



Entrepreneurial personality dispositions and selected indicators of company functioning[☆]



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ABSTRACT

The main objective of this study is to assess the relationships between personality dispositions of entrepreneurs and indicators of economic success in carrying on business in small and medium enterprises in Poland. Two questionnaires collect the data concerning the enterprise's functioning, and serve to measure an entrepreneur's psychological characteristics relevant to entrepreneurship. The sample comprises 294 entrepreneurs who established their companies in Poland between 2008 and 2012. The findings allow for the identification of a profile of personality traits that relate significantly to a more successful company functioning. The results show that a core of personality dispositions may have a relation with most of aspects of a company's functioning, however, other psychological entrepreneurial dispositions may relate more specifically to particular facets of company's functioning. The findings may serve as a "road map" for identifying skills that need improvement, and for developing educational programs and entrepreneurial behaviors as well.

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1. Introduction

New economic entities usually operate in the sector of small and medium enterprises and comprise a significant part of the whole global economy. The generation coming of age in the early 21st century was even named the "E Generation" because this generation displays the most intense entrepreneurial behavior since the Industrial Revolution (Kuratko, 2003). Particularly intense emergence of entrepreneurial awareness and resulting proliferation of newly established businesses have taken place for the past 25 years in the post-communist countries, such as Poland. Poland is the sixth largest economy in the European Union by number of enterprises, whereas in terms of the number of new companies, Poland appears as the second in 2010—right after France (Łapiński, Nieć, Rzeźnik, & Zakrzewski, 2013).

Several international empirical analyses show that the first four years following the start-up of an enterprise are the most challenging period for its survival; some authors refer to this period as the "death valley" (Backes-Gellner & Werner, 2003; Knaup & Piazza, 2007). The one-year survival rate for enterprises starting up in 2011 in European Union is 83%; the five-year survival rate of enterprises born in 2007

and still active in 2012 is 45% (Eurostat, 2014). The Central Statistical Office (GUS, 2014) provides similar data for Poland—only three out of every four businesses in Poland survive their first year of operation (the rate is 76.6% in 2011). The survival rate declines remarkably in subsequent years—to 54% in the second year and 32% in the fifth year of operation (Tarnawa & Zadura-Lichota, 2013). These data clearly demonstrate that only a minority of new entrepreneurs achieve actual success, understood at least as survival of their company in the critical period of the first four years following its establishment.

2. Theoretical framework

In the context of new companies' failures, an important question arises as to which factors determine whether a start-up will survive and achieve success on the market. Many authors emphasize that the individual psychological dispositions of the entrepreneur are an essential factor in determining whether a commercial start-up achieves success (Espiritu-Olmos & Sastre-Castillo, 2015; Obschonka, Schmitt-Rodermund, Silbereisen, Gosling, & Potter, 2013; Rauch & Frese, 2007). Therefore, this study focuses on the psychological personality dispositions of an entrepreneur as predictors of success for new companies in Poland. This study is relevant because large-scale entrepreneurship in Poland has a relatively short history starting only after 1989 and the studies on this topic in Poland are still missing.

The hypothesis is the existence of significant relationships between particular personality traits of entrepreneurs and indicators of a company's success. Several studies (Obschonka et al., 2013; Zhao, Seibert, & Lumpkin, 2010) reveal an array of attributes of

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entrepreneurs that can contribute to the outcomes of entrepreneurial activities. The literature provides support for the relationships between the entrepreneurial success, defined as the company's survival, and such personality traits as: need for achievement, innovativeness, readiness to take risks, self-efficacy, sense of independence, and autonomy (Stewart & Roth, 2001; Zhang & Arvey, 2009). Some studies even postulate the existence of the entrepreneurial personality profile, based on the specific configuration of the main personality factors: high extraversion, conscientiousness and openness, and low agreeableness and neuroticism (Furnham & Fudge, 2008; Schmitt-Rodermund, 2004, 2007).

