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Individual Entrepreneurial Behavior in Croatian IT Firms: The Contribution of Strategic Thinking Skills

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Abstract

This article addresses the contribution of strategic thinking skills in explaining individual entrepreneurial behavior in Croatian IT firms. Strategic thinking skills were assessed according to entrepreneurs' use of systems thinking, reflecting, and reframing. Individual entrepreneurial behavior was measured by their inclination towards risk-taking, innovativeness, and proactiveness. Our study of 136 IT entrepreneurs in Croatia confirmed that entrepreneurs with a more developed use of strategic thinking skills exhibit stronger entrepreneurial behaviors. In fact, proactiveness as an element of individual entrepreneurial behavior had a strong relation to all components of strategic thinking skills. Systems thinking as an element of strategic thinking skills showed to be a predictor of all individual entrepreneurial behavior elements.

Keywords: entrepreneurs, individual entrepreneurial behavior, strategic thinking skills, strategic entrepreneurship, proactiveness, systems thinking, Croatia, IT

1. Introduction

In the traditional Schumpeterian view, entrepreneurship was viewed as a phenomenon occurring at individual level. Fueled by the work of Miller [72], the focus shifted from individual actions to processes at firm level, which became known as entrepreneurial orientation (EO) [72], [29], [66], [52], [89]. Hence, EO is seen as the extent to which a firm exhibits entrepreneurial behaviors. Even Miller [71] suggests that it is important to connect EO with current theories of strategy [71:13], and to work on neglected paths [71:16].

One of these paths is found in the growing number of researchers who argue that the term entrepreneurship can be applied in different contexts and at different levels e.g. firms are not the only ones that are entrepreneurial. This argument has not been lost even against the major proponents of EO [26], [66], [72]. They, as well as other scholars [15], [40], [74], recognize that small businesses are merely extensions of their founders' or CEOs' entrepreneurial behaviors.

Another neglected path was pursued by Ireland, Hitt, and Sirmon [102] and lies in the need to simultaneously identify and exploit elements of both entrepreneurial and strategic perspectives. Namely, for entrepreneurs to be effective in the search of ideas for gaining and sustaining their competitive advantage and business development, they need strategic management insights. We further their argument by suggesting that the shift from strategic planning perspectives to strategic thinking skills (STS) perspectives is a particular segment of this neglected path.

Entrepreneurship scholars have been particularly interested in how entrepreneurs think. This interest is seen in studies that have been conducted to determine how entrepreneurs think differently from non-entrepreneurs [19], [78], [77], from other entrepreneurs (e.g., [4], [5], [76]), and how the entrepreneurial context of high uncertainty, ambiguity, time pressure, emotional intensity, and/or high risk affects decision making [7], [19], [80]. However, the entrepreneur's use of STS, as a capacity enhancer for strategically developing businesses, has not yet been investigated in relationship to individual entrepreneurial behavior. This article focuses on bridging this gap in research.

2. The Aim of the Study

While prior research suggests conceptual and empirical linkages between entrepreneurs and various manifestations of thinking; what remains unexplored is whether the use of strategic thinking skills by entrepreneurs is related to their individual entrepreneurial behavior? The contribution of the present study is twofold.

Firstly, the answer to this question contributes significantly to the understanding of the puzzle of the way entrepreneurs think. More precisely, it contributes to developing an understanding of the mental processes which enable researchers to build a grounded foundation for systematic explanation of the individual's role within the process of entrepreneurship [88], [77], [118]. For instance, many studies are built on the premise that founders and entrepreneurs 'think' differently than other individuals or business executives [19]. It is far less clear where this 'cognitive difference' originates from [3], [6], [35]. The answers to our research questions provide insight into this previously understudied element of cognitive processes and entrepreneurial behavior.

Secondly, it contributes to the emerging field of strategic entrepreneurship, by building a bridge between and thus integrating two core concepts: individual entrepreneurial behavior and strategic thinking [59]. These two concepts are crucial as they play an important role in the transformational point from a small start-up to a growing sustainable business. By focusing on the relation between the entrepreneur's ability to employ STS and individual entrepreneurial behavior, our research fills the gap in the research by explaining the way entrepreneurs change, develop and adjust their thinking when leading a more mature, developed business.

The remainder of the paper is divided into three sections. In the first section, we review the research to provide the background for our hypothesis. In the second section, we report on the development of our sample of information technology (IT) entrepreneurs in Croatia, the measures we used, and the results of our hypothesis testing. In the final section, we describe how our findings support or disconfirm previous research, identify interesting directions for future research, and discuss potential implications for researchers, and entrepreneurs.

3. Literature Review and Theory Development

Entrepreneurial orientation. The characteristic of entrepreneurial orientation (EO) as a firm level behavior has been conceptualized for some time as the extent to which a firm exhibits entrepreneurial behavior [107]. For instance, Miller [72] identified three dimensions – risk-taking, innovation, and proactiveness – that in practice formed a unidimensional construct which he called a firm's entrepreneurial orientation. His theoretical contribution was followed by Covin and Slevin's [27], [28], [29] operationalization of the constructs through a self-response nine item instrument. Lumpkin and Dess [66] added to construct development by suggesting two additional dimensions - competitive aggressiveness and autonomy – and emphasized that EO could be viewed as multidimensional since each dimension can act individually as well as in combinations.

While some researchers are reluctant to consider using these dimensions in describing individual entrepreneurial orientation, even Miller points out that in small firms (less than 500 employees), entrepreneurial strategic orientation is typically centralized in the hands of one or a few owner-operators who have a "feel for their business", who have shorter time horizon

and focus more upon operating matters and strong locus of control. This individual aspect of the role is also supported by Mintzberg [75] who said that in the entrepreneurial mode, power rests with one man capable of committing the organization to bold courses of action by ruling through fiat, relying on personal power and sometimes on charisma. It is also reflected in Miller and Friesen [69] who said that EO captures the nature of the innovative strategy, which is often determined by executives on the basis of their goals and temperaments.

Even with the early affirmations, the characterization of EO at individual level did not exist until recently; however, it is receiving increased conceptual attention [55], [57], [61], [87], [60], [64], [99]. Empirical work on the individual level is also rising among entrepreneurship scholars [17], [55], [64], [58], [67], [79], [99], [100], [89].

Individual Entrepreneurial Behavior (IEB). Entrepreneurial behavior has been defined as the behavior used in identifying and exploiting opportunities, and creating and developing new ventures [14]. Entrepreneurial behavior is also increasingly recognized as a precursor to social change and facilitates innovation within emerging organizations [36] and established organizations [60]. The work of these scholars signifies the importance of refocusing research attention towards concrete and observable human action in venture creation and emergence [13].

There are three major streams of research concerning entrepreneurial behavior at the individual level. One stream follows the path of Kolman, Christofor, and Kuckertz [57], Bolton and Lane [17] and Bolton [16] by directly transforming entrepreneurial orientation constructs to individual level entrepreneurial orientation (IEO) of individual entrepreneurs, members of the top management team (TMT), non-managers, and students. While the proponents of this stream identify it with the term Individual Entrepreneurial Orientation, they are in fact using Miller, Covin and Slevin's dimensions of risk-taking, innovativeness, and proactiveness to measure individual entrepreneurial behavior. Hence, we refer to this path as the individual entrepreneurial behavior (IEB) path.

Another research stream attempts to build an explanation by viewing intention as the best predictor of any planned behavior including entrepreneurship [119]. Better understanding of intentions' antecedents brings superior predictive validity of entrepreneurship than either individual (for example personality) or situational (for example, employment status) variables [92]. Personal and situational variables typically have an indirect influence on entrepreneurship through influencing key attitudes and general motivation to act.

