the scores on the Verbal and Figural sections of TTCT are significantly related, there is a significant body of research addressing the questions of whether Verbal and Figural TTCT are domain-specific and therefore measure different types of cognitive skills and attitudes (Cramond, Matthews-Morgan, Bandalos, & Zuo, 2005; Baer, 1998). Based on this consideration, in this study we used both Verbal and Figural TTCT to get a more comprehensive understanding of respondents' creativity.

The TTCT assessment framework is based on the evaluation of the following aspects of creative thinking:

- 1) Fluency: an ability to produce multiple ideas or alternate solutions.
- 2) Flexibility: an ability to come up with ideas belonging to different realms of thought.
- 3) Elaboration: ability to develop and enhance ideas.
- 4) Originality: ability to produce uncommon or unique ideas.
- 5) Abstractness of title: ability to depart from concrete descriptions and think in abstract terms.
- 6) Resistance to premature closure: an ability to keep an open mind and refrain from a premature decision in order to produce an original idea.

The second independent variable was intelligence, which was measured by H. Eysenck's test for IQ. This is one of the standard approaches to assessing an individual's capacity for convergent thinking. The

IQ test identifies respondents' ability to think abstractly and to solve problems which have a unique solution using one's knowledge and reasoning capacity.

Both TTCT and Eysenck's test for IQ were administered in a pen and paper form and scored in accordance with standardized norm tables.

## 6. Findings

Table 01 reports levels of intelligence, verbal and figural creativity for the following groups: all respondents; respondents which qualified as a «career success»; and respondents which qualified as a «career failure». The analysis shows that respondents with a successful career score higher both on verbal and figural creativity than respondents with no career success. The average level of intelligence among successful respondents is also higher than that of the unsuccessful respondents.

Within the «career success» group, 65% of the respondents have shown a high level of verbal creativity and 59% of the respondents — a high level of figural creativity, whereas for the «career failure» group corresponding figures were only 13% and 7%. Intelligence scores followed a similar pattern: 41% of the respondents with career success have shown high level intelligence as compared to only 33% of the respondents with no career success.

**Table 01.** Descriptive statistics

Variable	Mean	SD	Range
<i>All respondents</i>			
Verbal creativity	57,4	8,1	35,7
Figural creativity	56,6	5,8	22
Intelligence	108,3	8,8	32
<i>"Career success" group</i>			
Verbal creativity	62,1	7,6	30,4
Figural creativity	60,3	5	19,2
Intelligence	109,1	8,2	30
<i>"Career failure" group</i>			
Verbal creativity	52,2	5,3	20,2
Figural creativity	52,5	3,9	18,3
Intelligence	107,3	10	29

Table 02 presents the results of a two-sample t-test with equal variances comparing intelligence and creativity scores for the «career success» and «career failure» groups. The analysis shows that the differences in mean scores on creativity between the two groups are statistically significant. Our data corroborates the hypothesis that higher levels of creativity are associated with career success for entrepreneurs and professionals. This inference holds for both verbal and figural creativity.

However, the analysis shows that there is no statistically significant difference between the level of intelligence of respondents with career success and those with no career success. Since intelligence does not explain much variation in career success for entrepreneurs and professionals, we can conclude that

relationship between creativity and career success is stronger than the relationship between intelligence and career success for our group. It is noteworthy, however, that this conclusion is true only for the groups with the level of intelligence above average, whereas for the groups with a large variation in the levels of intelligence, IQ is expected to remain an important factor defining career success.

