Effect of Corporate Entrepreneurship on Firm Performance in Iranian ASMEs: The Mediation Role of Knowledge Creation and Learning Orientation

M. Ahmadvour Daryani¹, and A. Karimi²*

ABSTRACT

The Corporate Entrepreneurship (CE) of firms and enterprises is the subject of current research in the fields of management and business. However, analyses on this subject in agricultural firms are lacking. The purpose of this research was to study the relationships between corporate entrepreneurship and firm performance in Agricultural Small and Medium-sized Enterprises (ASMEs) in Iran. Specifically, the authors aimed to analyze how knowledge creation and learning orientation as a mediator influence the relationship between corporate entrepreneurship and firm performance. A conceptual model was designed and hypotheses were constructed. The samples in this study were owners and/or top managers of ASMEs. Data for the study were collected using a questionnaire survey administrated during 2015. In order to test the hypotheses, data were collected from ASME and analyzed using the structural equation model by AMOS20 graphic software. The results reveal that corporate entrepreneurship significantly influences learning orientation, knowledge creation and firm performance in ASMEs. The most notable outcome of these findings is that knowledge creation and learning orientation performs a mediating role in the relationships between corporate entrepreneurship and performance in ASMEs.

Keywords: Agricultural SMEs, AMOS20 graphic software, Corporate entrepreneurship, Knowledge creation, Small and medium-sized enterprises.

INTRODUCTION

Today, development of SMEs is an appropriate strategy for development of agricultural section, paving the way for overcoming challenges such as stability, benefit, and efficiency (Nainggolan, 2003; Champagne et al., 1990). Agricultural Small and Medium-sized Enterprises (ASMEs) are responsible for a large part of products and services of agricultural section and are significant for creating job opportunities and income. By creating job opportunities, supplying basic needs, and connection with other economic sections, ASMEs can play an important role in development of rural and suburban zones. (Maleksaeidi et al., 2011). Ministry of Industry, Mine and Trade of Iran defines agricultural SMEs as having less than 100 employees (Statistical center of Iran, 2013). To address the questions of why establishing enterprises in agricultural section are of significance, one can point out to the achievements and results obtained from entrepreneurship which were in line with the ideals and goals of sustainable development in agriculture (Karimi, et al., 2011; Sharifzadeh et al., 2008). Nevertheless, SMEs and, in particular, ASMEs often face some problems in achieving an appropriate performance, especially in the early stages (Verheugen, 2005). Therefore, to increase the performance of SMEs, there have to be a solution. The researches results indicate that enterprises that have been engaged with corporate entrepreneurship have had a better performance.

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compared with those not having that process (Martín-Rojas et al., 2013; Philpott et al., 2011). In new economic scenarios where dynamism and complexity are of key importance, enterprises need to come up with new reaction if they are to survive and be successful. Under such circumstances, activities related to corporate entrepreneurship is of great significance (Ana et al., 2011). In other words, as the situation gets more complicated and dynamic, SMEs should be more entrepreneurial, so that they can recognize new opportunities for better and more sustainable performance (Hayton, 2005). In general, the corporate entrepreneurship is an important element of SMEs success and needs a lot of attention (Ozdemirci, 2011).

Lumpkin and Dess (1996) show that, in studies related to corporate entrepreneurship, most of the researches have studied the direct effect of entrepreneurial orientations on the performance and that they have ignored those factors that could have moderated or played the role of a mediator on the performance. This means that in researches of entrepreneurial orientation, the effect of mediation and moderating factors at internal variables on the relationship between corporate entrepreneurship and firm performance has not been considered. (Li et al., 2009). Few studies have considered the mediation impact of internal factors that characterize new entry activities on the CE– performance relationship, and no study has examined the mediation effect of Learning Orientation (LO) and Knowledge Creation (KC) on this relationship.

Many questions in this regard have been left unanswered. The role of mediation factor in relation to corporate entrepreneurship and firm performance has been ignored in many researches (Sanjaghi et al., 2014). Researches results demonstrate that corporate entrepreneurship components such as innovation, proactiveness, risk-taking, etc. have a direct effect on enterprises performance. In addition, they have been shown to have an indirect influence on enterprises performance through mediation variables like knowledge creation and learning orientation.

Based on the foregoing premises, our study aimed to explore the effects of KC, LO and CE on firm performance. The purpose of this investigation was thus to contribute to the existing literature that stresses the importance of knowledge creation and learning orientation for Agricultural SMEs as mediators. Therefore, in the present study, the mediation role of KC and LO regarding the relation between the corporate entrepreneurship and ASMEs performance is explained.

MATERIALS AND METHODS

Theory and Hypotheses

Corporate Entrepreneurship

Corporate entrepreneurship is the main factor in enterprises success (Taylor, 2013). Antoncic and Hisrich (2001) state that corporate entrepreneurship is a process occurring inside of an enterprise which, besides its size, not only creates new business, but that also leads to more innovative activities like new product or service development, new technology, new executive techniques, strategies and new competitive states. Beside the concept and goals of corporate entrepreneurship, experts and researchers consider corporate entrepreneurship as a multidimensional concept consisting of innovativeness (Morris et al., 2010; Kreiser et al., 2002), proactiveness (Kreiser et al., 2002; Morris and Kuratko, 2002), risk-taking (Morris et al., 2005), new business venturing, and strategic renewal (Antonic and Hisrich, 2001).

