

IMPACT OF GENDER AND PERSONALITY TRAITS (BFI-10) ON TRUST: MANAGERIAL APPROACH

Antonin Pavlicek – Frantisek Sudzina

Abstract

The aim of this article is to investigate if gender and personality traits influence the trust and its application in innovative management. Big Five Inventory-10 is used to measure personality traits. The research was conducted in the Czech Republic using an on-line questionnaire. A validated Czech translation of the Big Five Inventory-10 instrument was used. Findings are that one measure of trust is significantly influenced by agreeableness and conscientiousness, while the other measure (mistrust) was not significantly influenced by any of the independent variables. This paper is a replication of two previous studies conducted in Denmark. Agreeableness significantly influenced the first measure in both previous studies. In one study, agreeableness influenced also the second measure, while neuroticism had a borderline significant impact on the first measure. In the other study, neuroticism had a borderline significant impact on the second measure. In addition, the relevance of trust in innovative management is also being discussed and considered.

Key words: trust, personality traits, gender, innovative management

JEL Code: M1, M15, J16

Introduction

Trust, as a concept, found its way from sociological and psychological literature to business and economics. Societal trust has been systematically measured since 1960's. Also, the link between trust and management has been discovered – trust being one of the important factors in management.

The concept of trust in business has become widely researched in the last decades, with various connotations and results. Ostroy & Starr (1990) have found, that trust does influence behavior in barter exchanges, later researchers have studied off-line (Calvo Porral & Levy-Mangin, 2016) and on-line purchases (Delina & Drab, 2010). Trust also has an impact on organization behavior, e.g. the relationship between a superior and subordinated (Krasman, 2014) or knowledge-sharing (Peralta & Saldanha, 2014).

Standard question to measure how much people trust each other is to ask, "Generally speaking, do you believe that most people can be trusted, or can't you be too careful in dealing with people?" This question was used more than half a century ago by Rosenberg (1956) for the first time. Later Almond & Verba (1963) borrowed the concept and applied it for the first time on a larger scale in 1960. Since then, American National Election Studies included this question in many of its surveys.

However, we must take into account, that the order, in which questions are asked, influences answers to the standard question (Smith, 1997). Respondents tend to opt for the positive answer when the standard question is located after several positively charged questions involving e.g. volunteering, working on community projects or other charitable activities.

Therefore, it is very important to find a suitable place (with minimal influence by previous questions) for the standard question. Alternatively, it is possible to employ an on-line questionnaire tool with randomized order of the questions - something that was not quite possible in the pre-internet era.

According to Wuthnow (1998) and Miller & Mitamura (2003) more serious problem with the standard question is, that its two parts, i.e. "most people can be trusted" and "you can't be too careful in dealing with people" are not really exact opposites but rather two separate questions. When Wuthnow (1998) asked the two questions separately, 50 % to 65 % of respondents were inconsistent in their answers. Therefore, the research presented in this paper uses the two parts of the standard question as two questions.

Trust in innovative management

Article „*The role of trust in organisational innovativeness*“ analyzed the effects of the dimensions of organizational trust on organizational innovativeness in the information and communication technology (ICT) in Finland. Organizational trust was found to consist of both interpersonal and impersonal types of trust. The empirical part of the study showed the relationship between various types of trust and dimensions of organizational innovativeness. The results imply that the impersonal form, in particular, namely institutional trust, has an important role in determining organizational innovativeness (Ellonen, Blomqvist, & Puumalainen, 2008).

Luis Solis (2011) conducted a survey on the role of Trust in innovation and found, that more than 72% of respondents rated “trust issues” as a major obstacle to the free flow of intellectual capital at their organizations. For numerous reasons from compensation and job security to scarcity thinking and retribution, some of our best innovators have decided to check out rather

than pitch in. However, to successfully innovate, organizations must provide and foster an innovation-hospitable environment with the trust at its core. Following five reasons explain, why trust is the essential key to innovation (Solis, 2011):

1. Trust promotes **information sharing**: when employees are sure that their contributions will be appreciated or acknowledged, more sharing occurs
2. Trust yields **abundance** and abundance multiplies the probability of innovation success
3. Trust fuels **access**: best ideas reside in heads, trust is the most effective, least costly way to access potentially valuable contributions
4. Trust makes **'accidents'** frequent: the possibilities for radical Aha! innovations are increased in a safe, criticism-free environment based on trust
5. Trust brings the **speed**: when team-mates trust each other, speed is available.

The aim of this paper is to investigate whether gender and personality traits influence answers to these two questions. It is a replication of previous studies (Sudzina, 2016a; Sudzina, 2016b).

1 Data and methodology

Data were collected in between December 2016 and January 2017 using an on-line questionnaire. Respondents were 264 university students from the Czech Republic, of whom 117 were male and 147 female.

Trust was measured using the following two statements preceded by the question "To what extent do you agree with the following statements?":

- most people can be trusted,
- you can't be too careful in dealing with people

on a 1-5 Likert scale where 1 meant strongly disagrees and 5 stood for strongly agree. For convenience, the former will be addressed in the paper as *trust* and the latter as *mistrust* (both in italics).