The third research stream focuses on middle management [60] and non-managerial levels of the organization [79]. While classified as an individual level application, the end result is still an interpretation of firm based EO of middle or non-managerial levels of management.

Our study follows the Kollman, Bolton and Lane path and measures entrepreneurial behavior at individual level. We are aware that entrepreneurial behavior at firm level is much more than just the sum of individual inclinations. We argue, as do Poon et al. [87], Baum and Locke [8], Baum et al. [9], Markman and Baron [68], Rauch and Frese [90] that the entrepreneurial business setting is enacted by, and resembles, the personal inclinations of founder/owners or members of the TMT. In entrepreneur led small firms, the behaviors of the firm and that of the entrepreneur are likely to be the same.

This study concentrates on the IEB of individual entrepreneurs who serve IT firms either as their founder or CEO. We define IEB, in line with the emerging research, as the behaviors entrepreneurs exhibit; characterized by their innovativeness, proactiveness, and risk-taking [72], [27], [91], [87]. These behaviors are described in Table 1. Descriptions of the elements of individual entrepreneurial behavior.

Element	Description
Innovativeness	Innovativeness is the predisposition to support new ideas, novelty, creative processes, and experimentation which may result in opportunity recognition, resource allocation, new products, technological leadership, and services. Innovativeness has been measured as a function of the

	willingness of managers to suspend former beliefs in order to explore new alternatives and to reward experimentation [107].
Proactiveness	Proactiveness is the predisposition to anticipate future environmental changes and demand, find and exploit opportunities, and act upon them by launching new products, services, and technologies ahead of competitors.
Risk-Taking	Risk-taking is the predisposition to take bold actions by committing resources to new projects in the pursuit of an opportunity even when the project has an uncertain outcome.

Source: Stewart, 2014, p. 37

Table 1. Descriptions of the elements of individual entrepreneurial behavior

Strategic Thinking Skills. A review of the main research streams in strategy formulation literature shows that "thinking" has always been one of the least studied aspects of strategic processes and almost ignored in most academic conceptualizations [108], [111]. This lack of inquiry is particularly an issue in turbulent and complex conditions which force managers at increasingly lower levels of organizations to acquire the skill [11], [42], [63], [38], [110], [117]. The general conclusion is that strategic thinking has been under-theorized. Yet, this lack of research is understandable because STS are elusive, due, in part, to the difficulties in determining and measuring the cognitive components of strategic thinking [93]. Due to the fact that it is hard to articulate strategic thinking, there are many interpretations and mystifications about the content, methods, and ways of learning and improving this skill.

Strategic Thinking Skill	Description
Systems Thinking	Systems thinking refers to the leader's ability to see systems holistically by understanding the properties, forces, patterns and interrelationships that shape the behavior of the system, which hence provides options for action.
Reflecting	Reflecting refers to the leader's ability to weave logical and rational thinking, through the use of perceptions, experience and information, to make judgments on what has happened, and the creation of intuitive principles that guide future actions.
Reframing	Reframing refers to the leader's ability to switch attention across multiple perspectives, frames, mental models, and paradigms to generate new insights and options for actions.

Source: Pisapia, Reyes-Guerra & Coukos-Semmel (2005).

Table 2. Description of strategic thinking skills.

The first attempts at defining the term and the main elements of STS came from Bonn [18], Liedtka [62], Jacobs [51] and Mintzberg [73]. Sloan [103] identified five critical attributes of strategic thinking: imagination, broad perspective, juggle, no control over and desire to win. Jelenc [53], Jelenc and Swiercz [54] proposed systems thinking, hypothesis generation and testing, focused intent, time, professional capability, conceptual flexibility, future vision, political sensitivity, intuition and uncertainty/paradox/disequilibrium as the essences of STS. Most of these skills are found in Pisapia [83] and Pisapia, Reyes-Guerra, and

Coukos-Semmel's [86] STS (systems thinking, reframing, and reflection) displayed in Table 2.

4. The Relationship between Strategic Thinking and Individual Entrepreneurial Behavior

Strategic thinking is a rather distinctive construct that can be used at individual or at organizational level. When focused on the individual level, it rests on the assumption that effective leaders think differently than less effective leaders (e.g. [24], [37], [44], [45], [77], [82], [83]).

Entrepreneurship involves the nexus of two phenomena: the presence of an opportunity and the presence of enterprising individuals who can 'see it' and are capable enough to respond to it [114], [99]. Research indicates that successful entrepreneurs as well as strategic leaders see opportunities in situations where others see risks [94], [96], [20]. Why do some people, and not others, discover particular opportunities? Baumol [10] suggests that entrepreneurs cannot 'see it' if they make mechanical calculations in response to alternatives imposed on them. To 'see it', they must be able to identify new means-ends relationships. Unfortunately, history tells us that an ability to see new means-ends relationships is a difficult task as in the examples of Hewlett-Packard not recognizing the merits of the graphical organizer, Kodak's unwillingness to change to the digital format until it was too late or Nokia and Swiss watch makers sticking with their successful platforms until forced to change.

Three types of reasoning (the action of thinking about something in a logical, sensible way) have been identified in the research in this field [95], [83], [84] causal, effectual and strategic. All three types are a way of thinking and acting in order to predict, control, or find the future.

The traditional view of entrepreneurship research is based on rational decision-making models seeking to predict the future and uncover competitive advantages. In fact, Bird [15] and Drucker [33] claimed that most opportunities were discovered through purposeful search procedures. These models use causal reasoning which begins with a given goal, competitive analyses of capabilities, threats and opportunities and ends in predicting the future. Causal reasoning is useful when the future is predictable and the environment is stable. In such environments causal reasoning helps us choose. Causation underpins traditional strategic planning processes.

Effectual reasoning, discovered and championed by Saras Sarasvathy [95], argues that entrepreneurs try to control their future rather than predict it. Bricolage and improvisation are at the center of effectual reasoning. Effectual thinkers start with what they have, who they are, what they know, and who they know. Then, as Sarasvathy suggests, entrepreneurs determine their goals according to the resources they possess, after which they determine the down side of their actions and the affordable loss figure to manage their risk [30]. If they can afford it, they pursue the opportunity by getting customers and income early in the process and by networking with self-selected stakeholders to spread risk to others [22].

Whereas the causal thinker believes that the future is predictable and the effectual thinker believes the future can be controlled, the strategic thinker believes that only the shape of the future can be predicted. Thus the strategic thinker envisions potential futures, devises new strategies to move the organization towards the evolving future, while creating horizontal alignment internally. Strategic thinkers use strategic reasoning which blends causal and effectual logic and adds synthesizing, creative and divergent thought processes. The strategic way of reasoning enables intelligent opportunism, openness to new experiences, seeing the organization and environment holistically [18], [97] which leads to an intentional but emergent strategy [39] that focuses its attention on the gap between current reality and the intent for the future. The key questions strategic thinkers ask are: "What if" and "If ... then." The outcome of strategic thinking is an integrated perspective, invention, and a sense of direction. Systems thinking, reframing, and reflecting are key skills of strategic thinkers [83].

While there are clear differences between causal and effectual reasoning, corporate executives, even those in Sarasvathy's study group, use both forms of reasoning. They also

apply strategic reasoning which we position in the middle of the effectuation-causal continuum. The importance of STS for entrepreneurs goes pretty much unchallenged because it deals with sensing future opportunities and making judgmental decisions to capture those opportunities [21], [32], [46] which results in assessing, estimating and inferring the likelihood of an event to occur, establishing a preferred future to fit to the environment and choosing courses of action [43].