In the current study, five dimensions of corporate entrepreneurship have been presented, namely, innovativeness, proactiveness, risk-taking, new business venturing, and strategic renewal.

Knowledge Creation

The process of knowledge creation enables firms to improve their internal knowledge and transform the knowledge to operational activities, improving the efficiency and creating business value (Vidic, 2013). Based on Nonaka et al. (2000) opinions, the knowledge creation process is of key importance in particular for new businesses that want to develop products and new market activities. Through change and
knowledge creation, the employees can use the knowledge so that they can serve the customers (Li et al., 2009). Nonaka and Takeuchi (1995) suggest the SECI (Socialization-Composition-Externalization-Internalization) models of businesses to create knowledge. The dimensions of this model are socialization, externalization, composition, and internalization (Salarzehi et al., 2013).

**Learning Orientation**

Learning orientation shows the level of business engagement in active and effective learning (Lu ne Nkula et al., 1997). Learning orientation affects the different kinds of accumulated data and their interpretation, analysis, and sharing. Skinkula et al. (1997) describe learning orientation as an organizational dimension that affects the organizational orientation vis-à-vis the product value and bilateral learning. International literature acknowledges that commitment to learning, shared vision, and open-mindedness are the most important dimensions of learning orientation (Calantone et al., 2002).

**Corporate Entrepreneurship and Performance**

Performance is a multidimensional concept. The relationship between the corporate entrepreneurship and performance depend on the measures based on which performance is evaluated. Those measures include financial and non-financial measures. Non-financial measures include satisfaction, and global success ranking by the owners and managers of the businesses. Financial measures include the sales growth rate and the capital return rate. Most of the discussion related to the relationship between the corporate entrepreneurship and performance revolves around the financial measures. This is because the relationship between the corporate entrepreneurship with non-financial measures, like the satisfaction of business owners, is very insecure and intangible. One of the most important and comprehensive measure Murphy et al. (1996) scale which consists of three components: efficiency, growth, and profit.

Literature shows that corporate entrepreneurship is of great importance for economic and non-economic performance of businesses and is considered one of the main stimulations of long-term success of a business (Hosseini and Eskandari, 2013; Wiklund (1998); Wiklund and Shepherd (2005), Walter et al. (2005), Covin and Slevin (1991), and Brown (1996) have also found the relationship between entrepreneurial orientation and performance. In another research, Kraus et al. (2012) have studied the effect of corporate entrepreneurship on the performance of SMEs in Netherlands. Based on the approach of source-advantage entrepreneurial orientation is considered as one of the crucial sources of an organization. Such a source can distinguish the firm from its competitors, making it more economically dynamic. It can also create wealth during the competitive process (Li et al., 2009). Most of the experimental results have found that the effect of corporate entrepreneurship on performance has been of positive evaluation (Miller, 1983; Lumpkin and Hess, 2001; Wiklund and Shepherd, 2005; Zahra and Covin, 1995; Zahra and Garvis, 2000). Based on the literature discussed above, we propose the following hypothesis:

H1. Corporate entrepreneurship will have a positive impact on SMEs performance.

**Knowledge Creation and Performance**

Firms that guide the knowledge creation process more appropriately and apply the created knowledge better are more successful in introducing the new values to their customers. They also have a better performance (Hunt and Morgan, 1997; Lee and Choi, 2003; Nonaka and Konno, 1998). New knowledge and skill can increase a firm’s ability to create innovative products and services. It can also lead to effective development of existing products and services by decreasing the costs and production surplus.

Therefore, the SECI process where knowledge is converted into firm value leads to processes development and innovative products. Consequently, when firms create knowledge through an efficient SECT process, they ultimately would like to see the effectiveness,
growth and benefit (performance factors) (Li et al., 2009). The researcher’s studies highlight the important role of knowledge creation process in the performance of successful organizations (Chia, 2003; Gold et al., 2001; Kogut and Zander, 2003; Matusik and Hill, 1998; Nonaka and Takeuchi, 1995).

H2: Knowledge creation process will be positively related to ASMEs performance.

Learning Orientation and Performance

Learning orientation is generally a vital qualification and key factor for obtaining sustainable competitive advantage and improving the business performance. Firms that are able to learn can better adjust themselves to environmental changes (Day, 1994). Learning orientation leads to the increase of firm performance as it drives them towards challenging the theories and traditional operations of business. It also investigates the mental and logical models related such operations (Grinstein, 2008). Various studies have confirmed the positive and significant relationship between the learning orientation and organizational performance (Slater and Narver, 1994; Hurley and Hult, 1998; Aragon-Corrales et al., 2007; Shavazi, et al., 2015; Wang, 2008; Frankanz-Mesa and Alegre-Vidal, 2013; Jimenez-Jimenez, et al., 2008). Based on the literature discussed above, we propose the following hypothesis:

H3: Learning Orientation will be positively related to ASMEs performance.