However, other indicators can measure a company's success, such as company's survival (profitability, Value Creation Index, Value Added Intellectual Coefficient) (Marti & Cabrita, 2012). Research showing relationships between particular personality traits of entrepreneurs and specific measures of success, other than company's survival, is missing. Based on previous research into personality correlates of entrepreneurship, the main objective of this study is assessing the relationships between personality dispositions of entrepreneurs who established their business within the last four years and the indicators of success in business, defined as specific aspects of their companies' functioning. In particular, this study aims to verify whether entrepreneurial personality dispositions relate to the following indicators of the company functioning: (1) maintenance of liquidity, (2) level of competitiveness, (3) evaluation of chances for future business development, and (4) evaluation of the company's innovativeness.

3. Method

3.1. Study procedure

The study comprises entrepreneurs who established their companies between 2008 and 2012. This time framework ensured that the companies under study had a comparable period of functioning, and were still recent start-ups. The entrepreneurs came from all over Poland. Various regional and nationwide databases of registered companies established between 2008 and 2012 provided data for the recruiting of entrepreneurs for the study. These databases provided contact information. Selected entrepreneurs received invitations to participate in the study by telephone, e-mail, or in a letter. The inclusion criteria for the contact were the location of the company (approximately 100 entrepreneurs per each region of Poland) and the presence of data in the screened registries that enabled contact. This process involved no other sampling methods; therefore, the resulting sample is a convenient sample. 1262 entrepreneurs from 13 different regions of Poland were successfully contacted and invited to participate in the study. Of this number, 345 entrepreneurs agreed to participate and returned completed questionnaires. The study includes the responses of 294 respondents. The remaining 51 responses had incomplete data.

The study took place between January and June 2014. Professionals with previous training conducted the survey. Their tasks comprised contacting entrepreneurs who agreed to participate, giving them instructions about filling in the questionnaires, and collecting the completed sheets of questionnaires.

3.2. Sample characteristics: entrepreneurs

The sample comprised 108 women (37%) and 186 men (63%) between the ages of 21 and 71 ($M = 34.48$, $SD = 9.19$). A majority of the entrepreneurs (51%) had received higher education. The respondents who completed secondary education also constituted a large group (37%), and 9% of the entrepreneurs had received vocational education (data on education was missing in 3% of respondents). Of the surveyed entrepreneurs, 15% established their businesses before the age of 23, 38% when they were 24–29 years old, 32% when they were 30–39 years old, and 15% when they were 40 or older. The

employment status of the entrepreneurs varied before the establishment of a company. The overwhelming majority of respondents were the sole owners of the business activity that they conducted (87%) and had no experience running a business at the moment of establishing their own company (78%) or managing a company (66%).

Of the respondents in this sample, 82% were actively running their businesses at the time of the survey, 9% had suspended business activities, and 9% had closed their businesses.

3.3. Sample characteristics: companies

More than half (53%) of the surveyed enterprises were companies operating locally (mainly with services provided for inhabitants of the local town or district). The remaining companies conducted Poland-wide activity (21%), or operated regionally (18%) or on an international scale (8%). The amount of registered capital required to start a business was usually low. A total of 60% of the enterprises had to provide no more than 20,000 PLN (1USD = 3.73PLN – the average exchange rate, table of 2015-01-21, Narodowy Bank Polski (National Bank of Poland)). The remaining companies needed more financial outlays (PLN 20,001–50,000–22%; PLN 50,001–100,000–11%; PLN 100,001–500,000–5%; and over PLN 100,000–2). Annual turnover increased in comparison to the turnover recorded in the previous year in 41% of the companies (7–10% increase–24%; 0–3% increase–17%). 38% of the enterprises under analysis suffered a loss in annual turnover (7–10% loss–20%; 0–6% loss–11%; over 10% loss–7%). Approximately 21% of the entrepreneurs did not have information regarding the annual turnover of their companies. The sales performance in the previous year usually ranged between 0 and 10% (45%; 11–20%–15%; over 20%–9%). Of the analyzed businesses, 11% were loss-making, and 20% of the entrepreneurs did not have information regarding this matter.