From the preceding discussion we extracted the hypothesis tested in the study:

> Entrepreneurs who use strategic thinking skills more often exhibit more individual entrepreneurial behavior than those entrepreneurs who use strategic thinking skills less often

5. Methods

This study employed a quantitative non-experimental design. Strategic thinking skills—reflection, reframing and systems thinking—are selected as the independent variables. Individual entrepreneur behavior (IEB) serves as the dependent variable.

In order to test our hypothesis, we constructed a sample of leading information technology (IT) firms operating in Croatia. Croatia is a transitional European country which has recently joined the EU and is still confronted with a great deal of problems due to the economic crisis. A high unemployment rate in combination with the lack of investment and low industry capacity made entrepreneurship a strategic activity promoted by state policy. IT is an industry with a low entrance barrier, propulsive, and knowledge-intensive. They operate in the global business context, following newest trends and meeting not just national, but also international demand for their products [113]. Therefore, IT firms in Croatia are nested in the national business context serving global markets and facing international competitors.

The IT sector employs only 9.20% [106]of the total number of employed people in Croatia, yet it accounts for 12.4% of the Croatian national income and 13.4% in the total value of export. According to the recent Croatian Strategy of Industries 2014-2020 (draft version), the population of our sample (code J62) is positioned as the “driver”, playing a crucial role in raising competitiveness among Croatian industries and economy.

6. Sample and data collection

The list of the IT sector firms operating in Croatia was generated from the ats database according to the status of firms in March 2014. The list consisted of registered firms (NACE Rev. 2) with the dominant code of dealing with computer programming, consultancy and related activities (code 62). The firms dealing with IT trade were excluded from the list. The remaining sample consisted of 2,129 firms. Contact data from the database were updated by the data from the Croatian Court Register. After filtering the non-active firms due to legal reasons, the final sample consisted of 1,465 IT firms actively doing business in Croatia.

In each of the firms we chose a respondent holding a top management position within the firm and in most cases it was the owner and the founder of the small-sized firm. We communicated with them directly via their e-mail. We sent a letter explaining the purpose of the study and asked them to respond to our on-line questionnaire. The hyperlink to our questionnaire, created by Google Docs, was embedded in the letter. We contacted each potential respondent twice in the period April – May 2014. The second reminder was sent 15 days after the initial e-mail. We received 146 valid responses. After applying the two validity indicators recommended by Pisapia (2009) for self-report instruments, 10 cases were excluded from the study due to the degree of response inconsistency. Finally, we ended up with 136 cases to analyze, representing 9.2% of the total population of IT firms in Croatia. The demographic results of the sample are presented in Table 3.

The gender distribution of the sample resembles the trend in the STEM field in Croatia (16,4% of IT higher education graduates are women in Croatia in 2013, Croatian Bureau of Statistics, 2015). The average respondent is male, between 41 and 50, with a bachelor's

degree, previous entrepreneurial experience, 6-19 years of working experience, no education abroad, running a firm with up to 10 employees.

	Number (N)	Percent (%)
Gender		
Female	16	12
Male	120	88
Age		
-30	9	7
31-40	47	34
41-50	50	37
51-60	28	21
61-	2	1
Education		
High school diploma	29	21
Bachelor's degree	85	63
Master's degree	18	13
PhD degree	4	3
Previous entrepreneurial experience		
Yes	77	57
No	59	43
Work Experience		
-1 year	5	3
1-5 years	33	25
6-19 years	71	52
20- 29 years	26	19
=>30 years	1	1
Education abroad		
Yes	31	23
No	105	77
Employees		
0	8	6
-10	99	73
11-50	18	13
51-250	5	4
251>	6	4

Source: authors

Table 3. Sample demographic results (N=136).

7. Measures

Two scales were used to measure individual entrepreneurial behavior and STS: Bolton and Lane's [17] IEO instrument and Pisapia's [83] Strategic thinking questionnaire (STQ). Both scales were translated from their original language (English) into Croatian. Then, they were back translated to ensure that all items were adequately formulated.

Independent variable. Strategic thinking skills served as the independent variable. It was measured through administration of the strategic thinking questionnaire (STQ). The STQ is a self-report instrument that includes two indicators: (a) omission rate (number of omitted responses); and (b) an inconsistency index (degree of response inconsistency) to overcome validity issues with such instruments. If scores on the paired items deviated more than one point, the case was eliminated from the analysis. It also includes reverse scored items to reduce the danger of patterned answers.

The STQ asked respondents to rate how often they use systems thinking, reframing, and reflecting skills when confronted with problems, dilemmas, and/or opportunities on a five point Likert-type scale. Example of individual constructs included items such as: reflecting – "I consider how I could have handled the situation after it was resolved", reframing - "I suspend my judgment until I gathered all the information," systems thinking – "I look at the

'Big Picture' in the information available before examining the details." The scores for STS, representing one's cognitive agility, are achieved by adding up the three skills. Average to above average scores on the STQ suggest that the respondent is most likely to possess and use the skill. The higher the score, the more positive the prediction for effective functioning in meeting environmental demands and pressures. An inability to be an effective strategic thinker is suggested by low scores.

The test items have been translated and used successfully in different countries (Argentina, Canada, Turkey, Mainland China, Hong Kong, Malaysia, Iran, India, and the USA). The STQ was psychometrically validated by Pisapia, Morris, Cavanaugh, and Ellington [85]. Using Hu and Bentler's [47] recommendations, the results of the validation study were that they fit the data well: $x^2 = 335.91$ with df = 75; CFI = 0.97; RMSEA = 0.056; and SRMR = 0.035. Subscale alphas ranged from reframing (0.73), reflection (0.76), to systems thinking (0.77).

In our study we were able to extract the three hypothesized STS [86]. However, reframing failed to meet the .70 standard [81] and should be interpreted accordingly. We report the reliability estimates (Cronbach's alpha, factor loading and variance extracted) for the constructs in Table 4.

Items	Factors		
	Systems Thinking	Reflecting	Reframing
Reflect 1	-	.838	-
Reflect 2	-	.590	-
Reflect 3	-	.553	-
Reflect 4	-	.499	-
Reflect 5	-	.498	-
Systems 1	.815	-	-
Systems 2	.729	-	-
Systems 3	.469	-	.247
Systems 4	.459	-	-
Systems 5	.455	-	-
Reframe 1	-	-	.663
Reframe 2	-	-	.505
Reframe 3	-	.208	.486
Reframe 4	-		.308
% of Variance Explained	30	12	10
Cronbach α	.74	.76	.62
Scale α=. 81			

N=136. Extraction Method: Principal Axis Factor Analysis. Rotation Method: Oblimin rotation. Rotation converged in 6 iterations. Suppressed values less than 0.20. Bartlett's Test of Sphericity sig. 0.000. Kaiser-Meyer-Olkin Measure of sampling adequacy: 0.76. Variance explained 52 percent.

Source: authors

Table 4. Factor analysis of the strategic thinking skills on the Strategic Thinking Questionnaire.

Dependent variable. Individual entrepreneurial behavior served as our dependent variable and was measured by Bolton and Lane's [17] IEO instrument. Their scale development included rewording the Lumpkin and Dess's [66] items at individual rather than organizational level. They retained the five point Likert scale. The instruments asked respondents to rate how often and in which situations they exhibit IEB.

Sample items include: risk-taking - "I take bold action by venturing into the unknown", innovativeness - "I prefer to try my own unique way when learning new things rather than doing it like everyone else does", proactiveness - "I usually act in anticipation of future problems, needs or changes". The higher the respondent's score on the instrument, the more positive is the prediction of his/her use of individual entrepreneurial behavior.

