The Impact of Intellectual Capital on Small Business Performance

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Keywords: SSBs, Russia, Human Capital, Relational Capital, Structural Capital, Performance

Abstract: *Intellectual capital is the main source of competitive advantage for small-sized businesses (SSBs) in developed countries. At the same time, developing economies experience the lack of theoretical and empirical knowledge in the aspect of effective intellectual capital usage. This preliminary research covers PCA and PLS techniques applied to a sample of 133 SSBs in Perm Krai, Russia to estimate the role of main components of intellectual capital in the context of a developing economy. The results reveal the only component that influences performance directly – structural capital. The direct impact of other variables was not observed.*

Small-business performance is of interest among researchers due to the contradiction: while small businesses experience resource poverty, they form the basis for economic development (Welsh and White, 1981, p. 18). For transition countries like Russia the role of small business is substantial but at the same time the contribution to GDP is insufficient (Polischuk, 2001). According to the official statistics, the share of the small business sector in Russia's GDP is around 25% and the number of small businesses per 1000 people is two times less than the average in Europe (European Investment Bank, 2013). However, the growth opportunities in the Russian sector of small and medium enterprises are estimated to be significant ('Small and Medium Entrepreneurship in Russia', 2014). Therefore, the study of performance drivers considering small- and medium-sized enterprises is of interest to academic society and has practical implications.

The literature review has shown that technological limitations shorten the useful life of physical assets, so the lasting competitive advantage is offered by the intellectual resources, especially for small ventures. Compared to the developed countries, Russian companies depend on physical capital (Andreeva and Garanina, 2016, p. 398) and has the gap in the intellectual capital endowment. However, their awareness is expected to rise, which may lead to increased intellectual capital usage (Molodchik and Jardon, 2017, p. 6). This motivate us to explore *to what extent intellectual capital (IC) allows Russian small businesses to ensure growth.*

The basic hypothesis tested in this study is as follows, intellectual capital has a positive influence on company's performance. Meanwhile, determination of precise implications requires a detailed consideration of the intellectual capital components, including human capital, relational capital and structural capital.

In terms of human capital, there are two ways of influence: direct and indirect (Kuznetsov, 2012). According to the research held on Spain SSBs data (Jardon and Gonzales, 2013) the

influence is predominantly indirect, for example through structural capital. The hypothesis is the following: company's performance is not sustained by human capital.

The consideration of relational capital as a factor for higher company's results can be summed up in its role in the performance of startups – this type of IC is of value for small businesses (Hormiga et al., 2011). So, it is hypothesized that relational capital contributes to improving SSB's results.

At last, we consider the structural capital. On the assumption that external parties can generate ideas for added value creation (for example, customer feedback), we hypothesize that development of relational capital as a performance factor implies establishing cooperation with customers, suppliers, and competitors (e.g. Narver and Slater, 199).

To verify hypotheses, we conducted a survey of 132 small business entrepreneurs from Perm Krai during late 2016 and early 2017. The questionnaire was built according to Likert scale, measuring the respondents' compliance rate with different statements. Three groups of statements are responsible for different parts of IC such as human capital, relational capital, structural capital and the fourth group shows the dynamic of company's results. The questionnaire was validated by Jardon (2012).

The compiled database includes enterprises employing no more than 100 people or having annual revenues of less than 800 million rubles. The selection was limited to the industries that meet the additional categorizing criteria and act as control variables. Most companies engage in trade and related services (34%). As for revenues and the number of staff members, commonly the considered enterprises employ less than 50 employees (76%) and have annual revenues of up to 5 million rubles (41%).

The research uses a principal component analysis (PCA) to build three components of intellectual capital and a component of company's growth. Then it uses a partial least squares (PLS) technique to test the model. This method is particularly useful on a small sample and relies on a set of latent factors that explain much covariance between independent and dependent variables. Cronbach's alpha has shown the applicability of PLS technique ($\alpha>0.7$). The analysis provides following results (Table 1):

Table 1

The results of model estimation

	PLS
Human capital	0.139
Structural capital	0.358***
Relational capital	0.079
R^2_{adj}	0.227

According to the estimation results, human capital has no direct influence on SSB's performance. Consequently, the first hypothesis was implicitly accepted, despite it was based on the environment of a developed country. The hypothesis about positive effect of structural capital was confirmed. As for relational capital, its components do not have any significant relation with company's results, thus, the hypothesis about relational capital was rejected.

This preliminary research could be extended by considering the indirect influence of some components of intellectual capital as it was discussed in «Human capital, labor productivity, and economic growth» (Kuznetsov, 2012). Given the novelty of the database and the usefulness of the research and strategic recommendations, analytical work should be continued. An alternative way to achieve more reliable results is to overcome main limitations of this research: to increase the number of observations, to use random sampling, to deal with the consequences of heteroscedasticity, to use panel data.

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