3.4. Methods

This study uses a specifically designed questionnaire—the company-functioning questionnaire. This questionnaire assessed the organizational and economic aspects of an enterprise, especially its economic situation. The questionnaire included 38 questions regarding the crucial organizational and economic aspects of an enterprise, such as range of business activity, a company's annual turnover, sales performance, financial liquidity, a level of competitiveness, self-reported chances for development, and the level of innovation. The target of the questionnaire was a business owner who possessed knowledge of all the indicators of a company's condition. Financial data obtained from the questionnaire were factographic (referring to objective facts), whereas the other questions (for example, the level of innovation and competitiveness, or chances for development) were subjective (i.e., they reflected the subjective opinion of the entrepreneur completing the questionnaire). For the purpose of this study, the data pertaining to the abilities for maintenance of liquidity, level of competitiveness, perceived chances for future development, and level of innovativeness were taken as the indicators of the company functioning. The assessment of maintenance of liquidity used a binary scale (0 failing to maintain liquidity, 1 maintaining liquidity), whereas the measurement of levels of competitiveness, perceived chances for future development, and innovativeness used a three-degree ordinal scale (1—low, 2—average, 3—high). The surveyed entrepreneurs self-reported all the data this instrument assessed, and no other external sources provided information on the company.

Entrepreneurial Dispositions Personality Inventory (EDPI) is a multidimensional questionnaire designed and developed to measure the personality dispositions which may have an association with entrepreneurship and entrepreneurial behavior. Developing the EDPI was an essential part of the current research project, motivated by the apparent absence of the appropriate instruments measuring psychological

aptitude for entrepreneurship valid for the Polish population. A thorough literature search aiming at identifying the individual psychological characteristics related to successful entrepreneurship preceded the development of the questionnaire. Based on the findings from the literature quest, the study identifies fourteen such psychological dispositions: risk-taking propensity, autonomy, disagreeableness, openness to experience, emotional stability, conscientiousness, need for achievement, innovativeness, extraversion, self-efficacy, resistance to stress, internal locus of control, passion, and authoritative parenting.

Each of these characteristics was operationalized as a pool of questionnaire items which appeared the initial version of the instrument. The assessment of the psychometric properties of the final version of EDPI included reliability and validity in a series of pilot studies carried out in samples other than the sample from the study reported in this study. As a result, the EDPI consists of 86 items, which measure 14 personality dispositions that the relevant literature identified as potentially significant for conducting successful business activity. Each item is worded as a statement describing a behavior or belief, and the respondent assessed on a 5-point scale to what degree the statement is true for the respondent (from 'Fully true' to "Fully untrue").

3.5. Statistical analyses

The completed questionnaires underwent statistical analyses with the Mann–Whitney U test, the Kruskal–Wallis H test, post-hoc tests, and the least significant difference test. To interpret the results, the statistical significance threshold was set at the level of $P \leq 0.05$ for all analyses.

4. Results

4.1. Personality dispositions and maintenance of liquidity

Table 1 presents differences with regard to the average EDPI scores in the group of entrepreneurs under analysis based on whether they maintained liquidity of their businesses. Persons maintaining liquidity of their businesses score significantly higher on the EDPI subscales of emotional stability, conscientiousness, need for achievement, innovativeness, self-efficacy, and resistance to stress than those who do not maintain liquidity. The differences with respect to the remaining subscales of the EDPI are not statistically significant.

Table 1
Entrepreneurial personality dispositions in entrepreneurs maintaining and not maintaining liquidity of their businesses.

	Maintaining liquidity (N = 246)		Not maintaining liquidity (N = 48)		Z	P
	M	SD	M	SD		
Risk-taking propensity	19.68	3.87	19.38	3.72	-.396	.692
Autonomy	23.35	3.61	23.34	3.97	-.070	.944
Disagreeableness	19.53	4.35	18.87	4.48	-.948	.343
Openness to experience	20.70	3.63	20.30	3.57	-.835	.403
Emotional stability	21.24	4.99	19.40	4.74	-2.450	.014
Conscientiousness	26.22	4.15	24.13	4.46	-2.878	.004
Need for achievement	23.67	3.52	21.76	3.54	-3.193	.001
Innovativeness	24.08	3.09	22.79	3.20	-2.218	.027
Extraversion	26.08	4.27	25.63	4.43	-.665	.506
Self-efficacy	24.23	3.17	23.00	3.39	-2.419	.016
Resistance to stress	26.00	4.31	24.17	4.16	-2.641	.008
Internal locus of control	18.88	3.56	18.19	3.92	-.969	.333
Passion	23.41	3.68	22.49	4.30	-1.216	.224
Authoritative parenting	16.50	4.79	15.24	5.32	-1.424	.155

p < .05.