They administered the IEO to 1,102 students at a USA University. By performing a principal component factor analysis with promax rotation, three distinct factors emerged which accounted for 60 per cent of the total variance. Two variables, autonomy and competitiveness, were removed due to loading problems. Reliability testing of the remaining 3 constructs (10 items) produced reliability scores above the .70 standard [81]. Construct validity was reported. Confirmatory factor analysis was not reported. In a follow up study, Bolton [16] administered the IEO to 340 entrepreneurs. Again the three factors emerged which accounted for 69.9 percent of the variance, and Cronbach alphas were all above .77. Confirmatory factor analysis was not reported.

	Factors		
Items	Risk-taking	Innovativeness	Proactiveness
RISK1	.746	-	-
RISK 2	.743	-	-
RISK 3	.720	.254	-
RISK 4	.705	.254	-
INNOV 1	-	.902	-
INNOV 2	.219	.765	-
INNOV 3	.248	.706	-
PROACT 1	-	-	.830
PROACT 2	-	-	.757
PROACT 3	.320	-	.732
% of Variance Explained	33	18	12
(Cronbach α)	.75	.75	.68
Scale α=. 76			

N=136. Extraction Method: Principal Component Analysis. Rotation Method: Varimax rotation. Rotation converged in 5 iterations. Suppressed values less than 0.20. Bartlett's Test of Sphericity sig. 0.000. Kaiser-Meyer-Olkin Measure of sampling adequacy: 0.73. Variance explained 63 percent.

Source: authors

Table 5. Factor analysis of the individual entrepreneurial behavior items.

In our study, we were able to extract the three hypothesized factors: risk-taking, innovativeness and proactiveness which accounted for 63% of the variance. Sample size restrictions prevented us from applying confirmatory factor analysis protocols. However, construct validity and reliability were achieved as seen in Table 5.

8. Results

We hypothesized that entrepreneurs who score higher on strategic thinking skills will score higher on individual entrepreneurial behaviors than those entrepreneurs who score lower on strategic thinking skills. This hypothesis was tested in two steps. First a correlational analysis was conducted. We report the means, standard deviations and correlations for independent and dependent study variables in Table 6.

Pisapia [83] suggests and applies a rule of thumb to interpret the use of STS. Scores of 4 and higher suggest a strong ability to use the skill. Scores between 3.1 and 3.9 suggest an average ability to use the skill. Scores below 3.1 suggest a weak ability to use the skill. Applying this rule to results suggests that the studied entrepreneurs possessed a strong ability to use systems thinking (M = 4.05) and an average ability to use reflecting (M = 3.95), reframing (M = 3.72), and overall STS (M = 3.91).

As predicted, elements of STS were correlated with each other but not to the extent that would raise concerns of multicollinearity [109]. A similar result was achieved in the correlations of the elements within individual entrepreneurial behavior. Proactiveness and innovativeness were correlated with risk-taking; whereas proactiveness was not correlated with innovativeness.

As seen in the Table 6, overall IEB was positively associated with the use of reflecting, systems thinking, and overall STS. This means that entrepreneurs who use these thinking skills more often also exhibit individual entrepreneurial behaviors more often than those entrepreneurs who use these thinking skills less often.

		Mean	S.D.	1	2	3	4	5	6	7
Independent Variables										
1	Reflecting	3.95	.56	-						
2	Reframing	3.72	.46	.480**	-					
3	Systems Thinking	4.05	.46	.648**	.550**	-				
4	STS	3.91	.39	.884**	.749**	.876**	-			
Dependent Variables										
5	Risk-taking	3.50	.83	.057	-.143†	.201*	.065	-		
6	Innovativeness	3.66	.68	.043	-.135	.091	.017	.515**	-	
7	Proactiveness	4.06	.61	.310**	.362**	.442**	.434**	.195*	.117	-
8	IEB	3.74	.51	.171*	.006	.321**	.213*	.838**	.764**	.548**

* p < .05, ** p < .01

Source: authors

Table 6. Descriptive statistics and correlation of study variables (N=136).

Furthermore, proactiveness was positively associated with reflecting, reframing, systems thinking, and overall STS, meaning that the more often the entrepreneurs use these strategic thinking skills the higher is their score on proactiveness. Systems thinking and reframing were positively associated with risk-taking, meaning that the more often the entrepreneurs use these skills the more risk they are willing to assume.

The hypothesis was subjected to a second analysis to determine the contribution of each of the STS in predicting elements of individual entrepreneurial behavior. Table 7, presents the results of the linear regression used to test the ability of STS to predict individual entrepreneurial behavior.

Independent Variable	**Dependent Variables**			
	Risk-taking	Innovativeness	Proactiveness	IEB
Reframing				
β	-.115	-.0073	0.349	0.043
Adjusted R^2	0.006	-.002	0.116	-0.006
F	F(1,125) = 1,797	F(1,125) = 0.720	F(1,125) = 18.641 **	F(1,125) = 0.254
Reflecting				
β	0.044	-0.007	0.271	0.124
Adjusted R^2	-0.006	-0.11	0.066	0.008
F	F(1,125)=0.906	F(1,125) = 0.018	F(1,125) = 10.604**	F(1,125) = 2.109
Systems thinking				
β	0.292	0.174	0.341	0.367
Adjusted R^2	0.079	0.023	0.110	0.128
F	F(1,125) = 12.515 **	F(1,125) = 4.162*	F(1,125) = 17.687**	F(1,125) = 20.816 **
Strategic thinking				
β				
Adjusted R^2	0.085	0.030	0.410	0.220
F	0.000	-0.007	0.162	0.041
	F(1,125) = 0.978	F(1,125) = 0.120	F(1,125) = 27.080**	F(1,125) = 6.788

* p < .05, ** p < .01

Source: authors

Table 7. Linear regression of reframing, reflection, systems thinking, and individual entrepreneurial behavior (n = 136).

As presented in Table 7, the use of STS by entrepreneurs predicts proactiveness (R^2 = .16). Cohen [23] would classify these results as having medium practical significance. At the subscale level, the use of STS produced more statistically significant effects. For example, systems thinking statistically predicts risk-taking (R^2 = .08), innovativeness (R^2 = .02), proactiveness (R^2 = .11), and overall STS (R^2 = .13). Reframing (R^2 = .12) and reflecting (R^2 = .07) predicted only entrepreneurial proactiveness. Thus, we can state that overall STS, as well as its elements, are good predictors of the proactiveness of entrepreneurs in the sample. Systems thinking produced statistically significant results in all three of the individual entrepreneurial behaviors making it the most powerful predictor of IEB.

Based on the data presented in Tables 6 and 7, the hypothesis that entrepreneurs who use strategic thinking skills more often will exhibit more individual entrepreneurial behaviors than those using strategic thinking skills less often was confirmed.

9. Discussion

The results of the correlation analysis of STS and IEB show that STS has a positive correlation with IEB Lumpkin and Dess [65], [66] and Miller [71] suggested that elements of entrepreneurial orientation may vary independently, depending on the environmental and organizational context. Therefore, each sub construct of the STS and IEB constructs in the context of Croatian IT firms were analyzed separately.

Systems thinking is a predictor of all elements of IEB. It is the predictor of risk-taking. Risk-taking is associated with both the reduced perception of risk [101] and a higher tolerance for risk [112]. In this case, the better the knowledge of systems the higher is the capacity for risk-taking. The implication of this result in terms of improving and promoting entrepreneurial policies is to educate and train entrepreneurs for example, within start-ups programs about the ways in which a system could be depicted, understood and the way in which it operates. Understanding the forces within the system, whether it is political, economic or monetary, and the conditions in which the system operates makes it easier for entrepreneurs to take higher risks in running their projects.

