Role of Spiritual Intelligence in Entrepreneurial Self-efficacy With Mediation of Strategic Thinking

Zahra Lari Gol1, Mohammad-Hassan Ghanifar2*, Ghasem Ahi2, Fatemeh Shahabizadeh3, Jalil Jarahi Friz4
1 Ph.D. Student of Educational Psychology, Department of Psychology, Birjand Branch, Islamic Azad University, Birjand, Iran.
2 Assistant Professor, Department of Psychology, Birjand Branch, Islamic Azad University, Birjand, Iran.
3 Associate Professor, Department of Psychology, Birjand Branch, Islamic Azad University, Birjand, Iran.
4 Assistant Professor, Department of Mathematics, Birjand Branch, Islamic Azad University, Birjand, Iran.

Abstract

Background and Objectives: In recent years, the tendency towards entrepreneurship and its related topics, such as entrepreneurial self-efficacy, has significantly increased. Therefore, the present study aimed to investigate the role of spiritual intelligence in entrepreneurial self-efficacy with the mediating role of students' strategic thinking.

Methods: The present research was a descriptive-correlational study through structural equation modeling (SEM). The statistical population of this study included all students working in Science and Technology Park and technology units affiliated to South Khorasan Science and Technology Park within May-July 2019. Out of this population, a total of 120 students were selected by purposive sampling method and answered King Spiritual Intelligence Questionnaires, Strategic Thinking (Goldman), and Entrepreneurial Self-efficacy Scale (De Noble et al.). The obtained data were analyzed in SPSS software (version 22) using structural modeling and partial least squares algorithm (PLS).

Results: The results of the present study pointed to the direct and significant relationship of spiritual intelligence with entrepreneurial self-efficacy and strategic thinking. Moreover, there was a direct and significant relationship between strategic thinking and entrepreneurial self-efficacy (P<0.01). The results also showed that strategic thinking plays a mediating role in the relationship between spiritual intelligence and students' entrepreneurial self-efficacy (P<0.01).

Conclusion: Considering the role of spiritual intelligence and strategic thinking on students' entrepreneurial self-efficacy, educational system authorities need to devote special attention to the role of influential factors that are likely to enhance students' entrepreneurial self-efficacy.

Keywords: Entrepreneurship self-efficacy, Spiritual Intelligence, Strategic Thinking, Student.

Introduction

In today's economy, entrepreneurship is an important factor in the provision of new job opportunities, innovation, technology development, and economic growth. Moreover, numerous prestigious universities around the world aim at educating students and graduates with an entrepreneurship major. Accordingly, we have witnessed a growing interest in entrepreneurship as one of the skills of the 21st century on the part of policymakers and educators (1).

Entrepreneurial talent is manifested by
entrepreneurial self-efficacy (2) which is recognized as one's perception of his/her ability to become an entrepreneur and trust in the successful performance of entrepreneurial roles and responsibilities (3). Entrepreneurial self-efficacy is one of the structural foundations of the entrepreneurial process which is developed and shaped by entrepreneurial education. There are six dimensions in this concept, 1) developing new products and market opportunities, 2) building an innovative environment, 3) initiating investor relationships, 4) defining core purpose, 5) coping with unexpected challenges, and 6) developing critical human resources (4).

Spiritual intelligence is seemingly one of the social and cultural factors that can play a peculiar role in building entrepreneurial self-efficacy (5-8). The role of this emerging organizational phenomenon in entrepreneurship is being studied by researchers (9-10). King defines spiritual intelligence as a set of adaptive mental capabilities based on immaterial and transcendent aspects of reality, especially those related to the nature of one's existence, personal meaning, transcendence, and higher levels of consciousness.

When these capabilities are used, they facilitate the unique ability of problem-solving, abstract thinking, and coping (11). Spiritual intelligence is a multidimensional structure comprising of critical existential thinking, (b) personal meaning production, (c) transcendental awareness, and (d) consciousness state expansion (12). Studies in this regard indicate the role of spiritual intelligence in individual entrepreneurship, attitudes toward entrepreneurship, and entrepreneurial intention. Moreover, in similar research fields, Henley (7) and Chin et al suggested that spirituality is effective in entrepreneurial process and inclination.

