

## ***Summary of Ph.D. thesis***

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***Title: Cognitive factors and entrepreneurial opportunity assessment criteria***

### ***Introduction***

The competitive landscape in many industries today is marked by aggressive competition among existing players. The environment is characterized by rapid technological progress and either explosive industrial growth or recession-like conditions. These challenges have only highlighted the need for companies to become more entrepreneurial. Companies around the world are trying to boost their levels of internal entrepreneurship through encouraging their employees to actively search for entrepreneurial opportunities. Corporate Entrepreneurship (CE) is the process by which individuals (intrapreneurs) inside organisations pursue opportunities without regard to the resources they currently control.

Literature identifies three main phases of the entrepreneurial process: the perception and commitment to opportunity, the pursuit of opportunity, and de-commitment. Identifying the right entrepreneurial opportunities seems to be the most challenging part of this process. Company's sustained effort in corporate entrepreneurship depends on individual members' commitment to monitor their environment in search of potential entrepreneurial opportunities. Intrapreneurs often see opportunities where others do not, and anticipate future possibilities that others fail to recognize. In order to understand what promotes or inhibits entrepreneurial activities within organizations, it is important to understand how intrapreneurs evaluate alternative opportunities presented to them.

Pre-nascent intrapreneurs (PNIs) are the focus of this dissertation. PNIs can be defined as individuals engaged in the process of evaluating opportunities before making an exploitation decision. The focus is on PNIs because only after making an opportunity evaluation the venture's actual creation begins within the organization and its founder becomes a nascent intrapreneur, developing a new venture in the traditional sense outlined in the intrapreneurship literature.

Entrepreneurial opportunities will usually be created by factors external to the organization but the ultimate decision to exploit them lies with individuals from within the organizations. Various cognitive processes affect opportunity evaluation, mediated by risk perception, as opportunity evaluation is essentially a cognitive

phenomenon. The cognitive approach is concerned with the entrepreneur's preferred way of gathering, processing, and evaluating information. The quality of decision making, in the risk charged environments that intrapreneurs often face, can be improved with a better understanding of risk, cognitive biases and their role in opportunity evaluation.

In this context there are three key research questions: (1) how cognitive biases influence opportunity evaluation and risk perception of PNIs? (2) how cognitive biases influence entrepreneurial intention of PNIs? (3) are there differences in opportunity evaluation criteria used by venture capital (VC) managers and PNIs?

### ***Research Framework***

The proposed research is based on the premises of the Carnegie School of Organizational Behaviour which assumes that cognitive biases influence the way how organizations are being managed and that individuals are bounded by their rationality. Cognitive biases are common types of mental shortcuts used to make judgments. Based on an in-depth management literature analysis, three cognitive biases were selected for the purpose of this dissertation. The first, overconfidence, refers to the failure to know the limits of one's knowledge. The second, illusion of control, occurs when individuals believe that they can control largely uncontrollable events. Finally, the third bias, the better than average effect occurs when individuals evaluate oneself more favorably than an average peer.

Two research models were created for the purpose of answering research questions (1) and (2). These models reflect the following relationships:

**H1:** Overconfidence has a negative effect on the risk perception that relates to opportunity evaluation.

**H2:** Illusion of control has a negative effect on the risk perception that relates to opportunity evaluation.

**H3:** Better than average effect has a negative effect on the risk perception that relates to opportunity evaluation.

**H4:** Innovativeness has a negative effect on the risk perception that relates to opportunity evaluation.

**H5:** Risk perception has a negative effect on the entrepreneurial intention.

**H6:** Risk perception has a positive effect on opportunity evaluation criteria that relate to information about the market or product, financials and management team.

The third research question relates to the differences in opportunity evaluation, between venture capital managers and pre-nascent intrapreneuers. Although there is extensive literature on how venture capitalists' evaluate opportunities, little is known about entrepreneurs' evaluation process before venture creation. Most of the research on VC's evaluation behaviours has focused on the criteria for evaluating venture proposals e.g. Klonowski (2006) used 26 criteria for conducting his VC's in Poland. These criteria were also used for the purpose of this dissertation. Assuming that VC evaluation criteria exist beyond the VC network, the criteria might also exist as common knowledge among general population including PNIs. Thus the following hypothesis:

**H7:** There will be no significant differences in the rankings of opportunity evaluation criteria used between potential intrapreneuers and venture capitalists.