4.2. Personality dispositions and the level of company's competitiveness

Table 2 shows the relationships between entrepreneurial personality dispositions and another index of a company's functioning, the level of competitiveness. The entrepreneur's subjective evaluation measures this index as high, average, or low in competitiveness. In total, 106 entrepreneurs evaluate their companies as highly competitive, 163 report average competitiveness and 25 evaluate the competitiveness of their companies as low. The Kruskal–Wallis H test reveals statistically significant differences between these three types of entrepreneurs on six subscales of the EDPI. The group that strikingly stands out comprises respondents who perceive their level of competitiveness to be high. For this group, scores on the subscales of emotional stability, need for achievement, innovativeness, self-efficacy, and resistance to stress are significantly higher than those of the groups that evaluate their companies' level of competitiveness as either low or average. Those who rate their companies' level of competitiveness as high score significantly higher in risk-taking propensity relative to those who rate their companies' level of competitiveness as average. The remaining differences are not statistically significant.

4.3. Personality dispositions and company's chances for development

The next step comprises the analysis of relationships between the entrepreneurs' evaluations of their companies' chances for future development and levels of entrepreneurial dispositions (Table 3). A total of 80 subjects report that their companies have high chances for future development, 152 entrepreneurs evaluate their chances as average, and 62 rate their chances as low. The Kruskal–Wallis H test reveals statistically significant differences between these groups with regard to the measured entrepreneurial dispositions. The levels of risk-taking, openness to experience, conscientiousness, innovativeness, internal locus of control, and passion are significantly higher in persons assessing the chances for development of their businesses as high relative to those who evaluate their chances for development as low. Furthermore, the levels of autonomy, disagreeableness, emotional stability, need for achievement, self-efficacy, and resistance to stress are significantly higher in those assessing the chances for development of their businesses as high relative to individuals in the other two groups. Scores on the extraversion and authoritative parenting subscales are not significantly different among groups.

Table 2
Differences in mean scores in the EDPI in the group of entrepreneurs who evaluated the level of competitiveness of their company as high, average, or low.

	Level of competitiveness						ANOVA	
	High (N = 106)		Average (N = 163)		Low (N = 25)		F	p
	M	SD	M	SD	M	SD		
Risk-taking propensity	20.49	3.89	19.12	3.90	19.36	2.46	4.17	.016
Autonomy	23.96	3.61	23.10	3.61	22.29	3.99	2.87	.058
Disagreeableness	19.92	4.21	19.24	4.43	18.48	4.65	1.41	.244
Openness to experience	21.09	3.31	20.30	3.73	20.88	3.99	1.56	.213
Emotional stability	22.02	4.58	20.57	5.02	18.60	5.50	5.86	.003
Conscientiousness	26.45	4.29	25.55	4.16	25.65	4.74	1.45	.237
Need for achievement	24.43	3.39	22.83	3.61	22.25	3.31	7.88	.000
Innovativeness	24.43	2.88	23.65	3.17	22.80	3.67	3.61	.028
Extraversion	26.45	4.10	25.75	4.32	25.80	4.92	0.87	.419
Self-efficacy	24.91	3.08	23.66	3.27	22.72	2.84	7.30	.001
Resistance to stress	26.88	4.14	25.29	4.37	23.48	3.63	8.12	.000
Internal locus of control	19.26	3.71	18.55	3.69	18.09	2.47	1.66	.192
Passion	23.91	3.77	22.89	3.61	23.04	4.67	2.36	.096
Authoritative parenting	15.94	4.85	16.34	4.93	17.54	4.77	1.06	.349

Table 3
Mean EDPI scores in the groups of entrepreneurs evaluating the chances for the development of their own businesses as high, average, or low.