Furthermore, many researchers have raised the issue of entrepreneurship thinking, arguing that entrepreneurial endeavors are associated with planning and strategic thinking (13). Strategic thinking is the process in which a person learns how to make his/her business vision a reality by developing abilities in teamwork, critical thinking, and continuous improvement (14). Strategic thinking is a tool that helps people create new opportunities and consists of four components, including conceptual thinking (e.g., creative thinking, inductive reasoning, risk-taking, and lateral thinking), systemic thinking (e.g., organizational hierarchy, environmental communication, holism), providence (e.g., prediction, forecasting, future research) and clever opportunism (e.g., environmental uncertainty, asymmetry of information, uniqueness of assets, information exchange) (15).

Studies denote that strategic thinking is significantly correlated with the tendency to practice organizational innovation (16), entrepreneurial development (17), entrepreneurial inclination (18), and sustainable entrepreneurial development (19). On the other hand, strategic thinking leads to the improvement and development of spiritual capital at the individual and organizational levels by discovering the latent needs to generate innovation, feedback and learning from feedback, creating perspective, implementing in practice, and presenting a strategic thinking model (20).

In this regard, a study conducted by Jalilian et al. revealed that all dimensions of strategic thinking exert a significant effect on spiritual capital. Nevertheless, clever opportunism, systemic perspective, and situational understanding based on learning and cognitive concepts do not exert a statistically significant effect on spiritual capital (21). However, experts and scholars in the field of higher education regard entrepreneurship as a condition for the survival and development of universities. Therefore, nurturing a new generation of entrepreneurs and preparing them for economic activities is one of the new missions of universities.

In addition, entrepreneurial self-efficacy is a prerequisite for entrepreneurship. Nonetheless, despite the potential importance and effectiveness of entrepreneurial self-efficacy in entrepreneurship education, this issue has not received the attention it deserves. Entrepreneurial self-efficacy is of utmost importance in entrepreneurship development and is affected by some variables, such as spiritual intelligence and strategic thinking.
Nonetheless, no study exists on the relationship among these variables.

With this background in mind, the present study aimed to assess the role of spiritual intelligence in entrepreneurial self-efficacy with the mediation of students’ strategic thinking students. It sought to answer the following question: Is the model of spiritual intelligence in entrepreneurial self-efficacy with the mediation of students' strategic thinking a good fit (Figure 1)?

Methods
The present study was practical and in terms of data collection research a descriptive-correlational of structural equations.

The statistical population of the current study included all students working in Science and Technology Park and technology units affiliated to South Khorasan Science and Technology Park within May-July 2019. This population consisted of 240 students, out of whom 90 cases worked in 30 teams inside Science and Technology Park and another 150 subjects in 50 teams outside. Out of this population, 120 eligible students were selected by purposive sampling according to Stevens who recommended that in social science research, about 15-20 subjects are required for each predictor variable to have a valid equation (22).

Moreover, two predictor variables (Spiritual intelligence: four components and the mediating variable of strategic thinking: four components) were taken into account. The inclusion criteria entailed being a student, willingness to complete the questionnaire, and informed consent. On the other hand, the exclusion criteria included incomplete questionnaires and a lack of informed consent. Data collection tools included the following questionnaires:

**Spiritual Intelligence Self-Report Inventory (SISRI 24)**
This 24-item questionnaire was developed by King in 2008 (23). This questionnaire has four dimensions, namely the existence of critical thinking, the creation of personal meaning, the passing of awareness, and the development of consciousness. This questionnaire is scored on a 5-point Likert scale (not true at all to me = 1 to 5 = completely true to me). The score range is within 24-120 (23). In King's study, the reliability of the scale was obtained as 0.92 using Cronbach's alpha method and as 0.91 by the split-half method. Moreover, Cronbach's alpha for the subscales of the existence of critical thinking, the creation of personal meaning, the passing of awareness, and the development of consciousness was calculated at 0.78, 0.78, 0.87, and 0.91, respectively. (23). In a study performed by Raqibi et al., Cronbach's alpha coefficient of this questionnaire was reported as 0.89 and its validity coefficient was calculated as 0.67 by the test-retest method in a sample of 70 subjects at a time interval of 2 weeks (24).

**Strategic Thinking Scale**
This 22-item questionnaire (Goldman, 2006) was constructed on a Likert-type scale, where 1 = Completely disagree and 5 = totally agree. It
consists of four components of conceptual thinking, systemic thinking, clever opportunism, and providence. The highest and lowest scores are 22 and 110; therefore, higher scores indicate higher strategic thinking (25). Goldman reported the convergent and divergent validity of this questionnaire to be 0.75 and 0.32, respectively, and its reliability was obtained at 0.89 using Cronbach’s alpha method (25).