The Mediation Role of Knowledge Creation and Learning Orientation

The studies conducted in the past on the effect of corporate entrepreneurship on the firm performance present an incomplete picture. It is obvious that the relation between corporate entrepreneurship and firm performance is more complex than a simple relation (Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005). Zahra and Covin, 1995, have investigated many variables that can affect the relationship between corporate entrepreneurship and firms performance or play the role of mediation.

Setyanti et al. (2013) have studied the effects of innovative mediation on the relationship of entrepreneurial orientation, knowledge sharing, and movement capabilities with firm performance.

In another study, Vidic (2013) has investigated 195 small and medium-sized firms, trying to study the relationship between entrepreneurial orientation and knowledge creation and their effect on the performance. Jimenez-Jimenez et al. (2008) emphasized on the positive relation of learning orientation as mediation variable when they conducted the research on the effect of learning orientation on innovativeness and business performance. Calantone et al. (2002) have also shown in their researches the mediation role of learning orientation in relation to innovativeness and business performance. Baker and Sinkula (2002) express that learning orientation affects the firm’s ability to create or apply different forms of knowledge. Clercq et al. (2010) have found the effect of the mediation of commitment to learning on such relation. Simon et al. (2011) too have found this effect. Li et al. (2009) have studied the mediation role of knowledge creation and the effect of this role on the relation of entrepreneurial orientation to firm performance. In a study, Hitt et al. (2001) have investigated the mediation role of human resources affecting entrepreneurial orientation and its relation to the performance of technical firm’s services. Hosseini and Eskandari (2013) studied the mediation role of human resources and environment factors affecting the entrepreneurial orientation and its relation to agricultural performance in Iran. Nevertheless, still there is not a correct answer regarding the effect of mediation factors affecting entrepreneurial orientation and its relation to firm performance based on the studies of these researchers. It can be observed that corporate entrepreneurship affects the firm’s performance through mediation variables of learning orientation and knowledge creation.

The following hypotheses were formed based on the results of those studies.

Hypothesis 4: Learning orientation mediates the relationship between corporate entrepreneurship and performance in ASMEs.

Hypothesis 5: Knowledge Creation mediates the relationship between corporate entrepreneurship and performance in ASMEs.
The hypothesized research model

From the foregoing discussion, the hypothesized causal relationships are illustrated in the research model, as shown in Figure 1.

Methodology

The methodology of this study will be discussed in terms of data collection, measurement instrument, data analysis, validation of measurements, and reliability of measurement.

A. Sample and Data Collection

Data for the study were collected using a questionnaire survey administrated during 2015. The samples in this study were owners and/or top managers of Agricultural SMEs. To capture the information from agricultural SMEs top managers or owners, all agricultural SMEs across Tehran Province in Iran were included (N= 1123 Agricultural SMEs which were listed on the Iranian Small and Medium Industrial Advisory Data Bank). According to the Bartlett et al. (2001) table, a sample size of 240 was selected using a stratified random sampling method. A direct mail survey approach was used to get the data from owners and/or top managers of agricultural SMEs and the questionnaires were distributed to agricultural SMEs whose mail address was available. Follow-up telephone calls were made to remind the respondents to return the questionnaire. In this process, 500 questionnaires were mailed. Of the 500 questionnaires mailed, 292 responses were received, of which 37 were incomplete. The remaining 255 valid and complete questionnaires were used for the quantitative analysis.

B. Measures

B.1- Corporate Entrepreneurship:
Measurement of corporate entrepreneurship was performed across five dimensions by combining two scales; corporate entrepreneurship scale used by Antoncic and Hisrich (2004), and corporate entrepreneurship scale used by Zahra (1993). Innovativeness was measured by 5 items, strategic renewal was measured by 4 items, risk taking was measured by 3 items, new business venturing was measured by 3 items and proactiveness was measured by 4 items.

B.2- Knowledge Creation: This study adopted the work of Sabherwal and Becerra-Fernandez
Ahmadpour Daryani and Karimi (2003), for the knowledge creation measure. Socialization was measured by 4 items; composition was measured by 4 items; externalization was measured by 3 items; and internalization was measured by 3 items.

**B.3- Learning Orientation:** The measures of learning orientation developed by Sinkula et al. (1997) and Calantone et al. (2002) were adopted in this study. Shared vision was measured by 5 items, open-mindedness was measured by 4 items, and commitment to learning was measured by 5 items.

**B.4- Firm Performance:** The measure of Firm performance developed by Murphy et al. (1996) was adopted in this study, which consists of three components: Efficiency (3 items), growth (3 items), and profit (3 items).

For each of these scales, the participants responded to a 5-point Likert scale with responses ranging from “strongly disagree” to “strongly agree”. Because the study was conducted in Iran, the Iranian version was developed by translation and back-translation of the American version into the Iranian language. A copy of these measures is available from the author on request.