	Self-assessed chances for future development of a company						ANOVA	
	High		Average		Low		F	p
	M	SD	M	SD	M	SD		
Risk-taking propensity	20.49	3.40	19.48	3.81	18.92	4.27	3.23	.041
Autonomy	24.78	3.34	23.27	3.29	21.73	4.21	13.09	.000
Disagreeableness	20.75	4.06	18.95	3.99	18.80	5.26	5.29	.006
Openness to experience	21.35	3.40	20.65	3.55	19.65	3.87	3.87	.022
Emotional stability	22.48	4.48	20.77	4.73	19.32	5.68	7.46	.001
Conscientiousness	26.39	4.07	26.54	3.96	23.63	4.51	11.45	.000
Need for achievement	25.13	3.04	23.47	3.38	20.85	3.34	29.24	.000
Innovativeness	24.85	2.93	24.04	2.82	22.18	3.49	14.34	.000
Extraversion	26.67	4.10	26.03	4.17	25.10	4.74	2.33	.099
Self-Efficacy	25.30	3.29	23.97	2.93	22.50	3.21	14.06	.000
Resistance to stress	26.77	4.17	25.91	3.97	23.82	4.83	8.80	.000
Internal locus of control	18.97	3.76	19.13	3.36	17.58	3.90	4.17	.016
Passion	24.10	3.43	23.49	3.49	21.59	4.45	8.35	.000
Authoritative parenting	16.03	4.67	16.70	4.97	15.63	4.95	1.19	.306

$p \leq .05$.

4.4. Personality dispositions and companies' innovativeness

Finally, an analysis compares the levels of entrepreneurial dispositions with the entrepreneurs' evaluations of their companies' innovativeness. In total, 96 respondents evaluate the innovativeness of their companies as high, 176 as average, and 22 as low. Table 4 presents differences in levels of entrepreneurial dispositions among the groups of entrepreneurs evaluating their companies' level of innovation as high, average, or low. Those assessing their companies' innovation as high score higher in autonomy, agreeableness, and neuroticism as relative to those who assess their companies' level of innovation as low. The former group also scores higher in need for achievement, innovativeness, and self-efficacy relative to those who evaluate their companies' level of innovation as average or low. Furthermore, the levels of openness to experience and authoritative parenting are higher in those rating their companies' innovation as high relative to those who perceive innovation to be average. The remaining differences are not statistically significant.

5. Discussion

The results of this study show that several entrepreneurial personality dispositions relate significantly to the indicators of the company's

Table 4
Differences in mean EDPI scores in the groups of entrepreneurs who rated their companies' level of innovation as high, average, or low.

	Level of innovation						ANOVA	
	High		Average		Low		F	p
	M	SD	M	SD	M	SD		
Risk-taking propensity	20.11	3.65	19.55	3.95	18.32	3.47	2.07	.128
Autonomy	23.98	3.58	23.28	3.53	21.14	4.28	5.60	.004
Disagreeableness	20.12	4.31	19.33	4.26	17.23	4.92	4.05	.018
Openness to experience	21.44	3.91	20.31	3.35	19.82	3.98	3.65	.027
Emotional stability	21.68	4.70	20.80	4.93	18.68	6.03	3.44	.034
Conscientiousness	25.99	4.23	26.08	4.17	23.75	4.80	2.75	.065
Need for achievement	24.25	3.36	23.23	3.48	20.62	4.07	9.59	.000
Innovativeness	24.81	2.80	23.55	3.02	22.23	4.25	8.58	.000
Extraversion	26.20	4.21	25.95	4.16	25.59	5.70	0.21	.808
Self-efficacy	24.73	3.22	23.80	3.18	22.90	3.28	3.95	.020
Resistance to stress	26.11	4.19	25.71	4.30	23.95	4.94	2.22	.111
Internal locus of control	19.18	3.83	18.69	3.58	17.62	2.78	1.72	.181
Passion	23.81	3.77	23.11	3.56	22.18	5.20	2.02	.134
Authoritative parenting	17.09	4.66	15.64	4.93	18.09	4.78	4.34	.014

functioning. The findings allow for the construction of a personality profile that predisposes an entrepreneur to achieve success in terms of the business activities that they conduct. The following personality traits are those that most positively contribute to economic success (from the strongest to the weakest links):

1. Emotional stability, need for achievement, innovativeness, and self-efficacy
2. Resistance to stress
3. Autonomy, disagreeableness, and openness to experience
4. Conscientiousness, internal locus of control, and passion
5. Risk-taking propensity and authoritative parenting.

