

## THE IMPACT OF STRUCTURAL CAPITALS IN ORGANIZATIONS ON ENTREPRENEURIAL ORIENTATION (CASE STUDY: EMPLOYEES OF QAZVIN'S MUNICIPALITY'S FIRST AND SECOND REGIONS)

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**Abstract:** The present research was aimed to examine the effect of structural capitals in organizations on entrepreneurial orientation. Research method was practical in terms of objective; in terms of data collection method, it was descriptive-correlational; and in terms of the type of collected data, it was a quantitative research. The statistical population of the present study consisted of employees of Qazvin's municipality's. From them, 130 individuals were selected as sample size using a Stratified Random Sampling method and Cochran Formula. Data analysis was done using a Partial Least Squares method and Smart PLS 2 software in two sections: measurement model and structural model. Results show that structural capitals in the organization have a positive and significant effect on entrepreneurial orientation in organizational members.

**Keywords:** Entrepreneurial orientation, Structural Capital, organizational culture, organizational processes, information systems, and intellectual property

### 1 Introduction

In recent decades, evolutions in competitions and uncertainties in environments have caused big organizations with little structural and methodological changes to be unable to compete with small organizations which have greater flexibility, speed, and innovation (Jenkins, 2009; Kontinen & Ojala, 2011). Societies pay particular attention to organizations that encourage entrepreneurship and glorify peoples' talents. Today, organizations are increasingly exposed to situations which make it necessary for them to resort to entrepreneurial activities (Shepherd et al., 2009). Organizations must provide an atmosphere where the whole organization experiences entrepreneurial spirit, leading to entrepreneurial activities in individuals and groups. Hence, different organizations are willingly developing entrepreneurial activities among employees.

There have been studies in which intellectual capital is considered as one of the factors affecting entrepreneurship (Talebi et al., 2015). Organizational members' intellectual capital has been introduced as a set of intangible intellectual assets such as knowledge, skills, technology, experience, and communicational power. Intellectual capital has certain dimensions such as human capital, structural capital, and relational capital (Moon & Kym, 2006). In conducted studies, the effect of structural capital has not been referred to as a dimension separate from intellectual capital; and it seems that there is a gap in studies connected to this subject. Therefore, the present study is trying to fill the gap. Hence, it has been tried to answer the question; "Do structural capitals affect individuals' entrepreneurial orientation?"

### 2 Literature Review

#### 2.1 Entrepreneurial orientation

Organizations increasingly do entrepreneurial activities in today's dynamic world of competitions, in spite of fast global changes, in order to survive and achieve competitive advantage (Covin & Kuratko, 2008). Today, entrepreneurship is considered as one of the tools of development, because the presence of

entrepreneurs helps to provide the ground for success. According to Naman and Slevin (1993), companies in challenging environments are more willing to be innovative, take risks, and be leading than those in static environments. An entrepreneurial organization is constantly ready and able to adapt itself to the many external changes in order to make its plans flexible and adaptive to changes in environmental needs. Most entrepreneurship scholars believe that organizations can perform better if they have entrepreneurial orientations (Dess & Lumpkin, 2005; Naldi et al., 2007). In other words, entrepreneurial orientation includes intentions and activities of key factors in a dynamic production process, which contributes to opportunities. In their studies, Covin & Slevin (1989) introduce entrepreneurial orientation as a multidimensional construct, which can be evaluated from different perspectives (Chang et al., 2007). For instance, Miller (1983) proposed certain dimensions for describing entrepreneurial orientation; he considered entrepreneurial firms as entities that are engaged in markets which possess innovative products, including a little risk as well as being willing to be pioneers in innovations, and challenging rivals (Morris et al., 2007).

Innovation is a reflection of companies' tendency towards new ideas and creative processes, results of which might be products, services, and/or new technological processes (Li et al., 2008). Risk taking refers to companies' willingness to allocate basic resources to projects with likelihood of success or failure (Lumpkin & Dess, 2001; Baker & Sinkula, 2009). Leading organizations monitor market trends; they identify future needs of current customers; and they predict changes in demands or problems, which can lead to the possibility of forming a new company. Lumpkin & Dess (1996) added two other factors to the above-mentioned factors, which can play an important role in entrepreneurship: competitive aggressiveness and autonomy. Competitive aggressiveness refers to companies' tendency towards difficult and direct challenges with rivals in order to improve market conditions. Companies which construct their competitive status in an aggressive way in order to make profits might be able to sustain their competitive advantage in the long run, on the condition that their aim is to surpass rivals not to put them under pressure (Dess & Lumpkin, 2005). Autonomy refers to individuals and teams' direct activities to form and implement ideas (Chang et al., 2007). Factors of entrepreneurial orientation work together in order to improve entrepreneurial performance in organizations (Shan et al., 2016).