In a study conducted by Afrasyabi, the content validity of this questionnaire was confirmed by a panel of professors and experts, and its reliability was determined at 0.861 using Cronbach’s alpha (26).

**Entrepreneurial Self-Efficacy Scale (ESE)**

This 24-Questionnaire was developed by De Nable et al. in 1999. It is scored on a 5-point Likert scale (1=Totally disagree to 5=Totally agree). There are six dimensions in this questionnaire, including developing new product and market opportunities; building an innovative environment; initiating investor relationships; defining core purpose; coping with unexpected challenges; developing critical human resources. (27).The psychometric evaluation of this questionnaire in the study conducted by De Nable et al. was indicative of the desired validity of this questionnaire. Moreover, the reliability was calculated at 0.89 using Cronbach’s alpha method (27). In a study performed by Safa and Mangeli, the content validity of the questionnaire was approved by supervisors, advisors, and several experts. Reliability was also obtained at 0.88 using Cronbach’s alpha method (28).

In order to collect the research data, the field method was used based on the questionnaire. To this end, the research questionnaires were completed by the subjects. Given that these questionnaires were analyzed in general and not individually, the participants were asked to answer the question honestly. In the current study, all related ethical principles were observed, including the confidentiality of the responses, informed consent of participants, and the right to withdraw from the research. The subjects were assured that their responses would be merely used for research purposes and would remain confidential to the researcher without name or surname.

Finally, the research model and relationships among the variables were analyzed in SPSS (version22) and PLS software using mean, standard deviation, and Pearson correlation. This is the best method for the analysis of studies with complex variables, small sample size, and abnormal data distribution (29).

**Result**

According to descriptive findings, 77 (64.2%) of participants were male and 43 (35.8%) cases were females. The mean age scores of subjects in the experimental group and control groups were reported as 38.6±5.65 and 37.34±4.32, respectively. With respect to educational level, the participants consisted of undergraduate students (61%), master’s students (23%), PhD students in various majors, including engineering sciences (58.3), humanities (27.5), basic sciences (10%), and agriculture (4.2).

Descriptive information, including mean, standard deviation, score range, skewness, and kurtosis of the research variables are displayed in Table 1. To provide the necessary scientific conditions for subsequent analyses, the Zero-Order correlation matrix of measured variables was first calculated, and these coefficients are presented in Table 1.

As illustrated in Table 1., the correlation coefficients of spiritual intelligence with strategic thinking and entrepreneurial self-efficacy as well as the relationship between strategic thinking and entrepreneurial self-efficacy are positive and significant (P<0.01). Positive coefficients point to the direct relationship of entrepreneurial self-efficacy with spiritual intelligence and strategic thinking. Considering that the values of skewness and kurtosis fall within the range of
on an endogenous variable. Three criterion values of 0.19, 0.33, and 0.67 are considered as weak, medium, and strong values, respectively (30).

As presented in Table 3, the obtained $R^2$ values demonstrate the appropriateness of structural model fitting. The second criterion for examining the fit of a structural model is the assessment of $Q^2$ values of endogenous variables of the model. This criterion determines the predictive power of the model. For this criterion, the three values of 0.02, 0.15, and 0.35, respectively, indicate the weak, moderate, and strong predictive power of the corresponding structure (30). According to the results of Table 3, the $Q^2$ values for all endogenous variables are greater than 0.15, which indicates the strong predictive power of the model.

Furthermore, Several goodness of fit (GOF) criteria were used to evaluate the fit of the general model. Three values of 0.11, 0.25, and 0.36 are considered weak, medium, and strong values for GOF, respectively (30). Therefore, as presented in Table 3, the GoF values of 0.466 indicate the overall fit of the research model.