### ***Statistical Analysis***

The sample for this study consisted of 191 respondents that were working in organizations and studying part time, pursuing among others a Master of Business Administration. This sample was aimed to capture best proxies for pre-nascent intrapreneuers. A questionnaire-based survey was delivered to participants during academic lecture. This study design was used based on Schwenk's (1995) argument that conducting research in a controlled setting, such as the classroom, is especially promising when researching cognitive biases. The survey included questions about participant's risk perception, entrepreneurial intention, cognitive biases and 26 opportunity evaluation criteria.

Three linear regression models were used to test H1-H5. The three models were needed to test the mediation effects of risk perception on entrepreneurial intention. Model 1 regressed risk perception (mediating variable) on the independent variables (overconfidence, illusion of control, better than average effect, innovativeness). Results from Model 1 were also used to test H1-H4. Model 2 regressed entrepreneurial intention (dependent variable) on the independent variables. Model 3 regressed entrepreneurial intention on both the independent variables and risk perception.

Four conditions had to be met in order to verify the mediation effect of risk perception: (1) the independent variables had to affect the mediator in Model 1, (2) the independent variables had to affect the dependent variable in Model 2, (3) the mediator had to affect the dependent variable in Model 3, and (4) the effect of the independent variables in Model 3 had to be less than in Model 2. The same method was used to verify the impact of independent variables and the mediator on the opportunity evaluation criteria.

In order to verify H7 Rho Spearman analysis was used to compare answers provided by respondents who were asked to rank 26 opportunity evaluation criteria and results obtained by Klonowski from his VC study in Poland.

### ***Results***

The mediating effect of risk perception has not been confirmed for any of the proposed models. However a direct positive relationship was identified between risk perception and opportunity evaluation criteria relating to the information about the financials and product or market. The results also showed that the higher the levels of innovativeness and better than average effect, the more attention intrapreneurs were paying to opportunity evaluation criteria relating to product or market information. Finally the study results delivered new insights into the mechanics of entrepreneurial intention. A positive correlation was identified between better than average effect, innovativeness and the entrepreneurial intention. Results of the Rho Spearman analysis for H7 showed that potential intrapreneurs have not institutionalized VCs criteria as common knowledge and that entrepreneurial opportunity evaluation criteria were used in a different way. Implications for the business practice and new insights to management theory were discussed.

### ***Dissertation Structure***

The dissertation comprises of four chapters. The first chapter describes management literature as the methodological background of the dissertation. This chapter discusses different approaches to management theory. The cognitive approach in strategic management has been emphasized. This served as a starting point for further analysis relating to the decision-making process by pre-nascent intrapreneurs. An important element of this chapter is the definition of corporate entrepreneurship and the impact of cognitive biases on evaluation of entrepreneurial opportunities.

The second chapter describes opportunity evaluation process based on the same set of criteria that venture capitalists use to evaluate business plans. Based on an in-depth literature analysis, a research gap was identified. This chapter introduces a definition of venture capital and the importance of a business plan in the VC investment process. The final part of this chapter presents two models. The first model was introduced by Kuratko et al. and refers to the management of entrepreneurial processes within an organization. The second model was created by the author for the purpose of this dissertation. This focuses on the individual dimension of the entrepreneurial process which can be initiated by individuals from within the organization. It shows the influence of selected personal factors and cognitive biases on the various stages of the entrepreneurial process. This model emphasises the role of the business plan in the entrepreneurial process.

The third chapter presents research hypotheses and research models. Literature analysis is presented which aim was to operationalize variables defined in the research models. First research model assumes the impact of cognitive biases on the risk perception and the level of entrepreneurial intentions within organizations. Second research model assumes an influence of selected cognitive biases and innovativeness on opportunity evaluation criteria (business plan evaluation criteria). The third chapter concludes with a comparative analysis of the importance paid to business plan assessment criteria between PNIs and venture capital managers in Poland.

The fourth chapter begins with a description of the research methodology used. This chapter presents the results of statistical verification of hypotheses that were derived from the research models. Multivariate linear regression analysis in IBM SPSS 20 was used. The results were interpreted and compared to previous studies. The chapter finishes with a summary of the results, recommendations for practitioners and limitations related to the interpretation of the results.