#### 2.2 Structural Capital

Structural capital of a construct refers to explicit knowledge, which flows in internal processes through employees' (human capital) implicit knowledge, skills, competencies, and experiences (Martinez-Torres, 2006); it comes in different forms such as information systems, organizational culture, and intellectual property (Moon & Kym, 2006). According to Edvinsson & Malone (1997), structural capital comes from hardware-software capabilities, database, organizational structure, organizational rights, trademarks, and other explicit capabilities in organizations, which support employees' productivity. Structural capital is referred to as a type of asset which remains in the organization even when employees leave work and go home. In other words, structural capital includes all non-human accumulations of knowledge in an organization. Bontis (1998) introduces structural capital as non-human assets and capabilities, which are used in order to meet market needs.

Moon & Kym (2006) believe that structural capital is reflected in internal factors such as organizational culture, organizational processes, information systems, and intellectual property. Because this classification comprises important internal factors

and because it refers to the importance of intangible assets, it is used by many scholars; hence, it is valuable.

The first factor is organizational culture. Organizational culture includes basic values, beliefs, and ethical principles existing in organizations, which play a crucial role in organizational management. Organizations with strong structural capital possess a culture which pushes employees to innovations through trial and error and learning from mistakes (Bontis, 1998). If values, norms, and beliefs of organizations support employees' efforts to increase creativity and innovation, it is likely that they will identify and exploit entrepreneurial opportunities. Zahra et al (2005) classify factors affecting entrepreneurship into two sets: internal factors and environmental factors. An internal factor is organizational culture. According to them, in an organization with a culture that supports creativity and innovation, organizational entrepreneurship will develop, and employees will be encouraged to identify and exploit environmental opportunities. Dimitratos et al., (2012), with the introduction of "international entrepreneurial culture", refer to organizational culture as a key to identification and exploitation of entrepreneurial opportunities in international situations. Additionally, they stated that if organizational values and norms conform to the global market's activities, it will be easy for the organization to identify and exploit opportunities. Other researchers such as Dimitratos & Plakoyiannaki (2003) and Jones et al., (2012) refer to the fact that organizations' success in identifying environmental opportunities is subject to support from organizational culture for factors such as innovation, risk taking, active learning, and networking. Hence, considering the aforementioned, the first hypothesis of the research is as follows:

First hypothesis: organizational culture has a positive and significant effect on individuals' entrepreneurial orientation.

The second factor is organizational processes. Organizational processes refer to the styles of doing organizational activities, in which individuals use existing data resources in order to perform their duties in the best possible way (Hobley & Kerrin, 2004). Bhagavatula et al (2010), referring to the effect of human and social capital on organizational entrepreneurship, stated that the fewer constraints and limitations in the way of entrepreneurship, the more creative the employees will be, and the more entrepreneurial behaviors will be seen. Li et al (2012) stated that if operation processes in organizations follow learning, inter-organizational relationships in senior management level can increase the ability to discover entrepreneurial opportunities. In another research, Gregoire et al (2010) stated that when internal processes are designed in a way that risk taking for innovations fades, and when individuals are intensely punished for their mistakes, no efforts are made to be creative and innovative,

leading to loss of entrepreneurship. Hence, considering the aforementioned, the second hypothesis of the research is as follows:

Second hypothesis: Organizational processes have a positive and significant effect on individuals' entrepreneurial orientation.

Information systems, as the third factor, refer to IT (Information Technology) in organizations; IT is used for correctly and completely managing information systems (Soh & Markus, 1995). Numerous studies have focused on the effect of information systems in the development of entrepreneurship. For instance, Shane & Venkataraman (2000) believe that it is necessary for individuals and organizations to have access to useful and valuable information obtained from business environments in order to succeed in developing entrepreneurship. In addition, Busenitz (1996) stated that the reason why some individuals are able to recognize entrepreneurial opportunities is that they are capable of gathering and utilizing useful information. Referring to the significant effect of organizational members' presence in social networks outside the organization on the increase in the ability to recognize innovative ideas, Ozgen & Baron (2007) consider shared information in networks to be a key factor which helps expand individuals' knowledge. Hence, considering the aforementioned, the third hypothesis of the research is as follows:

Third hypothesis: Information systems have a positive and significant effect on individuals' entrepreneurial orientation.