**C. Data Analysis**

The hypothesized causal relations were investigated using AMOS 20 graphic software, a Structural Equation Modelling (SEM) method. A structural equation model has two components; the measurement model and the structural model. Of course, it should be noted that the bootstrapping method was used for the third hypothesis i.e. the mediation effect of knowledge creation and learning orientation on the relationship between corporate entrepreneurship and firm performance (Preacher and Hayes, 2008). In this method, firstly, the total effect model or the direct effect of the independent variable on the dependent variable is estimated without the presence of the mediator variable; if this effect is significant, in the second step, the model is estimated and examined with the mediation effect that includes the mediator variable. In the event of a significant indirect path in this model, the mediation hypothesis is confirmed (Hayes, 2013).

**D. Validation of Measurement**

**D.1. Content Validity:** Before distribution and completion of the questionnaire, its content validity had been examined by eight managers with at least five years of experience in the ASMEs and by eight academics specializing in entrepreneurship. The questionnaire was revised on the basis of their comments.

**D.2. Convergent Validity:** Convergent validity refers to the consistency that multiple items exhibit in measuring the same construct. The factor loadings from the CFA provide evidence for convergent validity as all items load sufficiently high on the corresponding constructs. We also evaluated convergent validity by using Average Variance Extracted (AVE), which should exceed 0.50 (Fornel and Larcker, 1981). As indicated in Table 3, all indicator factor loadings exceed the threshold value of 0.50 suggested by Peterson (2000). AVE ranged from 0.71 to 0.76.

**D.3. Discriminant Validity:** For discriminant validity, the square root of the AVE of each construct should be greater than the correlation shared between the construct and other constructs in the model and should be at least 0.50 (Fornel and Larcker, 1981). Table 3 displays the correlations among constructs, with the square root of the AVE on the diagonal. All constructs satisfactorily pass the test, as the square root of the AVE (on the diagonal) is larger than the cross correlations with other constructs. The convergent and discriminant validities of the constructs of the study are thus acceptable (Table 3).

**E. Reliability of Measurement**

**E.1. Internal Consistency Reliability:** In order to assess the internal consistency reliability, Cronbach’s alpha coefficient was used. Cronbach’s alpha values for the individual constructs were higher than 0.7 (Table 2).

**E.2. Composite Reliability:** The measurement model was assessed with respect to Composite Reliability (CR). Fornell and Larcker (1981) have suggested that the CR values should be greater than 0.6. Studies have suggested that 0.7 is an acceptable value for a
reliable construct. The values of composite reliability for the four subscales given in Table 3 were acceptable.

**F. Model Goodness Of Fit (GOF)**

In assessing the models goodness of fit, many scholars suggested multiple criteria to be used, including CFA and structural model (Hair *et al.*, 2010). The summary of the goodness-of-fit indices used in this study is presented in Table 4. Hair *et al.* (2006) suggest that using three or four fit indices provides adequate evidence of model fit.

**RESULTS**

**Descriptive and Correlation Statistics**

Among the 255 responding SMEs, the majority were established between 1995-2005 (41.6%) with employment size between 9 and 49 employees (70%). Many (41.6%) of them were skewed toward production and have 100,000-50,000 $ annual sales turnover (Table 1). The findings in Table 2 indicate that the ASMEs focus on Strategic Renewal dimension (3.15 mean) more than the other dimensions of corporate entrepreneurship. The findings of correlation matrix indicated that there is significant and positive correlation among performance with all dimensions of corporate entrepreneurship, all dimensions of knowledge creation and also all dimensions of learning orientation.

**Structural Equation Model**

A structural equation model with AMOS graph software has two components; the measurement model and the structural model.

**Measurement Model**

A confirmatory factor analysis using AMOS was used to test the measurement model (i.e., to confirm the structure of constructs) (Hair *et al.*, 2006). According to the diagnostic indices (Table 4), the measurement model demonstrated a fairly good fit in that all of its model-fit indices surpassed common acceptance levels. Furthermore, as shown in Table 5, all indicator loadings for the constructs were statistically significant (P< 0.01) and their standardized estimates ranged from 0.683 to 0.794 for corporate entrepreneurship, 0.663–0.773 for Knowledge Creation, 0.683–0.757 for Learning Orientation, and 0.614–0.729 for performance. All of the indicators loaded significantly and substantively on their hypothesized factors (p< 0.01), thereby suggesting convergent validity (Bagozzi and Yi, 1988). Also, measurement model could show the validity and reliability of the constructs. The results of AVE showed that the value of this indicator for all latent variables in all measurement models was greater than 0.5 (Table 5). In addition to these two criteria, the results showed that the calculated Composite Reliability (CR) values for all the latent variables were greater than 0.7 (Table 5). This suggests that the structural model represents a good fit. Thus, the path coefficients of the