**Table 02.** Evaluation of the statistical significance of the differences in mean scores on creativity and intelligence scores between the «career success» and «career failure» group

	Verbal Creativity	Figural Creativity	Intelligence
t-statistic	4,27014	4,85548	0,57530
P(T<=t) one-tail	0,00009	0,00002	0,28469
t critical one-tail	1,69726	1,69726	1,69726
P(T<=t) two-tail	0,00018	0,00004	0,56938
t critical two-tail	2,04227	2,04227	2,04227

Table 03 shows coefficients of correlation between creativity and intelligence. The correlation between creativity and intelligence for all respondents is positive (0,058), but significantly lower than reported in the literature. In their meta-analysis, Batey and Furnham (2006) found that correlation between creativity and intelligence tends to vary between 0,2 and 0,4, which is among the strongest effects reported in psychological research. In a similar meta-study, Kim (2008) reports an average correlation coefficient of 0,2.

For respondents with career success the correlation between verbal creativity and intelligence is positive and strong (0,339). For the «career failure» group the corresponding indicator is, on the contrary, negative and strong (-0,473). We can speculate that successful entrepreneurs and professionals are capable of combining divergent and convergent thinking, which allows them to generate a significant amount of diverse ideas and then follow their analytical process to arrive at an optimal solution. This corresponds to the theory of the stages of creative process. But unsuccessful respondents tend to rely on a single cognitive strategy (divergent or convergent thinking), which makes it more difficult for them to complete the creative process and achieve a desirable result.

The relationship between creativity and intelligence is complex and depends on specific characteristics of the group studied. Our findings partly support existing literature and establish positive correlation between creativity and intelligence with the exception of the «career failure» group, for which this relationship turns to a strong negative.

**Table 03.** Correlation coefficients for creativity and intelligence

	Verbal creativity and intelligence	Figural creativity and intelligence
All respondents	0,058	0,040
«Career success» group	0,339	0,005
«Career failure» group	-0,473	-0,094

Table 04 reports the results of a two-sample t-test with equal variances comparing the means of different components of creativity for the «career success» and «career failure» groups.

**Table 04.** Evaluation of the statistical significance of differences in the mean scores on creativity components between the «career success» and «career failure» group

	Mean for «career success» group	Mean for «career failure» group	Mean difference
Verbal flexibility	59,4	50,1	9,4
Verbal fluency	63,5	52,5	11,0
Verbal originality	63,4	53,9	9,6
Figural fluency	52,0	46,1	5,9
Figural originality	52,8	46,8	6,0
Elaboration	66,6	60,6	5,9
Abstractness of title	73,4	57,0	16,4
Resistance to premature closure	57,4	51,9	5,5

At the significance level of 5%, there are statistically significant differences in the mean scores on all components of creative thinking (flexibility, fluency, originality, etc.) between the two groups. Therefore, the data does not allow us to single out certain components of creative thinking which are more important for career success than others. All of the aspects of creative thinking seem to matter, which is in line with the Torrance framework.

## 7. Conclusion

The study provides evidence that higher levels of creativity are associated with greater career success for entrepreneurs and professionals. This finding deepens our understanding of the link between creativity and real-life outcomes, a recurring theme in the psychology of creativity studies, by focusing on the performance of individuals that drive innovation in the modern economy. The research has shown that creativity explains success and failure in the modern workplace better than intelligence, which has significant practical implications. We believe that creativity training should play a more important role in the strategy of human capital development for individuals, firms, and governments. With the accelerating pace of technological change and innovation, the impact of creativity on career success is expected to keep on growing. Another important contribution of this study concerns the ongoing debate on the relationship of creativity and intelligence. We found a strong positive correlation between creativity and intelligence for the subsample of respondents with career success, which corresponds to the results reported in the literature, but this relationship for the subsample of respondents with no career success was reversed — it was strong and negative. This might imply that successful entrepreneurs and professionals have mastered both divergent and convergent thinking strategies and use them interchangeably to arrive at optimal solutions, whereas career failure is defined by excessive reliance on only one of those cognitive strategy. However, more definitive conclusions on this matter require further research. The present study did not address the issue of how the respondents' perception of creativity is related to their career results, but there was an interesting finding during the interviews conducted for this research that is worth mentioning. Respondents, who acknowledged the importance of creativity in the workplace and believed in their own creative capacity, were usually more successful. One of the successful entrepreneurs we interviewed put it this way:

«Nothing is possible without creativity. ... We constantly make decisions and, depending on how flexible we are, we either search for bold creative solutions or choose from those solutions that already exist». One of the professionals summarized a contrasting attitude which is often shared by those who have not achieved career success: «Creativity is bad for my job. It is a gamble. Everything should be solid and reliable». It might be a fruitful area for future studies to determine how the perception of creativity affects the creative capacity and career outcomes for entrepreneurs and professionals.