The fourth factor, intellectual property, is the most tangible and obvious dimension of structural capital, because it is legally maintained in the organization (Moon & Kym, 2006). Intellectual property is a type of asset which is accomplished through incorporation of inventions and trademarks in every organization. Siegel et al (2007) report that with an increase in the rate of commercialization of intellectual property rights in American/European universities and companies over the last decade, the importance of knowledge and technology transfer strategies for quickly discovering and exploiting ideas has increased. In addition, Friedman & Silberman (2003) refer to the fact that with individuals' conformations to the maintenance of intellectual properties such as new inventions, organizations' competitiveness increases through identification and exploitation of entrepreneurial opportunities. Hence, considering the aforementioned, the fourth hypothesis of the research is as follows:

Fourth hypothesis: Intellectual property has a positive and significant effect on individuals' entrepreneurial orientation.

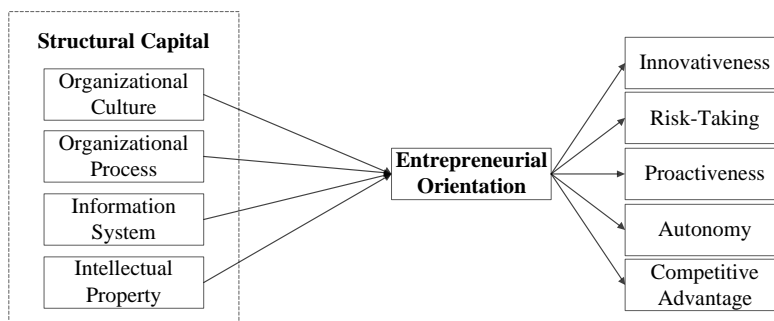


Fig 1. Conceptual Model

### 3 Research Methodology

The present research was practical in terms of objective; in terms of data collection method, it was descriptive-correlational; and in terms of the type of collected data, it was a quantitative research. In order to analyze data obtained from questionnaires, a Structural Equation Modeling method was used along with a Partial Least Squares method (PLS-SEM) and Smart PLS software. The latent variable of structural capital was examined through Moon and Kym's (2006) standard questionnaire (19 items); in addition, the latent variable of entrepreneurial orientation was examined through D-Clerk's et al (2013) standard questionnaire (7 items). The statistical population of the present study consisted of employees in Qazvin's municipality' first and second regions (200 individuals), 130 of whom were

selected as sample size, using a Stratified Random Sampling method and Cochran Formula.

In order to examine the reliability of the questionnaire, criteria of a Partial Least Squares method were used. In this method, reliability is measured using two criteria: 1) Cronbach's Alpha, 2) Composite Reliability (CR). Cronbach's alpha coefficient expresses the ability of the questions to properly express corresponding dimensions. Composite reliability coefficient determines the correlation between the questions of one dimension in order to sufficiently fit measurement models (Fornell & Larcker, 1981). The results related to the reliability of the questionnaire have been shown by the two mentioned criteria in table 1; and we can see a favorable level of reliability.

Table 1: Reliability of measurement tool

Variables	Cronbach's Alpha	Composite Reliability
Organizational Culture (OC)	0.78	0.78
Organizational Process (OP)	0.86	0.82
Information System (IS)	0.79	0.73
Intellectual Property (IP)	0.76	0.85
Entrepreneurial Orientation (EO)	0.91	0.78

Validity was calculated using convergent and divergent validity as well as criteria that are exclusive to the Partial Least Squares method. Convergent validity was examined using AVE criterion (Average Variance Extracted); and if this criterion is greater than

0.4, convergent validity of the measurement tool will be approved (Magner et al., 1996). According to table 2, all values show that the convergent validity of the questionnaire is favorable.