The first group of traits seems the most important because each trait is higher in respondents who report favorable indicators of their companies' functioning. Furthermore, the first two groups constitute a collection of personality traits that strongly lead an entrepreneurial individual to maintaining financial liquidity and a high level of competitiveness. These groups are also useful in prospering in terms of the other three analyzed indicators of economic success of an enterprise; however, these constituents also correlate with higher levels of other traits. The remaining groups of traits are less significant. Nevertheless, scoring high on all of these traits seems rather unlikely for an individual entrepreneur. Thus, entrepreneurs have a high chance of achieving success if they score highly in at least the first two groups of personality traits.

The results of this study also demonstrate that different aspects of the company's functioning may relate to different constellations of personality dispositions. Most studies focus on searching for a single personality profile that may predict entrepreneurial behavior and company's success (e.g. identification of the entrepreneurial profile among the Big Five personality traits (Obschonka et al., 2013; Schmitt-Rodermund, 2004, 2007)). These results suggest that such a single profile of entrepreneurial psychological dispositions may not be sufficient to explain the associations between psychological characteristics and actual company functions. As a fact, 'a core personality profile' (i.e. Emotional Stability, Need for Achievement, Innovativeness, and Self-Efficacy) may relate to all aspects of business functioning (at least all the aspects measured in our study); however, other personality traits constellations are probably more specifically predictive of particular aspects of companies functioning. For instance, the risk-taking propensity may relate to the company's level of competitiveness and chances for future development but not to a company's level of innovation or maintaining liquidity.

The results of this research may have substantial practical applications. The findings may serve as a "road map" for developing educational programs supporting entrepreneurship and entrepreneurial behaviors by supporting the development of particular psychological dispositions in an entrepreneur. Education in the field of entrepreneurship may take the form of an academic program, entrepreneurship training, or coaching (Hisrich, Langan-Fox, & Grant, 2007; Katz, 2007). As part of such programs, one may attempt to diagnose the psychological traits of participants displaying entrepreneurial behaviors and purposefully support the development of traits that have the biggest influence on establishing one's own company and running that company successfully.

Additionally, programs supporting people who have already set up a company may use these results. Busenitz and Arthurs (2007) claim that many entrepreneurs lack management and technical skills that are vital in developing an organization. Entrepreneurs must have a broad talent (Markman, 2007). However, even an experienced, motivated, and visionary entrepreneur is at risk of failure (Shane, 2003) and may reap the benefits of education in terms of perfecting their skills and expanding the range of their businesses, or altering the direction of their business activities (Hisrich et al., 2007). The results of the present study may thus serve as a useful tool for identifying which skills need improvement and for developing training programs for entrepreneurs.

Finally, the results may serve as a basis for predicting whether a person who wishes to establish a business and applies for financial aid to achieve this objective (e.g., from public funds or in a form of a loan) will be successful. Institutions that assess the chances for success of candidates intending to open their own businesses may use the traits that this study presents as criteria for assessing the chances of success of a would-be entrepreneur.

6. Limitations and further research

The indicators of a company's functioning that this study uses are the self-reports of the participating entrepreneurs and thus subjective by nature. Therefore, certain personality characteristics, such as self-confidence and optimism may bias self-evaluation of the company's functioning. Interpretations of the findings must consider this limitation; however, this limitation is common to all studies using any type of self-reported data. Some authors suggest that findings from studies based on self-reports can be a preliminary approximation to the studies based on more objective measures (Byrne, 2010; Chen, Chang, & Lo, 2015). Future research should use a more objective measurement of indicators of a company's functioning.

Further research should replicate the findings and focus on the explanation of the mechanisms linking entrepreneurs' psychological dispositions with company's functioning. Of particular interest may be verifying whether reducing personality traits predictive of various aspects of company functioning to a lower number of higher-order traits is possible or whether specific personality traits configurations have a link to diverse aspects of companies' functioning.

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