Systems thinking is the predictor of innovativeness. In fact, unlike risk taking and proactiveness, innovativeness seems to correlate only with systems thinking. Systems thinking supports knowledge in setting relations between factors influencing both the supply and the demand and as such, suggests ways in which the entrepreneurs realize the gap, need, and opportunities in front of them. Innovativeness is also about finding new combinations and new relations that could exist, work and sell on the market.

Systems thinking produced statistically significant positive associations with proactiveness resulting in a medium practical effect. Proactiveness is recognized as the ability to actively seek and suggest new options, ways, methods, and resources, which happens to be the key point of entrepreneurship. Proactiveness, as the initiative taken by the entrepreneur, implies first-mover activities as introducing new product/service on the market [72], [27], [28] acting opportunistically and exploiting market opportunities [66], anticipating opportunities and forward-looking initiatives [48]. Antecedents are knowledge, learning and past experiences [12], [25], [98], [99], [107]. Systems thinking, as the area in which the combinations, processes and interrelatedness are already known, serves as a foundation for proactiveness as it enables the entrepreneur to contribute with new ideas and suggestions based on the pre-existing knowledge. However, as seen in the data all three STS components enable higher levels of entrepreneurial proactiveness. Reflecting and reframing are additional ways of reaching higher level of proactiveness; through new insights from current experience and by questioning assumptions and shifting mental models.

10. Limitations, implications and conclusion

Before our concluding remarks, certain limitations inherent to the design we employed should be noted. Despite Spector's [105] claim that self-report data is not as limited as commonly expected, and the lack of universal consensus, there are still indications of a tendency for self-

reported data to be inflated [2], [41], [104], [115], [116]. Therefore, we dealt with this condition in the design of the STQ and the IEB which were created to elicit individual preferences and behaviors without leading the respondent towards or away from any particular selection. It contains safeguards identified in previous paragraphs to overcome the effects of self-reporting. Based on our experience in applying these instruments, we are confident that the data, as it relates to the identification of STS and entrepreneurial behavior, can be depended upon.

Furthermore, we recognize that there are multiple determinants of entrepreneurial behavior. Strategic thinking skills are but one. Other determinants include national and organizational culture, as well as individual factors such as traits, age, gender, roles, organizational type, rules, and policies which we did not analyze. Furthermore, in the current research, our sample size did not reach a level appropriate for performing CFA and SEM statistics. For the reasons specified in the above two paragraphs, some caution is called for in generalizing our findings.

Future research would benefit in analyzing a larger sample size in the IT sector and in comparing it to some other industry, equally important and present within the same country. There are several paths for research. One is to follow with the IEB scale and see the relation among elements of IEB and STS and the second is to use EAO (Entrepreneurial Attitude Orientation) instead of the EAO in order to validate the scale within the Eastern European environment. In a future research setting it would be interesting to see how the life-long cycle of entrepreneurship influences the relationship between IEB and STS.

The advantage of this research lies in the fact that we examined a neglected path in entrepreneurial research – the relationship between STS and individual entrepreneurial behavior. Our findings support Baron [4] [5] and Mitchell et al.'s [76] findings that entrepreneurs think differently from one another. In our study, entrepreneurs who used strategic thinking skills more often also exhibit individual entrepreneurial behaviors more than those entrepreneurs who use strategic thinking skills less often. Thus, our hypothesis was confirmed by the data. In particular, the findings cause us to argue that there is a positive relationship between STS and IEB, particularly in explaining proactiveness through all three elements of STS and that systems thinking statistically contributes to all IEB elements. These results contribute to the empirical research in this field and entrepreneurial practice.

In this article we add statistically significant information to the research by identifying a positive relation between the way entrepreneurs strategically think and their entrepreneurial behavior. Moreover, it represents an additional foundation toward systematically explaining the individual's role within the process of entrepreneurship [88], [77], [118] and the origin of cognitive differences among entrepreneurs [3], [6], [35]. In practical terms, our findings indicate that the training of entrepreneurs in STS will result in strengthened proactive behavior and special educational emphasis on systems thinking will positively impact individual entrepreneurial behavior.

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References

[1] Amadeus database. https://amadeus.bvdinfo.com: accessed March 10th 2014.

[2] Atwater, L. E., and F. J. Yammarino. Does Self-other Agreement on Leadership Perceptions Moderate the Validity of Leadership and Performance Predictions? *Personnel Psychology* 45: 141-164. doi:10.1111/j.1744-6570.1992.tb00848.x. 1992.

[3] Baron, R. Cognitive Mechanisms in Entrepreneurship: Why and When Entrepreneurs Think Differently than Other People? *Journal of Business Venturing* 13: 275-94. 1998.

[4] Baron, R. Potential Benefits of the Cognitive Perspective: Expanding Entrepreneurship's Array of Conceptual Tools. *Journal of Business Venturing* 19: 169-72. 2004.

[5] Baron, R. Opportunity Recognition as Pattern Recognition: How Entrepreneurs "Connect the Dots" to Identify New Business Opportunities. *Academy of Management Perspectives* 20: 104-19. 2006.

[6] Baron, R., Baum, J. and Frese, M., eds. Entrepreneurship: A Process Perspective. In *The Psychology of Entrepreneurship*, 24-40. Mahwah, NJ: Erlbaum. 2007.

[7] Baron, R. The Role of Affect in the Entrepreneurial Process. *Academy of Management Review* 33: 328-40. doi:10.5465/AMR.2008.31193166. 2008.

[8] Baum, J. R., and E. A. Locke. The Relationship of Entrepreneurial Traits, Skill and Motivation to Subsequent Venture Growth. *Journal of Applied Psychology* 89 (4): 587-598. doi:10.1037/0021-9010.89.4.587. 2004.

[9] Baum, J. R., E. A. Locke, and K. G. Smith. A Multidimensional Model of Venture Growth. *Academy of Management Journal* 44: 292-303. 2001.

[10] Baumol, W. 1993. Formal Entrepreneurship Theory in Economics: Existence and Bounds. *Journal of Business Venturing* 8 (4): 197-210. doi:10.1016/0883-9026(93)90027-3.

[11] Bennis, W. *On Becoming a Leader*. New York: Addison Wesley1989.

[12] Bingham, C. B., K. M. Eisenhardt, and N. R. Furr. What Makes a Process a Capability? Heuristics, Strategy, and Effective Capture of Opportunities. *Strategic Entrepreneurship Journal* 1 (1-2): 27-47. doi:10.1002/sej.1. 2007.

[13] Bird, B., L. Schjoedt, and J. R Baum. Editor's Introduction. Entrepreneurs' Behavior: Elucidation and Measurement. *Entrepreneurship Theory and Practice* 36 (5): 889-913. doi:10.1111/j.1540-6520.2012.00535.x. 2012.

[14] Bird, B., and L. Schojedt. Entrepreneurial Behavior: Its Nature, Scope, Recent Research, and Agenda for Future Research. In *Understanding the Entrepreneurial Mind: Opening the Black Box*, edited by A. L. Carsrus and M. Brännback, 327-358. New York, NY: Springer. 2009.

[15] Bird, B. *Entrepreneurial Behavior*. Glenview IL: Scott Foresman and Company. 1989.

[16] Bolton, D. L. Individual Entrepreneurial Orientation: Further Investigation of a Measurement Instrument. *Academy of Entrepreneurship Journal* 18 (1): 91-98. 2012.