Table 2: Results of AVE value for research constructs

Variables	OC	OP	IS	IP	EO
AVE	0.56	0.64	0.47	0.53	0.69

For measuring divergent validity, Fornell and Larcker (1981) have recommended comparison of AVE root of each construct with correlation coefficients of other constructs. As it can be

seen in the following matrix (table 3), the values on the main diameter are greater than low values, which shows that the divergent validity of the constructs is favorable.

Table 3: Matrix of comparing AVE root with correlation confidents of constructs (divergent validity)

Variables	OC	OP	IS	IP	EO
OC	0.74				
OP	0.41	0.80			
IS	0.52	0.27	0.68		
IP	0.37	0.39	0.34	0.72	
EO	0.42	0.26	0.209	0.63	0.83

### 4 Research Findings

After examination of reliability and validity, here, the cause-and-effect relationship between structural capitals and entrepreneurial orientation is examined using Smart PLS 2 software. Hence, in order to test research hypotheses, the variable of structural capitals was designed as an exogenous construct, and the variable of entrepreneurial orientation was designed as an endogenous construct in a certain model. The output of the model included standardized coefficients and significance coefficients of "t" (the values in the brackets), which have been presented in figure 2. When values of "t"

are greater than +1.96, it is shown that the corresponding parameter is significant, and that research hypotheses are approved (Vinzi et al., 2010). According to figure 2, the "t" coefficient between research constructs is greater than 1.96, which shows that research hypotheses are significant. Additionally, the standardized coefficient shows what percentage of changes in entrepreneurial orientation is expressed by structural capitals. Hence, organizational culture expresses 67 percent of changes in entrepreneurial orientation; organizational processes express 58 percent of changes; information systems express 74 percent of changes; and intellectual property expresses 31 percent of changes.

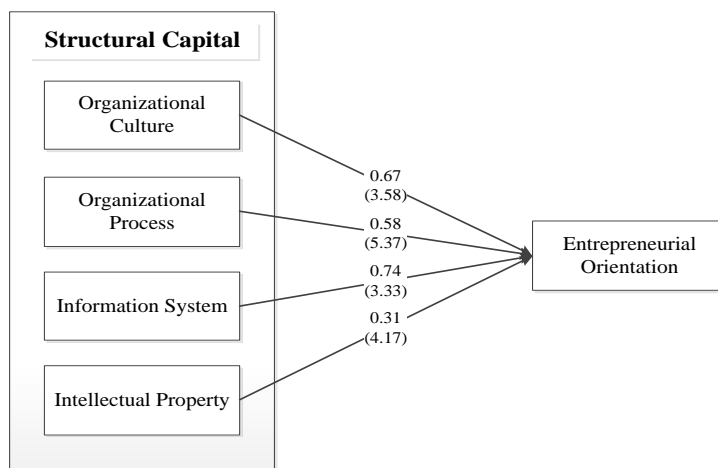


Fig. 2: Output of Smart PLS software for examination of research hypotheses

## 5 Conclusion

Obtained results showed that structural capital affects entrepreneurial orientation, and that in an organization with strong structural capitals, entrepreneurial activities are done more easily. Ramos-Rodriguez et al (2010) approve of the effect of intellectual property on entrepreneurship, and believe that employees' access to external knowledge is the key to reinforcement of the ability to recognize entrepreneurial opportunities; they also believe that structural capital is an effective factor too. According to them, the knowledge flowing in organizational structures and processes helps facilitate the process of acquiring knowledge and consequently improving entrepreneurial behaviors among employees. Edvinsson & Malone (1997) have introduced structural capital as a type of explicit capability, which supports employees' productivity through enhancing entrepreneurial capabilities. Furthermore, Barringer & Ireland (2007) and Cooper & Park (2008) refer to the important effect of prior experiences in entrepreneurship. The results of their studies indicate that employees with prior experience in identifying and exploiting opportunities are considered as capitals for organizations. If this human capital is managed correctly and sufficiently, it can become a precious structural capital for organizations.

Hence, it is recommended that companies design a particular mechanism for maintaining knowledge formed through organizational members (human capital) and use it in organizational processes, considering the importance of structural capital and its effect on entrepreneurship. It is also recommended that organizational values and norms be used in order to enhance individuals' creativity and innovation, as well as preserving organizational members' intellectual property rights in the elements of organizational culture. Finally, it is recommended that companies' information systems be designed in a way that employees can have free access to information in order to share knowledge in internal elements, and develop entrepreneurship.

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