<table>
<thead>
<tr>
<th>Table 1. Profile of the respondents.</th>
<th>F</th>
<th>%</th>
</tr>
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<tbody>
<tr>
<td>Enterprise year of establishment</td>
<td></td>
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<tr>
<td>Before 1995</td>
<td>57</td>
<td>22.3</td>
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<tr>
<td>1995-2005</td>
<td>106</td>
<td>41.6</td>
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<tr>
<td>After 2005</td>
<td>92</td>
<td>36.1</td>
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<tr>
<td>Nature of business</td>
<td></td>
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<tr>
<td>Production</td>
<td>86</td>
<td>33.7</td>
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<tr>
<td>Service</td>
<td>105</td>
<td>41.2</td>
</tr>
<tr>
<td>Others</td>
<td>64</td>
<td>25.1</td>
</tr>
<tr>
<td>Enterprise size of employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 9 employees</td>
<td>46</td>
<td>18.1</td>
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<tr>
<td>Between 9 and 49 employees</td>
<td>179</td>
<td>70.1</td>
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<tr>
<td>Above 50 employees</td>
<td>30</td>
<td>11.8</td>
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<tr>
<td>Enterprise annual sales turnover</td>
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<td></td>
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<tr>
<td>Below 50000 $</td>
<td>73</td>
<td>28.6</td>
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<tr>
<td>50000-100000 $</td>
<td>121</td>
<td>47.5</td>
</tr>
<tr>
<td>Above 100000 $</td>
<td>61</td>
<td>23.9</td>
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</tbody>
</table>
### Table 2. Descriptive statistics and Correlation matrix.

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>Cr</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>11</th>
<th>12</th>
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</thead>
<tbody>
<tr>
<td>1. Proactiveness</td>
<td>2.265</td>
<td>1.11</td>
<td>0.84</td>
<td>1</td>
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<tr>
<td>2. Risk-taking</td>
<td>1.983</td>
<td>1.48</td>
<td>0.81</td>
<td>0.35*</td>
<td>1</td>
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<tr>
<td>3. New business venturing</td>
<td>1.834</td>
<td>1.19</td>
<td>0.82</td>
<td>0.29**</td>
<td>0.15*</td>
<td>1</td>
<td></td>
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<td>4. Innovations</td>
<td>2.403</td>
<td>1.58</td>
<td>0.73</td>
<td>0.48**</td>
<td>0.33**</td>
<td>0.32**</td>
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<tr>
<td>5. Strategic Renewa.</td>
<td>3.152</td>
<td>1.63</td>
<td>0.78</td>
<td>0.41***</td>
<td>0.35**</td>
<td>0.30**</td>
<td>0.34**</td>
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<tr>
<td>6. Socialization</td>
<td>3.278</td>
<td>1.09</td>
<td>0.80</td>
<td>0.32**</td>
<td>0.11*</td>
<td>0.41**</td>
<td>0.24**</td>
<td>0.32**</td>
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<tr>
<td>7. Composition</td>
<td>3.653</td>
<td>1.21</td>
<td>0.72</td>
<td>0.33**</td>
<td>0.51**</td>
<td>0.12*</td>
<td>0.12*</td>
<td>0.31**</td>
<td>0.32**</td>
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<tr>
<td>8. Externalization</td>
<td>3.862</td>
<td>1.98</td>
<td>0.81</td>
<td>0.41***</td>
<td>0.36**</td>
<td>0.38**</td>
<td>0.32*</td>
<td>0.28**</td>
<td>0.44**</td>
<td>0.23**</td>
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<tr>
<td>9. Internalization</td>
<td>2.987</td>
<td>0.87</td>
<td>0.73</td>
<td>0.30**</td>
<td>0.56**</td>
<td>0.41**</td>
<td>0.10*</td>
<td>0.45**</td>
<td>0.37**</td>
<td>0.27**</td>
<td>0.47**</td>
<td>1</td>
<td></td>
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<tr>
<td>10. Open-mindedness</td>
<td>2.896</td>
<td>1.22</td>
<td>0.86</td>
<td>0.46**</td>
<td>0.41**</td>
<td>0.21**</td>
<td>0.19**</td>
<td>0.32**</td>
<td>0.32**</td>
<td>0.51**</td>
<td>0.28**</td>
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<tr>
<td>11. Commitment to learning</td>
<td>3.879</td>
<td>1.14</td>
<td>0.81</td>
<td>0.29**</td>
<td>0.29**</td>
<td>0.12**</td>
<td>0.14*</td>
<td>0.09**</td>
<td>0.21**</td>
<td>0.28**</td>
<td>0.29**</td>
<td>0.33**</td>
<td>0.34**</td>
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<tr>
<td>12. Shared vision</td>
<td>3.456</td>
<td>1.87</td>
<td>0.76</td>
<td>0.47**</td>
<td>0.44**</td>
<td>0.41**</td>
<td>0.31**</td>
<td>0.13**</td>
<td>0.34**</td>
<td>0.28**</td>
<td>0.31**</td>
<td>0.32**</td>
<td>0.46**</td>
<td>0.08</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>13. Performance</td>
<td>2.957</td>
<td>1.22</td>
<td>0.83</td>
<td>0.52**</td>
<td>0.23**</td>
<td>0.23**</td>
<td>0.61**</td>
<td>0.59**</td>
<td>0.56**</td>
<td>0.34**</td>
<td>0.46**</td>
<td>0.41**</td>
<td>0.34**</td>
<td>0.47**</td>
<td>0.39**</td>
<td>1</td>
</tr>
</tbody>
</table>

* P<0.05, ** P<0.01.

### Table 3. Average Variance Extracted (AVE), Composite Reliability (CR), and Square root of average variance extracted and correlations of all constructs.