[17] Bolton, D. L., and M. Lane. Individual Entrepreneurial Orientation: Development of a Measurement Instrument. *Education + Training* 54 (2/3): 219-233. doi: 10.1108/00400911211210314. 2012.

[18] Bonn, I. *Developing Strategic Thinking as a Core Competency*. Management Decision 39 (1): 63-71. doi: 10.1108/EUM0000000005408. 2001.

[19] Busenitz, L., and J. Barney. Differences between Entrepreneurs and Managers in Large Organizations: Biases and Heuristics in the Strategic Decision-making. *Journal of Business Venturing* 12: 9-30. 1997.

[20] Busenitz, L., and J. Barney. Differences between Entrepreneurs and Managers in Large Organizations: Biases and Heuristics in the Strategic Decision-making. *Journal of Business Venturing* 12: 9-30. 1996.

[21] Casson, M. *The Entrepreneur*. Totowa, NJ: Barnes and Noble Books. 1982.

[22] Chandler, G., D. DeTienne, A. McKelvie, and T. Mumford. Causation and Effectuation Processes: A Validation Study. *Journal of Business Venturing* 26 (3): 357-390. doi:10.1016/j.jbusvent.2009.10.006. 2011.

[23] Cohen, J. *Statistical Power Analysis for the Behavioral Sciences*. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum. 1988.

[24] Cools, E., and H. Van Den Broeck. Searching the Heffalump: Using Traits and Cognitive Styles to Predict Entrepreneurial Orientation. *Journal of Small Business Strategy* 18 (2): 23-41. 2007.

[25] Corbett, A. C. Experiential Learning within the Process of Opportunity Identification and Exploitation. *Entrepreneurship Theory and Practice* 29 (4): 437-491. doi:10.1111/j.1540-6520.2005.00094.x. 2007.

[26] Covin, J., and D. Slevin. A Conceptual Model of Entrepreneurship as Firm Behavior. *Entrepreneurship Theory and Practice* 16 (1): 7-25. 1991.

[27] Covin, J., and D. Slevin. Strategic Management of Small Firms in Hostile and Benign Environments. *Strategic Management Journal* 10: 75-87. doi:10.1002/smj.4250100107. 1989.

[28] Covin, J. G., and D. Slevin. The Influence of Organizations Structure on the Utility of Entrepreneurial Top Management Style. *Journal of Management Studies* 25 (3): 217-234. 1988.

[29] Covin, J. G., and D. P. Slevin. The Development and Testing of an Organization-level Entrepreneurship Scale. *In Frontiers of Entrepreneurship Research*, edited by A. Hornaday, R. Peterson and K. H. Vesper, Wellesley MA: Babson College. 1986.

[30] Dew, N., S. D. Sarasvathy, S. Reads, and R. Wiltbank. Affordable Loss: Behavioral Economic Aspects of the Plunge Decision. *Strategic Entrepreneurship Journal* 3 (2): 105-126. doi:10.1002/sej.66. 2009.

[31] Croatian Bureau of Statistics, Women and men in Croatia, 2015

[32] Dragoni, L., P. Vankatwyk, and P. Tesluk. Developing Executive Leaders: The Relative Contribution of Cognitive Ability, Personality, and the Accumulation of Work Experience in Predicting Strategic Thinking Competency. *Personnel Psychology* 64: 829-864. doi:10.1111/j.1744-6570.2011.01229. 2011.

[33] Drucker, P. The Discipline of Innovation. *Harvard Business Review*, (Nov – Dec): 3-8. 1998.

[34] Fischer, E., and A. R. Reuber. Social Interaction via New Social Media: (How) Can Interactions on Twitter Affect Effectual Thinking and Behavior? *Journal of Business Venturing* 26: 1-18. doi:10.1016/j.jbusvent.2010.09.002. 2011.

[35] Foo, M., M. Uy, and R. Baron. How Do Feelings Influence Effort? An Empirical Study of Entrepreneur's Affect and Venture Effort. *Journal of Applied Psychology* 94 (4): 1086-1094. doi:10.1037/a001599, 2009.

[36] Gartner, W. B., N. M. Carter, and P. Reynolds. Entrepreneurial Behavior: Firm Organizing Processes. In *Handbook of Entrepreneurship Research: An Interdisciplinary Survey and Introduction*, edited by Z.J. Acs, and D. B. Audretsch 5 (2): 99-127. New York: Springer. 2010.

[37] Grégoire, D., A. Corbett, and J. McMullen. The Cognitive Perspective in Entrepreneurship: An Agenda for Future Research. *Journal of Management Studies* 46 (6): 1443-1477. doi:10.1111/j.1467-6486.2010.00922.x. 2011.

[38] Haley, U. C. V., and S. A. Stumpf. Cognitive Trails in Strategic Decision-Making: Linking Theories or Personalities and Cognitions. *Journal of Management Studies* 26: 477–497. 1989.

[39] Hamel, G., and C. K. Prahalad. *Competing for the Future*. Boston: Harvard Business School Press. 1994.

[40] Hannan, M. T., D. Burton, and J. Baron. Inertia and Change in the Early Years: Employment Relations in Young, High Technology Firms. *Industrial and Corporate Change* 5: 503-536. doi:10.1093/icc/5.2.503. 1996.

[41] Harris, M., and J. Schaubroeck. A Meta-analysis of Self-supervisor, Self-peer, and Peer-supervisor Ratings. *Personnel Psychology* 41: 43-62. doi:10.1111/j.1744-6570.1988.tb00631.x. 1988.

[42] Hartman, S. J., and S. M. Crow. Executive Development in Healthcare During Times of Turbulence: Top Management Perceptions and Recommendations. *Journal of Management in Medicine* 16 (5): 359-370. doi:10.1108/02689230210446535. 2002.

[43] Hastie, R. Problems for Judgment and Decision Making. *Annual Review of Psychology* 52: 653-683. doi:10.1146/annurev.psych.52.1.653. 2001.

[44] Haynie, J. M., D. A. Shepherd, and J. S. McMullen. An Opportunity for Me? The Role of Resources in Opportunity Evaluation Decisions. *Journal of Management Studies* 46: 337-361. doi:10.1111/j.1467-6486.2009.00824.x. 2009.

[45] Haynie, J., D. Shepherd, and H. Patzelt. Cognitive Adaptability and an Entrepreneurial Task: The Role of Metacognitive Ability and Feedback. *Entrepreneurship, Theory and Practice* 36 (2): 237-265. 2012.

[46] Hebert, R., and A. Link. *The Entrepreneur: Mainstream Views and Radical Critiques*. 2nd ed. New York: Praeger. 1988.

[47] Hu, L., and P. M. Bentler. Cut off Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives. *Structural Equation Modeling* 6: 1-55. doi:10.1080/10705519909540118. 1999.

[48] Hughes, P., and R. E. Morgan. A Resource-Advantage Perspective of Product-Market Strategy Performance and Strategic Capital in High Technology Firms. *Industrial Marketing Management* 36 (May) 503-517. 2007.

[49] *Industrial Strategy 2014-2020*, Croatian government, Croatia

[50] Ireland, R. D., M. A. Hitt, and D. G. Simon. A Model of Strategic Entrepreneurship: The Construct and Its Dimensions. *Journal of Management* 26 (6): 963-989. 2003.

[51] Jacobs, T. Owens. *A Guide to the Strategic Leader Development Inventory*. Washington DC: National Defense University Industrial College of the Armed Forces. 1994.

[52] Jantunen, A., K. Puumalainen, S. Saarenketo, and K. Kylaheiko. Entrepreneurial Orientation, Dynamic Capabilities and International Performance. *Journal of International Entrepreneurship* 3: 223-243. doi:10.1007/s10843-005-1133-2. 2005.