Based on Figure 2., the numbers on the routes

Figure 2. Final causal model of model fit in standard coefficient mod

Table 4. Direct and indirect path coefficients of the research model

<table>
<thead>
<tr>
<th>Path</th>
<th>Beta</th>
<th>t-value</th>
<th>Significance level</th>
<th>Research Hypothesis Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic thinking →</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spiritual intelligence</td>
<td>0.677</td>
<td>13.106</td>
<td>0.01</td>
<td>Confirmed</td>
</tr>
<tr>
<td>Spiritual intelligence →</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrepreneurial self-efficacy</td>
<td>0.519</td>
<td>6.343</td>
<td>0.01</td>
<td>Confirmed</td>
</tr>
<tr>
<td>Entrepreneurial self-efficacy → Strategic thinking</td>
<td>0.320</td>
<td>3.652</td>
<td>0.01</td>
<td>Confirmed</td>
</tr>
<tr>
<td>Spiritual intelligence →</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic thinking</td>
<td>0.217</td>
<td>3.535</td>
<td>0.01</td>
<td>Confirmed</td>
</tr>
</tbody>
</table>

+2- to -2, the data have a normal distribution at the level of 0.05.

Furthermore, as depicted in Table 2., the results of the Kolmogorov-Smirnov test suggested that the significance level of the calculated statistic for all variables was greater than 0.05. Therefore, the assumption that the scores are normally distributed was accepted.

co-efficient of determination ($R^2$) related to the endogenous (dependent) variables of the model is the first criterion for examining the fitting of the structural model. $R^2$ is a criterion indicating the effect of an exogenous variable
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indicate the t-value for each route. To assess the significance of the path coefficients, it is necessary that the t-value of each path be higher than 1.96. In this analysis, the t-values of all routes are higher than 1.96 and are significant at a 95% confidence level.

As displayed in Table 4, all coefficients of direct path related to the relationship of spiritual intelligence with strategic thinking and entrepreneurial self-efficacy, as well as the relationship between strategic thinking and entrepreneurial self-efficacy are positive and significant (P<0.01). Moreover, the results of the Bootstrap test show that the path coefficient of an indirect relationship between spiritual intelligence and entrepreneurial self-efficacy through the mediating variable of strategic thinking is significant (β-value=0.01).

Discussion

The present study aimed to investigate the role of spiritual intelligence in entrepreneurial self-efficacy with the mediation of students' strategic thinking. The first finding of the study was a positive and meaningful relationship between spiritual intelligence and strategic thinking. In line with the above finding, a study carried out by Salajegah and Nami found a relationship between workplace spirituality and the strategic thinking of government employees (31).

In addition, the results of a study conducted by Azizi and Azizi found a strong relationship between spiritual intelligence and inclination to practice critical thinking and indicated that spiritual intelligence can predict critical thinking (32). The abovementioned finding can be justified on the ground that spiritual intelligence makes life worth living and gives our lives true meaning, leading to the emergence of rational behaviors and trust in others based on the principle of mutual respect and equality.

Therefore, it can be argued that people with high spiritual intelligence make use of rational existential thinking that leads to awareness of the nature of realities. Therefore, this intelligence creates a sense of trust and a healthy and rational life in people and leads them to live a life of excellence(33). The central part of spiritual intelligence is questioning and analysis which are the components of strategic thinking since strategic thinking is the analysis of opportunities and problems with a broad perspective and understanding of how actions and measures affect each other.

Strategic thinkers portray an image of their future potential and take a more general look at everyday challenges and issues (34). Accordingly, in strategic thinking, the thinker tries to analyze the issues carefully and search valid evidence to obtain the final result. Another finding was the positive and significant relationship between spiritual intelligence and entrepreneurial self-efficacy. This finding is consistent with the result of a study conducted by Dehkordi et al., who reported the positive effect of entrepreneurs’ spiritual intelligence on entrepreneurial enthusiasm (35). In addition, in similar research fields, Henley (11) and Chin et al. (12) consider the spirituality of religion to affect the process and inclination to entrepreneurship.

Therefore, it can be asserted that spiritual intelligence can be considered one of the highest existential intelligence which causes a new and positive attitude in the person towards him/herself, others, and the outer world (36). On the other hand, people's self-efficacy also refers to one's trust in their abilities and skills. Therefore, it can be stated that high levels of spiritual intelligence promote a positive self-image among people, thereby encouraging them to effectively use their skills while working (37).

Accordingly, high spiritual intelligence can be claimed to bring about high self-efficacy. It should also be noted that spiritual intelligence emphasizes one's knowledge and ideology of the surrounding material world and the spiritual transcendental world. This awareness leads to one's better understanding of themselves, their abilities, and the purpose of human creation. In so doing, one will be able to create a perfectionist image of oneself and a happy and successful human being in their mind. This mental image, in turn, creates a positive attitude towards entrepreneurship and personal growth and development on one hand and helping others to grow and develop through their employment in entrepreneurial business on the
other hand (10).

