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

This article addresses the contribution of strategic thinking skills in explaining individual entrepreneurial behavior in Croatian IT firms.

In the traditional Schumpeterian view, entrepreneurship was viewed as a phenomenon occurring at individual level. Fueled by the work of Miller (1983), the focus shifted from individual actions to processes at firm level, which became known as entrepreneurial orientation (EO) (Miller, 1983; Covin and Slevin, 1986; Lumpkin and Dess, 1996). They, as well as other scholars (Bird, 1989; Hannan, Burton, and Baron, 1996; Mintzberg, 1983), recognize that small businesses are merely extensions of their founders' or CEOs' entrepreneurial behaviors. One stream follows the path of Kollman, Christofor, and Kuckertz (2007), Bolton and Lane (2012), and Bolton (2012) by directly transforming entrepreneurial orientation constructs to individual level entrepreneurial orientation (IEO) of individual entrepreneurs. In this paper we called it individual entrepreneur behavior (IEB) and served as the dependent variable, measuring inclination towards *risk-taking*, *innovativeness*, and *proactiveness*.

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 (Stubbart, 1989, p.326; Torset, 2001, p.3-12). The *Strategic thinking skills—reflection*, *reframing* and *systems thinking*— are key skills of strategic thinkers (Pisapia, 2009), treated as independent variables.

Study of 136 IT entrepreneurs in Croatia Entrepreneurs who use strategic thinking skills more exhibit more individual entrepreneurial behavior than those entrepreneurs who use strategic thinking skills less. Two scales were used to measure individual entrepreneurial

behavior and strategic thinking skills: Bolton and Lane's (2012) IEO instrument and Pisapia's (2009) Strategic thinking questionnaire (STQ). Exhibit 1 offers the factor analysis results.

Exhibit 1. Factor analysis of the strategic thinking skills on the strategic thinking Questionnaire.

Items	Factors		
	Systems Thinking	Reflecting	Reframing
Reflect1	-	.838	-
Reflect2	-	.590	-
Reflect3	-	.553	-
Reflect 4	-	.499	-
Reflect 5	-	.498	-
Systems1	.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
percent of Variance Explained	30	12	10
Cronbach α	.74	.76	.62
Total 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

Individual entrepreneurial behavior served as our dependent variable and was measured by Bolton and Lane's (2012) IEO instrument. Their scale development included rewording the Lumpkin and Dess's (1996) items at individual rather than organizational level (Exhibit 2).

Exhibit 2. Factor analysis of the individual entrepreneurial behavior items.

Items	Factors		
	Risk-taking	Innovativeness	Proactiveness
RISK1	.746	-	-
RISK 2	.743	-	-
RISK 3	.720	.254	-
RISK 4	.705	.254	-
INNOV1	-	.902	-
INNOV 2	.219	.765	-
INNOV 3	.248	.706	-
PROACT 1	-	-	.830
PROACT 2	-	-	.757
PROACT 3	.320	-	.732
percent of Variance Explained	33	18	12
(Cronbach α)	.75	.75	.68
Total 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

We report the means, standard deviations and correlations for independent and dependent study variables in Exhibit 3.

Exhibit 3. Descriptive statistics and correlation of study variables (N=136).

	Mean	S.D.	1	2	3	4	5	6	7	8
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

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. Interestingly, neither *systems thinking*, nor *reflecting*, nor *reframing*, nor overall *strategic thinking skills* was significantly associated with *innovativeness*.

The hypothesis was subjected to a second analysis to determine the contribution of each of the *strategic thinking skills* in predicting elements of individual entrepreneurial behavior. Exhibit 4, presents the results of the linear regression used to test the ability of *strategic thinking skills* to predict individual entrepreneurial behavior.

Exhibit 4. Linear regression of reframing, reflection, systems thinking, and individual entrepreneurial behavior (n = 136).

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	0.085	0.030	0.410	0.220
Adjusted R^2	0.000	-0.007	0.162	0.041
F	F(1,125) = 0.978	F(1,125) = 0.120	F(1,125) = 27.080**	F(1,125) = 6.788 †

†<0. 10, * p < .05, ** p < .01
Source: authors

Based on the data presented in Exhibit 3 and 4, the hypothesis that entrepreneurs who use more strategic thinking skills will exhibit more individual entrepreneurial behaviors than those using strategic thinking skills less is confirmed.

The results of the regression analysis of STS and IEB show that STS predicts a small percentage of variances in IEB as of 4.1 percent. Lumpkin and Dess (1996, 2001) and Miller (2001) 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. In fact, *proactiveness* as an element of IEB had a strong relation to all components of strategic thinking skills, being recognized as the ability to actively seek and suggest new options, ways, methods, and resources, which happens to be the key point of entrepreneurship. *Systems thinking* as an element of strategic thinking skills showed to be a predictor of all individual entrepreneurial behavior elements.

One of the paths for further research is to ask about what is behind the mechanism of *strategic thinking skills* that influences *proactiveness* and does *systems thinking* influence all elements of IEB in the same way? This paper has innovatively set the relation between two constructs: individual entrepreneurial orientation and strategic thinking skills. The relation between STS and IEO exists and has proven to be positively correlated.

References

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

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

Covin, J. G., and D. P. Slevin. 1986. “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.

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

Lumpkin, G. T., and G. G. Dess. 2001. “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

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

Miller, D. 2011. “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

Miller, D. 1983. “The Correlates of Entrepreneurship in Three Types of Firms.” *Management Science* 29 (7): 770-791. doi: 10.1287/mnsc.29.7.770

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

Stubbart, C. I. 1989. “Managerial Cognition: A Missing Link in Strategic Management Research.” *Journal of Management Studies* 26: 325-347. doi: 10.1111/j.1467-646.1989.tb00732.x

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