[53] Jelenc, L. *The Impact of Strategic Management and Strategic Thinking on the Performance of Croatian Entrepreneurial Practice*. Doctoral dissertation, University of Ljubljana, Slovenia. 2009.

[54] Jelenc, L. and P.M. Swiercz, *Strategic Thinking Capability: Conceptualization and Measurement*. The 56th Annual ICSB, Stockholm: 1-25. 2011.

[55] Joardar, A., and S. Wu. Examining the Dual Forces of Individual Entrepreneurial Orientation and Liability of Foreignness on International Entrepreneurs. *Canadian Journal of Administrative Sciences* 28: 328-340. doi:10.1002/cjas.203. 2011.

[56] Karagozoglu, N., and W. B. Brown. Adaptive Responses by Conservative and Entrepreneurial Firms. *Journal of Product Innovation Management* 5 (4): 269-281. doi: 10.1111/1540-5885.540269. 1988.

[57] Kolman, T., J. Christofor, and A. Kuckertz. Explaining Individual Entrepreneurial Orientation: Conceptualizing of a Cross-cultural Research Framework. *International Journal of entrepreneurship and Small Business* 4 (3): 325-340. 2007.

[58] Krueger, N. and F. Norris. Identifying Growth Opportunities: Testing a Personal Entrepreneurial Orientation. *Entrepreneurship in a Diverse World* 7. 2005.

[59] Krueger, N. The Cognitive Psychology of Entrepreneurship. In *Handbook of Entrepreneurship Research*, edited by Z. J. Acs, and D. B. Audretsch, 105–140. London: Kluwer Law International. 2003.

[60] Kuratko, D., D. Ireland, J. Covin, and J. Hornsby. A Model of Middle-level Managers' Entrepreneurial Behavior. *Entrepreneurship Theory and Practice* 13 (4): 62-72. 2005.

[61] Lau, V. P., M. A. Shaffer, and K. Au. Entrepreneurial Career Success From a Chinese Perspective: Conceptualization, Operationalization, and Validation. *Journal of International Business Studies* 38: 126-146. doi: 10.1057/palgrave.jibs.84002522007.

[62] Liedtka, J. M. Strategic Thinking: Can It Be Taught? *Long Range Planning* 31 (1): 120-129. doi: 10.1016/S0024-6301(97)00098-8. 1998.

[63] Liedtka, J. M., and J. W. Rosenblum. Shaping Conversations: Making Strategy, Managing Change. *California Management Review* 39 (1): 242-257. 1996.

[64] Lumpkin, G. T., and B. Erdogan. If Not Entrepreneurship, Can Psychological Characteristics Predict Entrepreneurial Orientation? - A Pilot Study. *The ICFAI Journal of Entrepreneurship Development* 1: 21-33. 2004.

[65] Lumpkin, G. T., and G. G. Dess. Linking Two Dimensions of Entrepreneurial Orientation to Firm Performance: The Moderating Role of Environment and Industry Life Cycle. *Journal of Business Venturing* 16 (5): 429-451. doi: 10.1016/S0883-9026(00)00048-3. 2001.

[66] Lumpkin, G., and G. Dess. Clarifying the Entrepreneurial Orientation Construct and Linking It to Performance. *Academy of Management Review* 21 (1): 135-172. doi: 10.2307/258632. 1996.

[67] Marino, L., K. Strandholm, H. K. Steensma, and K. M. Weaver. The Moderating Effect of National Culture on the Relationship between Entrepreneurial Orientation and Strategic Alliance Portfolio Extensiveness. *Entrepreneurship Theory and Practice* 46: 145-160. 2002.

[68] Markman, G. D., and R. A. Baron. Person-entrepreneurship Fit: Why Some People are More Successful as Entrepreneurs than Others. *Human Resource Management Review* 134: 1-21. 2003.

[69] Miller, D., and P. H. Friesen. Innovation in Conservative and Entrepreneurial Firms: Two Models of Strategic Momentum. *Strategic Management Journal* 3 (1): 1-25. doi: 10.1002/smj.4250030102. 1982.

[70] Miller, D., and I. Le Breton-Miller. Governance, Social Identity, and Entrepreneurial Orientation on Closely Held Public Companies. *Entrepreneurship Theory and practice*, 35 (5): 1051-1076. doi: 10.1111/j.1540-6520.2011.00447.x. 2011.

[71] Miller, D. Miller, D. 1983. Revisited: A Reflection on EO Research and some Suggestions for the Future. *Entrepreneurship Theory and Practice* 35 (5): 873-894. doi: 10.1111/j.1540-6520.2011.00457.x. 2011.

[72] Miller, D. The Correlates of Entrepreneurship in Three Types of Firms. *Management Science* 29 (7): 770-791. doi: 10.1287/mnsc.29.7.77. 1983.

[73] Mintzberg, H. Learning 1, Planning 0 Reply to Igor Ansoff. *Strategic Management Journal*, 12: 463-466. doi: 10.1002/smj.42501206061991.

[74] Mintzberg, H. *Structure in Fives: Designing Effective Organizations*. Englewood.Cliffs, N.J.: Prentice-Hall. 1983.

[75] Mintzberg, H. *The Nature of Managerial Work*. New York: Harper and Row. 1973.

[76] Mitchell, R. K., L. Busenitz, B. Bird, C. M. Gaglio, J. McMullen, E. Morse, and B. Smith. January The Central Question in Entrepreneurial Cognition Research. *Entrepreneurship Theory and Practice* 1-27. 2007.

[77] Mitchell, R., L. Busenitz, T. Lant, P. McDougall, E. Morse, and B. Smith. Winter Toward a Theory of Entrepreneurial Cognition: Rethinking the People Side of Entrepreneurship Research. *Entrepreneurship Theory and Practice* 27 (2): 93-104. doi: 10.1111/1540-8520.00001.2002.

[78] Mitchell, R. K. *The Composition, Classification, and Creation of New Venture Formation Expertise*. Doctoral Dissertation, University of Utah, Salt Lake City, UT. 1994.

[79] Monsen, E. and R. W. Boss. *Mapping the Differential Impact of Entrepreneurial Orientation on Performance in a Healthcare Organization*. Babson-Kauffman Entrepreneurship Research Conference, University of Strathclyde, Glasgow, Scotland. 2004.

[80] Mullins, J. W., and D. Forlani. Missing the Boat or Sinking the Boat: A study of New venture Decision making. *Journal of Business Venturing* 20: 47-69. 2005.

[81] Nunnally, J., and I. Bernstein. *Psychometric Theory*, 3rd ed., McGraw-Hill, New York. 1994.

[82] Nuntamanop, P., I. Kauranen, and B. Igel. A New Model of Strategic Thinking Competency. *Journal of Strategy and Management* 6 (3): 242-64. doi: 10.1108/JSMA-10-2012-0052. 2013.

[83] Pisapia, J. *The Strategic Leader: New Tactics for a Globalizing World*. Charlotte, NC: Information Age Publishing. 2009.

[84] Pisapia, J., L. Jelenc, L. and A. Mick. The Foundations of Strategic Thinking: Effectual, Strategic, and Causal Reasoning. In Raguž, I., Podrug, N., Jelenc, L.

(Eds.) *Neostrategic Management*, pp.45-55. Heidelberg, de: Springer International Publishing. ISBN 978-3-319-18184-4. 2016.

[85] Pisapia, J., Morris, J., Cavanaugh, G. and Ellington, L. *The Strategic Thinking Questionnaire: Validation and Confirmation of Constructs*. The 31st SMS Annual International Conference, Miami, Florida November 6-9 2011.