In line with the findings of previous studies, the results also denoted a positive and significant relationship between strategic thinking and entrepreneurial self-efficacy. For instance, the results of a study conducted by Iraj Soltani et al. suggested that strategic thinking has a positive and significant relationship with organizational entrepreneurship (38). In this regard, a study performed by Khaksar et al. found a significant and positive relationship between strategic thinking and organizational innovation (39).

In the obtainment of the abovementioned result, it can be asserted that innovation, creativity, and entrepreneurship are essentially a knowledge-based process and are the product and result of individual thinking, knowledge, and intellectual capitals. People with a good level of strategic thinking and intellectual capital are also more innovative (16). In this regard, strategic thinking is an approach that provides the basis for the formation and development of this insight. Strategic thinking promotes people to learn from the business environment and use creativity to foster new values.

This thinking brings in distinct perspectives from competitors (39). Therefore, perspectives that can lead to innovative and advantageous strategies and cause entrepreneurial self-efficacy in the individual. The last findings suggested that strategic thinking plays a mediating role in the relationship between spiritual intelligence and students' entrepreneurial self-efficacy. No direct study has been conducted on this result. This conclusion can be justified on the ground that Priestley believes that emotions encouraged in many spiritual traditions complement and give meaning to various aspects of human life (40).

This new realm of power enables people to use their spiritual experiences as a mechanism for dealing with and finding solutions to the problems and difficulties of life (40). Therefore, spiritual experiences act in certain ways as a mechanism for dynamizing life. In other words, spiritual experiences act in a unique, individual way and create solutions to problems in a particular way of thinking and in different lifestyles despite guiding human actions (41). Consequently, strategic thinking paves the way for fostering innovation and entrepreneurship which ultimately leads to increased entrepreneurial self-efficacy.

One of the limitations of the current study is the scarcity of research background regarding strategic thinking and entrepreneurial self-efficacy. Moreover, another limitation of the study was the statistical population; therefore, the generalization of the obtained results must be made very cautiously. Furthermore, according to the results of the research, it is suggested that in academic settings, assiduous attention be paid to nurturing entrepreneurial students. It applies especially in Iran, where spirituality is tied to religious role models, life, as well as important social, cultural, and economic pillars, providing a good platform for its development.

Finally, in order to generalize the results, it is suggested that future studies be conducted investigating other psychological factors affecting entrepreneurial self-efficacy and involving students in other cities more sample numbers.

**Conclusion**

The present study examined a model demonstrating the effect of spiritual intelligence and strategic thinking on entrepreneurial self-efficacy. The obtained results showed that this model is fit and applicable to this population. It can be argued that spiritual intelligence has a positive effect on strategic thinking; moreover, it exerts an effect on entrepreneurial self-efficacy through strategic thinking. It also has a direct positive effect on entrepreneurial self-efficacy.

In other words, people should be provided with the opportunity to better explain and analyze the various aspects and dimensions of the world and the phenomena around them through individual training and thinking. These conditions result in higher spiritual intelligence, which in turn, fosters strategic thinking, giving rise to an increased tendency to engage in entrepreneurial activities or entrepreneurial self-efficacy.

**Conflict of interest**

The authors declare that they have no conflict
of interest regarding the publication of the present study.

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Ethical considerations
The current study was approved by the Ethics Committee of Birjand University of Medical Sciences with the code of Ir.Bums.REC. 1398.086.

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References
3. Setiawan JL. Examining entrepreneurial self-efficacy among students. 2014. [Link].
17. Al Taha S. The Role of Strategic Thinking on Entrepreneurship Development (Case Study: Bojnourd University of Medical Sciences and Health Services). Pioneer Congress of Progress; Tehran, 2017. [Persian]. [Link].
23. King DB. Rethinking claims of spiritual intelligence: A
definition, model, and measure. 2008. [Link].
26.Afriyabi F. Investigating the Relationship between Strategic Thinking with Emotional Intelligence and Cultural Intelligence (Study of National Oil Products Distribution Company of Fars Region) [M.A]: Sistan and Baluchestan University; 2013. [Persian]. [Link].
31.Salajegah S, Nami A. Investigating the Relationship between Workplace Spirituality and Employees' Strategic Thinking in Government Organizations in Kerman. 10th International Conference on Strategic Management; Tehran, 2013. [Persian]. [Link].