<table>
<thead>
<tr>
<th>Construct</th>
<th>CR</th>
<th>AVE</th>
<th>Corporate entrepreneurship</th>
<th>Knowledge creation</th>
<th>Learning orientation</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate entrepreneurship</td>
<td>0.869</td>
<td>0.570</td>
<td>0.754  *</td>
<td>0.722*</td>
<td>0.725*</td>
<td>0.702*</td>
</tr>
<tr>
<td>Knowledge creation</td>
<td>0.813</td>
<td>0.522</td>
<td>0.672  *</td>
<td>0.722*</td>
<td>0.725*</td>
<td>0.702*</td>
</tr>
<tr>
<td>Learning orientation</td>
<td>0.769</td>
<td>0.527</td>
<td>0.539  *</td>
<td>0.634</td>
<td>0.725*</td>
<td>0.702*</td>
</tr>
<tr>
<td>Performance</td>
<td>0.758</td>
<td>0.514</td>
<td>0.567  *</td>
<td>0.613</td>
<td>0.725*</td>
<td>0.702*</td>
</tr>
</tbody>
</table>

* The grey area indicates the square root of average variance extracted of the construct.
Table 4. Goodness-of-fit statistics.

<table>
<thead>
<tr>
<th>Single Fit Indices</th>
<th>Recommended guideline</th>
<th>CE</th>
<th>KC</th>
<th>LO</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hair et al. (2006)</td>
<td>&lt; 3</td>
<td>2.53</td>
<td>2.75</td>
<td>2.56</td>
<td>1.97</td>
</tr>
<tr>
<td>Chi-square</td>
<td>&gt; 0.90</td>
<td>0.903</td>
<td>0.900</td>
<td>0.92</td>
<td>0.903</td>
</tr>
<tr>
<td>GFI</td>
<td>&lt; 0.05</td>
<td>0.041</td>
<td>0.050</td>
<td>0.048</td>
<td>0.039</td>
</tr>
<tr>
<td>RMR</td>
<td>&gt; 0.90</td>
<td>0.902</td>
<td>0.901</td>
<td>0.920</td>
<td>0.921</td>
</tr>
<tr>
<td>CFI</td>
<td>&gt; 0.90</td>
<td>0.910</td>
<td>0.901</td>
<td>0.923</td>
<td>0.931</td>
</tr>
<tr>
<td>IFI</td>
<td>&lt; 0.10</td>
<td>0.075</td>
<td>0.062</td>
<td>0.063</td>
<td>0.071</td>
</tr>
</tbody>
</table>

Table 5. Measurement model results.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Indicator</th>
<th>Standardized loadings</th>
<th>Critical ratio</th>
<th>CR</th>
<th>AVE</th>
<th>Ca</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate entrepreneurship</td>
<td>Proactiveness</td>
<td>0.762</td>
<td>3.56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Risk-taking</td>
<td>0.683</td>
<td>4.63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New business venturing</td>
<td>0.781</td>
<td>2.45</td>
<td>0.869</td>
<td>0.570</td>
<td>0.804</td>
</tr>
<tr>
<td></td>
<td>Innovativeness</td>
<td>0.751</td>
<td>3.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strategic Renewal</td>
<td>0.794</td>
<td>2.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge Creation</td>
<td>Socialization</td>
<td>0.663</td>
<td>2.06</td>
<td>0.522</td>
<td>0.789</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Composition</td>
<td>0.698</td>
<td>3.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Externalization</td>
<td>0.750</td>
<td>3.43</td>
<td>0.813</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internalization</td>
<td>0.773</td>
<td>2.78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning orientation</td>
<td>Open-mindedness</td>
<td>0.735</td>
<td>2.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commitment to Learning</td>
<td>0.758</td>
<td>2.91</td>
<td>0.769</td>
<td>0.527</td>
<td>0.812</td>
</tr>
<tr>
<td></td>
<td>Shared vision</td>
<td>0.683</td>
<td>2.19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>Efficiency</td>
<td>0.614</td>
<td>2.29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Growth</td>
<td>0.796</td>
<td>3.294</td>
<td>0.758</td>
<td>0.514</td>
<td>0.821</td>
</tr>
<tr>
<td></td>
<td>Profit</td>
<td>0.729</td>
<td>3.03</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2. Direct structural model CE and P with standardized estimates.

The structural model can be examined:

**Structural Model**

The estimate of the standardized Path coefficient (P) indicates that the linkage between corporate entrepreneurship and performance (Hypothesis 1) is highly significant (P= 0.628, P< 0.001) (Figure 2). The second Hypothesis (H2) proposed a significant direct relationship between knowledge creation and performance. This hypothesis was supported (P= 0.577, P< 0.004).
Learning orientation was found to be positively related to the enterprise performance ($P= 0.616, P< 0.001$), providing support for Hypothesis three (H3).