## References

- Amabile, T. M. (2018). *Creativity in context: Update to the social psychology of creativity*. Routledge.
- Baer, J. (1998). The case for domain specificity of creativity. *Creativity research journal*, 11(2), 173-177.
- Batey, M., & Furnham, A. (2006). Creativity, intelligence, and personality: A critical review of the scattered literature. *Genetic, Social and General Psychology Monographs*, 132 (4), 355 – 429.
- Birdi, K. (2016). Creativity training. In *Human Resource Management, Innovation and Performance* (pp. 298-312). London: Palgrave Macmillan.
- Cramond, B., Matthews-Morgan, J., Bandalos, D., & Zuo, L. (2005). A report on the 40-year follow-up of the Torrance Tests of Creative Thinking: Alive and well in the new millennium. *Gifted Child Quarterly*, 49(4), 283-291.
- Csikszentmihalyi, M. (2015). *The systems model of creativity: The collected works of Mihaly Csikszentmihalyi*. Springer.
- Feldman, D. (1980). *Beyond universals in cognitive development*. Norwood, NJ: Ablex.
- Florida, R. (2014). *The rise of the creative class--revisited: Revised and expanded*. Basic Books (AZ), 45.
- Furnham, A. (2008). *Personality and intelligence at work*. London: Routledge.
- Guilford, J. P. (1984). Varieties of divergent production. *The Journal of Creative Behavior*, 18(1), 1-10.
- Kim, K. H. (2008). Meta-analyses of the relationship of creative achievement to both IQ and divergent thinking test scores. *Journal of Creative Behavior*, 42(2), 106 – 130.
- McKinsey (2017). Creativity's bottom line: How winning companies turn creativity into business value and growth. Retrieved from <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/creativitys-bottom-line-how-winning-companies-turn-creativity-into-business-value-and-growth>. Accessed 2 June 2019.
- Plucker, J. A., & Makel, M. C. (2010) Assessment of creativity. In J. C. Kaufman & R. J. Sternberg (Eds.), *The Cambridge handbook of creativity* (pp. 48 – 73 ). Cambridge, UK : Cambridge University Press.
- Robinson, K., & Aronica, L. (2016). *Creative schools: The grassroots revolution that's transforming education*. Penguin books.
- Runco, M. A. (2014). Creativity: Theories and themes: Research, development, and practice. Elsevier, 48-72.
- Runco, M. A., Millar, G., Acar, S., & Cramond, B. (2010). Torrance tests of creative thinking as predictors of personal and public achievement: A fifty-year follow-up. *Creativity Research Journal*, 22(4), 361-368.
- Sawyer, R. K. (2017). *Explaining creativity: The science of human innovation*. Oxford university press, 2<sup>nd</sup> edition.
- Sternberg, R. J., Conway, B. E., Ketron, J. L., & Bernstein, M. (1981) People's conceptions of intelligence. *Journal of Personality and Social Psychology*, 41, 37 – 55.
- Torrance, E. P. (1965). Scientific views of creativity and factors affecting its growth. *Daedalus*, 663-681.
- Torrance, E. P. (1988). The nature of creativity as manifest in its testing. *The nature of creativity*, 43-75.
- World Economic Forum (2016). The Future of Jobs. Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution. Retrieved from <http://reports.weforum.org/future-of-jobs-2016/>