Personality traits were measured using Rammstedt & John's (2007) Big Five Inventory-10, i.e. a 10-item version of the Big Five Inventory questionnaire developed by John & Srivastava (1999), and translated to Czech by Hřebíčková et al. (2016). The instruction was to rate "How well do the following statements describe your personality" with statements "I see myself as someone who..."

... is reserved,

... is generally trusting,

... tends to be lazy,

... is relaxed, handles stress well,
... has few artistic interests,
... is outgoing, sociable,
... tends to find fault with others,
... does a thorough job,
... gets nervous easily,
... has an active imagination

on a 1-5 Likert scale where 1 meant strongly disagrees and 5 stood for strongly agree. *Extraversion* was calculated as an average of the 1st (reversed-scored) and the 6th answer, *agreeableness* as an average of the 2nd and the 7th (reversed-scored) answer, *conscientiousness* as an average of the 3rd (reversed-scored) and the 8th answer, *neuroticism* as an average of the 4th (reversed-scored) and the 9th answer, and *openness to experience* as an average of the 5th (reversed-scored) and the 10th answer. Cronbach alphas for personality traits will not be reported since the Big Five Inventory-10 (Rammstedt & John, 2007) was not constructed with this statistic in mind.

The questionnaire contained additional questions that were not used in the analysis presented in this paper.

General linear model was used to analyze the impact of *gender* and five personality traits (*extraversion, agreeableness, conscientiousness, neuroticism, openness to experience*) on trust. Parameter estimates are provided in tables in order to communicate the direction of relationships. Statistical tests have been carried out to match statistical basic set to the analyzed file. A multivariate approach was used. Pearson product-moment correlation coefficient was used to measure correlation. SPSS software was used for the analysis.

2 Results

The correlation coefficient between *trust* and *mistrust* in the sample at hand is -.092 (p-value = .137). In (Sudzina, 2016a), the correlation coefficient was -.339 (p-value < .001), and in (Sudzina, 2016b), it was -.226 (p-value = .003). It confirms what Miller & Mitamura (2003), and Wuthnow (1998) discovered, i.e. that two statements in the standard question for measuring trust are not opposite. If they were opposite, the correlation coefficient would be (close to) -1. Parameter estimates of general linear model explaining *trust* are provided in Table 1. With regards to the explanatory power, $R^2 = .072$, $R^2_{adj} = .050$, p-value = .004. It is similar to

(Sudzina, 2016b) where $R^2 = .066$, $R^2_{adj} = .032$, p-value = .078, and lower than in (Sudzina, 2016a) where $R^2 = .157$, $R^2_{adj} = .138$, p-value < .001.

Tab. 1: Parameter estimates of impact of gender and personality traits on *trust*

Parameter	B	Std. Error	T	Sig.
Intercept	2.471	.561	4.407	.000
Extraversion	-.048	.065	-.737	.462
Agreeableness	.224	.073	3.057	.002
Conscientiousness	-.160	.072	-2.220	.027
Neuroticism	-.058	.058	-.995	.321
Openness to experience	.073	.067	1.090	.277
Gender	-.145	.129	-1.124	.262

Source: Authors

The impact of agreeableness and of conscientiousness are significant. Agreeableness was significant also in (Sudzina, 2016a; Sudzina, 2016b) Conscientiousness was significant in (Sudzina, 2016b) when a bivariate test was used but it had a positive sign.

Parameter estimates for the streamlined model are provided in Table 2. With regards to the explanatory power, $R^2 = .059$, $R^2_{adj} = .052$, p-value < .001. Although there is an extra variable, it is similar to (Sudzina, 2016b) where $R^2 = .045$, $R^2_{adj} = .039$, p-value = .005 and it is lower than in (Sudzina, 2016a) where $R^2 = .133$, $R^2_{adj} = .130$, p-value < .001.

Tab. 2: Parameter estimates of impact of agreeableness on *trust*

Parameter	B	Std. Error	t	Sig.
Intercept	2.230	.363	6.143	.000
Agreeableness	.239	.073	3.286	.001
Conscientiousness	-.153	.071	-2.167	.031

Source: Authors

Parameter estimates of general linear model explaining *mistrust* are provided in Table 3. The model per se is not significant, $R^2 = .020$, $R^2_{adj} = -.003$, p-value = .509. In (Sudzina, 2016b), it

was also the case - $R^2 = .047$, $R^2_{adj} = .012$, $p\text{-value} = .234$; in (Sudzina, 2016a), it was significant - $R^2 = .075$, $R^2_{adj} = .055$, $p\text{-value} = .001$.

Tab. 3: Parameter estimates of impact of gender and personality traits on *mistrust*

Parameter	B	Std. Error	T	Sig.
Intercept	3.291	.552	5.961	.000
Extraversion	-.005	.064	-.077	.939
Agreeableness	-.079	.072	-1.092	.276
Conscientiousness	.007	.071	.101	.919
Neuroticism	.027	.057	.464	.643
Openness to experience	.084	.066	1.271	.205
Gender	.201	.127	1.577	.116

Source: Authors

Bivariate testing did not uncover any significant relationships either. In (Sudzina, 2016a), the impact of agreeableness was significant, and the impact of neuroticism was borderline significant ($p\text{-value} = .098$). There were no significant variables in (Sudzina, 2016b), neuroticism had a $p\text{-value} = 0.107$. Compared to (Sudzina, 2016a; Sudzina, 2016b), $p\text{-value}$ for gender in Table 3 is much lower.