This research aims at examining whether knowledge creation and learning orientation plays a mediating role in the relationship between corporate entrepreneurship and performance. The obtained results from the implementation of the Bootstrapping method indicates that the sum of indirect effect of corporate entrepreneurship on performance through the variable of knowledge creation is significant ($p$-value = 0.000, $\beta$ = 0.387) and thus the fourth hypothesis is confirmed (see Table 7). Of course, since the direct path between CE and performance in the Mediation Effect Model is positive and significant ($p$-value= 0.003, $\beta$= 0.450), knowledge creation partially mediates the positive effect of corporate entrepreneurship on performance (Pahlevan Sharif and Mahdavian, 2015). The findings regarding mediating role of knowledge creation in the relationship between corporate entrepreneurship and firm performance were also supported by previous empirical findings. For instance, Simon (2011), Li et al. (2009) and Hitt et al. (2001) reported that knowledge creation plays a mediating role in the relationship between corporate entrepreneurship and performance.

With regard to H5, corporate entrepreneurship, significantly affect performance via learning orientation. The obtained results from the implementation of the Bootstrapping method indicates that the sum of indirect effect of corporate entrepreneurship on performance through the variable of learning orientation is significant ($p$-value= 0.005, $\beta$= 0.526) and, thus, the fifth hypothesis is confirmed (see Table 7). Of course, since the direct path between CE and performance in the Mediation Effect Model is positive and significant ($p$-value= 0.001, $\beta$= 0.548), learning orientation partially mediates the positive effect of corporate entrepreneurship on performance. The findings regarding the mediating role of learning orientation in the relationship between corporate entrepreneurship and firm performance was also supported by previous empirical findings. For instance, Jimenez-Jimenez (2008), Calantone et al. (2002), and Baker and Sinkula (2002) reported the mediating role of learning orientation in the relationship between corporate entrepreneurship and firm performance.

As shown in Tables 6 and 7, all path coefficients are significant at the 0.01 level in the structural model. The results indicate that the hypothesized relationships are supported. The explanatory power of the structural model can be evaluated by examining the amount of variance in the dependent variable which can be explained by the model. Squared multiple correlations ($R^2$) was computed for the dependent variable (firm performance) in a model. The criterion, $R^2$ is critical in evaluating a structural model. Based on the results, CE explains about 40 percent of the variances of firm performance (Figure 2). In addition, as Figure 3 indicates, two variables of corporate entrepreneurship and knowledge creation explain about 55 percent of the

### Table 6. The Direct hypothesis tests summary

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Content</th>
<th>Unstandardized estimates</th>
<th>S.E.</th>
<th>Standardized estimates</th>
<th>Critical ratio</th>
<th>Sig.</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>CE → P</td>
<td>0.745</td>
<td>0.128</td>
<td>0.628</td>
<td>5.820</td>
<td>0.001</td>
<td>Yes</td>
</tr>
<tr>
<td>H2</td>
<td>KC → P</td>
<td>0.817</td>
<td>0.217</td>
<td>0.577</td>
<td>3.765</td>
<td>0.004</td>
<td>Yes</td>
</tr>
<tr>
<td>H3</td>
<td>LO → P</td>
<td>0.798</td>
<td>0.075</td>
<td>0.616</td>
<td>10.640</td>
<td>0.000</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Table 7. The Mediation hypothesis tests summary

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Content</th>
<th>Indirect standardized estimates</th>
<th>Indirect effect SE</th>
<th>Confidence intervals</th>
<th>Two Tailed Sig.</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>H4</td>
<td>CE → KC → P</td>
<td>0.387</td>
<td>0.043</td>
<td>0.318</td>
<td>4.424</td>
<td>0.000</td>
</tr>
<tr>
<td>H5</td>
<td>CE → LO → P</td>
<td>0.326</td>
<td>0.052</td>
<td>0.223</td>
<td>4.492</td>
<td>0.005</td>
</tr>
</tbody>
</table>
DISCUSSION

This study aims to investigate the mediation role of learning orientation and knowledge creation in the relationship between corporate entrepreneurship and firm performance in ASMEs. The research results show that corporate entrepreneurship can have a positive and significant effect on firm performance. The researches conclusions indicate that going after corporate entrepreneurship in SMEs will lead to a better firm performance (Miller, 1983; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005; Zahra and Gravis, 2000; Simsek and Heavy, 2011). That is why dealing with corporate entrepreneurship activities in ASMEs is of key importance. This can open new horizons for firms by seeking and testing
processes that in turn would lead to more attention being paid to innovations and proactiveness and, ultimately, a better firm performance. However, there are things that have been ignored in many studies. Among them are the mechanisms by which corporate entrepreneurship affects firm’s performance. In addition, most of the studies related to the corporate entrepreneurship have investigated the direct effect of entrepreneurial orientation on performance and the factors that could moderate this relation or play the role of mediation have been ignored. There are many questions left unanswered in this area. It can be observed that in many researches the mediation in relation to corporate entrepreneurship and firm performance has not been addressed duly.

With the increasing importance of knowledge and knowledge capitals, many small and medium-sized firms have realized that their investment on financial and physical capitals were not enough. Firms need to focus on intellectual and knowledge capitals as one of the key resources that can increase a relative advantage and appropriate performance. They should do this by relying on a new approach in corporate entrepreneurship development, which guarantees their survival. Considering these issues, the present study is seeking to investigate the mediation role of knowledge creation and learning orientation which are the manifestations of intellectual and knowledge capitals.