[86] Pisapia, J., D. Reyes-Guerra, and E. Coukos-Semmel. Developing a Strategic Mindset: Constructing the Measures. *Leadership Review* 5: 41-68. 2005.

[87] Poon, J., R. Ainuddin, and S. Jumit. Effects of Self-concept Traits and Entrepreneurial Orientation on Firm Performance. *International Small Business Journal* 24 (1): 61-82. doi: 10.1177/0266242606059779. 2006.

[88] Powell, T. C., D. Lovallo, and C. R. Fox. Behavioral Strategy. *Strategic Management Journal* 32: 1369-1386. doi: 10.1002/smj.968. 2011.

[89] Quince, T., and Whittaker, H. *Entrepreneurial Orientation and Entrepreneurs Intentions and Objectives*. ESRC Center for Business Research, University of Cambridge, Working Paper No. 271. 2003.

[90] Rauch, A., and M. Frese. Let's Put the Person Back into Entrepreneurship Research: a Meta-analysis on the Relationship between Business Owners' Personality Traits, Business Creation, and Success. *European Journal of Work and Organizational Psychology* 16 (4): 353-85. doi: 10.1080/13594320701595438. 2007.

[91] Richard, O. C., T. Barnett, S. Dwyer, and K. Chadwick. Cultural Diversity in Management, Firm Performance, and the Moderating Role of Entrepreneurial Orientation Dimensions. *Academy of Management Journal* 47 (2): 255-266. doi: 10.2307/20159576. 2004.

[92] Robinson, P. B., D. V. Stimpson, J. C. Huefner, H. K. Hunt. An Attitude Approach to Prediction of Entrepreneurship. *Entrepreneurship Theory and Practice* 15(4): 13-31.1991.

[93] Rosche, A. L. H. W. *Personality correlates of Strategic Thinking in an Organizational Context*. Faculty of the California School of Organizational Studies: Alliant International University. 2003.

[94] Rosenberg, N. Conference on Growth and development: The Economics of the 21st Century. *Uncertainty and Technological Change*. Stanford, CA: Stanford University, Center for Economic Policy Research. 1994.

[95] Sarasvathy, S. Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency. *Academy of Management Review* 26 (2): 243-263. doi: 10.5465/AMR.2001.4378020. 2001.

[96] Sarasvathy, S., H. Simon, and I. Lave. Perceiving and Managing Business Risks: Differences Between Entrepreneurs and Bankers. *Journal of Economic Behavior and Organization* 33 (2): 207-225. 1998.

[97] Senge, P. *The Fifth Discipline*. Cambridge: Sloan School of Management. 1990.

[98] Shane, S. Prior Knowledge and the Discovery of Entrepreneurial Opportunities. *Organization Science* 11: 448-469. doi: 10.1287/orsc.11.4.448.14602. 2000.

[99] Shane, S., and S. Venkataraman. The Promise of Entrepreneurship as a Field of Research. *Academy of Management Review* 25: 217-226 doi: 10.2307/259271.2000.

[100] Shane, S., S. Venkataraman, and I. MacMillan. Cultural Differences in Innovation Championing Strategies. *Journal of Management* 21 (5): 931-952. doi: 10.1177/014920639502100507. 1995.

[101] Simon, M., S. M. Houghton, and K. Aquino. Cognitive Biases, Risk Perception, and Venture Formation: How Individuals Decide to Start Companies. *Journal of Business Venturing* 15 (2): 113-134. 2000.

[102] Sirmon, D. G., M. A. Hitt. Managing Resource: Linking Unique Resources, Management and Wealth Creation in Family Firms. *Entrepreneurship Theory and Practice* 27 (4): 339-358. 2003.

[103] Sloan, J. *Learning to Think Strategically*, 2nd ed., London: Routledge. 2013.

[104] Smither, J. W., M. London, N. L. Vasilopoulos, R. Reilly, R. Millsap, and N. Salvemini. An Examination of the Effects of an Upward Feedback Program Over Time. *Personnel Psychology* 48: 1-34. doi: 10.1111/j.1744-6570.1995.tb01744.x. 1995.

[105] Spector, P. E. International Review of Industrial and Organizational Psychology. In *A Consideration of the Validity and Measurement of Self-report Measures of Job Conditions*, edited by C. L. Cooper and I. T. Robertson, England: Wiley, West Sussex. 1992.

[106] *Statistical Yearbook*. Croatian Bureau of Statistics: Zagreb. 2009.

[107] Stewart, S. A., *A Foot in Both Camps: The Influence of Role Identity Centrality of Professional Service Entrepreneurs on Entrepreneurial Orientation and Firm Performance*, Doctoral dissertation, Florida Atlantic University, Boca Raton, 2014.

[108] Stubbart, C. I. Managerial Cognition: A Missing Link in Strategic Management Research. *Journal of Management Studies* 26: 325-347. doi: 10.1111/j.1467-6486.1989.tb00732.x. 1989.

[109] Tabachnick, B. G., and L. S. Fidell. *Using Multivariate Statistics*. Boston: Pearson/Allyn and Bacon. 2007.

[110] Thakur, M., and W. Hoffman. Identifying Rewards for Strategic Thinking-A Survey of CEOs and Middle Managers. *Personnel Review* 16 (3): 29-33. 1987.

[111] Torset, C. July *Strategic Thinking: Why, What, and How?, An Organizational Model of Strategic Thinking*. Lyon: EGOS XVII th Colloquium, The Odyssey of Organizing, July 5-7. 2001.

[112] Townsend, D. M., L. W. Busenitz, and J. D. Arthurs. To Start or Not to Start: Outcome and Ability Expectations in the Decision to Start a New Venture. *Journal of Business Venturing* 25: 192-202. doi: 10.1016/j.jbusvent.2008.05.003. 2010.

[113] Valdaliso, J., A. Elola, M. Aranguren, S. Lopez. Social capital, internationalization and absorptive capacity: The electronics and ICT cluster of the Basque Country. *Entrepreneurship and Regional Development: An International Journal* 23(9-10): 707-73. doi: 10.1080/08985626.2010.505268, 2011.

[114] Venkataraman, S. Advances in Entrepreneurship, Firm Emergence, and Growth. In *The distinctive Domain of Entrepreneurship Research: An Editor's Perspective*, edited by J. Katz and R. Brockhaus, 3:119-138. Greenwich, CT: JAI Press. 1997.

[115] Weisband, S., and L. Atwater. Evaluating Self and Others in Electronic and Face-to-facegroups. *Journal of Applied Psychology* 84 (4): 632-639. doi:10.1037/0021-9010.84.4.632. 1999.

[116] Yammarino, F. J., and L. E. Atwater. Do Managers See Themselves as Others See them? Implications of Self–other Rating Agreement for Human Resources Management. *Organizational Dynamics* 25 (4): 35-44. 1997.

[117] Zabriskie, N., and A. Huellmantel. Developing Strategic Thinking in Senior Management. *Long Range Planning* 24 (6): 15-26. 1991.

[118] Zahra, S. A., D. F. Jennings, and D. F. Kuratko. The Antecedents and Consequences of Firm-level Entrepreneurship: The State of the Field. *Entrepreneurship Theory and Practice* 24 (2): 45-65. doi: 10.1016/S0267-3649(00)88914-1,1999.

[119] Zhao, H., S. E. Seibert, G. T. Lumpkin. 2009. "The Relationship of Personality to Entrepreneurial Intentions and Performance: A Meta-Analytic Review." *Journal of Management* 36 (2): 381-404. doi:10.1177/0149206309335187