Conclusion

Our paper has researched the impact of gender and personality traits on trust, namely on two measures of trust stemming from the standard trust question used for over half of century. These two measures of trust (*trust* and *mistrust*), though correlated, are not fully opposite to each other, as it was confirmed also here (the correlation coefficient estimated from data at hand is $-.092$, not -1).

Trust was shown to be significantly influenced by agreeableness (positive relationship) and conscientiousness (negative relationship). While the former is consistent with previous research, the latter is rather surprising - because of opposite sign of the relationship. Remaining personality traits and gender were not found to be significant. *Mistrust* was not significantly influenced by any of the independent variables, not even when bivariate testing was used.

Also, the link between trust and management has been documented in the paper – organizational trust (consisting of both interpersonal and impersonal types of trust) being one of the important factors in management.

Acknowledgment

Paper was processed with the contribution of long-term support of scientific work on Faculty of Informatics and Statistics, University of Economics, Prague.

References

- Almond, G. A. & Verba, S. (1963). *The Civic Culture*. Princeton: Princeton University Press.
- Calvo Porral, C. & Levy-Mangin, J. P. (2016). Food private label brands: the role of consumer trust on loyalty and purchase intention. *British Food Journal*, 118(3), 679-696. doi:10.1108/bfj-08-2015-0299
- Delina, R. & Drab, R. (2010). Socio-Economic Aspects of Trust Building for the Electronic Business Platforms. *E&M Ekonomie a Management*. 13(4), 110-122.
- Hřebíčková, M., Jelínek, M., Blatný, M., Brom, C., Burešová, I., Graf, S., Mejzlíková, T., Vazsonyi, A. T., Zábrodská, K. (2016). Big Five Inventory: Základní psychometrické charakteristiky české verze BFI-44 a BFI-10. *Československá Psychologie*, 60(6), 567-583.
- John, O. P. & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In Pervin, L. A. & John, O. P. (Eds.), *Handbook of personality: Theory and research*, 2nd ed. New York, NY: Guilford Press, 102-138.
- Krasman, J. (2014). Do my staff trust me? The influence of organizational structure on subordinate perceptions of supervisor trustworthiness. *Leadership & Organization Development Journal*, 35(5), 470-488.
- Miller, A. & Mitamura, T. (2003). Are Surveys on Trust Untrustworthy? *Social Psychology Quarterly*, 66(1), 62-70.
- Ostroy, J. M. & Starr, R. (1990). The Transaction Role of Money. In Friedman, B., Hahn, F. H. (eds.) *Handbook of Monetary Economics*. Amsterdam: North-Holland, vol. 1, 3-62.
- Peralta, C. F. & Saldanha, M. F. (2014). Knowledge-centered culture and knowledge sharing: the moderator role of trust propensity. *Journal of Knowledge Management*, 18(3), 538-550.
- Rammstedt, B. & John, O. P. (2007). Measuring Personality in One Minute or Less: A 10-Item Short Version of the Big Five Inventory in English and German. *Journal of Research in Personality*, 41(1), 203-212.

Ellonen, R, Blomqvist, K. & Puumalainen, K. (2008). The role of trust in organisational innovativeness. *European Journal of Innovation Management*, 11(2), 160–181.

doi:10.1108/14601060810869848

Rosenberg, M. (1956). Misanthropy and Political Ideology. *American Sociological Review*, 21(6), 690-695.

Smith, T. W. (1997). Factors Relating to Misanthropy in Contemporary American Society. *Social Science Research*, 26(2), 170-196.

Solis, L. (2011). Trust is Everything in Innovation – Innovation Excellence. Retrieved April 20, 2017, from <http://innovationexcellence.com/blog/2011/01/03/trust-is-everything-in-innovation>

Sudzina, F. (2016a). Do gender and personality traits (BFI-10) influence trust? In: *Proceedings of the International Scientific Conference of Business Economics Management and Marketing (ISCOBEMM) 2016*. Brno: Masaryk University, 31-37.

Sudzina, F. (2016b). Do gender and personality traits (BFI-10) influence trust? A replication. *Central European Journal of Management*, 3(1), 47-53.

Wuthnow, R. (1998). *Loose Connections: Joining Together in America's Fragmented Communities*. Cambridge: Harvard University Press.

Contact

Antonin Pavlicek

University of Economics in Prague, Department of System Analysis

W. Churchill sq. 4, Prague 130 67

antonin.pavlicek@vse.cz

Frantisek Sudzina

Aalborg University, Faculty of Social Sciences, Department of Business and Management

A.C. Meyers Vænge 15 2450 København, Denmark

sudzina@business.aau.dk

University of Chemistry and Technology, Prague, Department of Economics and Management

Technická 5, 166 28 Prague, Czech Republic

frantisek.sudzina@vscht.cz