The results of the present study confirm the mediation role of learning orientation in relation to corporate entrepreneurship and agricultural SMEs performance. This indicates that dealing with corporate entrepreneurship will lead to a better learning attitude and vision in the firm, which in turn affects the firm performance and improves it. The results are consistent with those of (Jimenez-Jimenez et al., 2008; Calantone et al., 2002; Baker and Sinkula, 2002). Of course, this does not mean that learning orientation just plays a mediation role, but that it can directly affects the firm performance. These finding are consistent with Simsek and Heavey (2011).

Although the results show the corporate entrepreneurship can increase the firm performance, but applying the knowledge creation as a mediation variable in this process can decrease the direct effect of corporate entrepreneurship on the performance. This indicates the importance of knowledge creation as a mediation variable in relation to corporate entrepreneurship and performance. By affecting the knowledge creation process, corporate entrepreneurship indirectly affects the performance. Vidic (2013) has investigated the relationship between the entrepreneurial orientation and knowledge creation and their effect on the performance. He has highlighted the mediation role of knowledge creation. In a research conducted by Lee et al. (2003) the mediation role of knowledge creation process in affecting the entrepreneurial orientation has been emphasized.

The presence of knowledge creation process and learning orientation contributes to our perception of how corporate entrepreneurship affects the ASMEs performance. The results of the study show that for ASMEs to be successful, corporate entrepreneurship is of great importance. This is because it is an important tool to detect and exploit the environment opportunities.

This study contributes to the literature and to the practice of firms by helping them to understand how the conversion process of corporate entrepreneurship currently produces better performance through knowledge creation and learning orientation. This contribution allows firms to adjust their efforts to align corporate entrepreneurship and knowledge creation and learning orientation with performance results.

**CONCLUSIONS**

All of the above findings can have useful managerial applications. First, our study shows that corporate entrepreneurship activities are useful in improving the ASMEs performance in a transiting economy. As a result, top managers of ASMEs should pay attention to the corporate entrepreneurship choice as a main strategic orientation. Furthermore, the study results indicate that mediation variables like knowledge creation and learning orientation an effect the influence of corporate entrepreneurship on the performance and improve it.

Our research is not free from limitations that future studies are called to address. First, as we utilized a limited number of predictors and control variables; future research are needed to
take into consideration other possible variables which may be significantly associated with performance. These variables may include entrepreneurial, organizational and environmental factors, types of industry, size of industry, etc. The second limitation of the study is its cross-sectional nature. Longitudinal research could assess causality in the relationships under study. Another limitation arises from the type of industry in which SMEs operate. This study was focused on SMEs of agriculture sector, so, it seems that future researches must assess these relationships with regard to different types of SMEs and also for SMEs of industry and service sectors.

The generalizability of our results is another limitation as this research was conducted on agricultural SMEs in Iran. In order to increase generalizability, it may prove helpful to carry out a comparative study between two or more countries.

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تأثیر کارآفرینی سازمانی بر عملکرد شرکت در کسب و کارهای کوچک و متوسط
کشاورزی: نقش مبناجی خلق دانش و جهت گیری پادگیری
م. احمد بورداریانی، و آ. کرمی

چکیده

یکی از موضوعات اصلی تحصیلات کارآفرینی در زمینه های مدیریت و کسب و کار، کارآفرینی سازمانی در شرکت ها و کسب و کارها است. این وجه، در کسب و کارها و شرکت های کشاورزی به این موضوع چندان توجه نمی شود. به همین دلیل تحصیل حاضر با هدف بررسی رابطه بین کارآفرینی سازمانی و عملکرد شرکت در کسب و کارهای کوچک و متوسط کشاورزی در ایران انجام گرفت. به طور خاص، هدف نویسندگان این است که تحلیل کند که چگونه خلق دانش و جهت گیری پادگیری به عنوان متغیر مبناجی بر رابطه بین کارآفرینی سازمانی و عملکرد شرکت تاثیر می گذارد. در ادامه مدل مفهومی تحصیل حرارتی و فرایند مشخص شد. نمونه ها در این مطالعه صاحبان و / یا مدیران ارشد کسب و کارهای کوچک و متوسط کشاورزی بودند. اطلاعات لازم با استفاده از پرسشنامه در طول سال 1394 جمع آوری گردید. به منظور آزمون فرضیه های تحصیل، داده ها از کسب و کارهای کوچک و متوسط کشاورزی جمع آوری شد و به روش مدل معادلات ساختاری و با استفاده از نرم افزار AMOS20 مورد تجزیه و تحلیل قرار گرفت. نتایج نشان می دهد که کارآفرینی سازمانی به طور قابل توجهی تاثیر مثبتی بر عملکرد کسب و کارهای کوچک و متوسط کشاورزی ناشی گردید است. نتیجه یافته های تحقیق حاضر این است که، خلق دانش و جهت گیری پادگیری در رابطه میان کارآفرینی سازمانی و عملکرد شرکت نقش مبناجی دارد.