

Ranking and Evaluating Effectiveness of Teaching Methods in Academic Entrepreneurship by Using Satisfaction Matrix Model

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Abstract

The aim of this exploratory research is to rank and analyze the effectiveness of teaching methods in the field of entrepreneurship using Satisfaction Matrix Model (SatMat). The primary data was collected from 52 students involved in the field of entrepreneurship through a structured questionnaire. The psychometric instrument consisted of 16 teaching methods. Cronbach's alpha, mean and Friedman's test were employed in SPSS to assess the level of satisfaction and dissatisfaction of entrepreneurship students toward the effectiveness of teaching methods and understanding the gap between current situation and desired future state. The results reveal that students considered practical work as the most appropriate and holding auditions as the least appropriate teaching method used by classroom professors. However, the results depicted by SatMat in the University of Sistan and Baluchestan are exactly opposite. According to the model, holding an audition by professors reflected highest performance in entrepreneurial teaching while practical work indicated lowest performance in entrepreneurship education methods. The results of the research deal with development of entrepreneurship education at universities.

Keywords: Effectiveness, Teaching Methods, Academic Entrepreneurship, Satisfaction Matrix Model, University of Sistan and Baluchestan, Iran.

Introduction

Fostering entrepreneurship has become a subject of great concern in public policy (Luthje and Franke, 2003), because policymakers think that higher level of entrepreneurship in a country can boost economic growth and innovation (Sánchez, 2013). Academic research related to the field also reveals a significant relationship between entrepreneurial activity and economic performance (Van Praag and Versloot, 2007). With the progress of the same thought, it was realized that high levels of entrepreneurship can be attained by entrepreneurship education (Sánchez, 2013). Entrepreneurship education in higher educational institutions is a mechanism of educating and preparing students for a better career in entrepreneurial activities and equipping them with the required skills and tools to lead them in a rapidly globalizing marketplace (Nabi and Holden, 2008). In this view, the entrepreneurship teaching methods engage students to learn how to deal better with the complexities of new venture creation (Biggs, 2003). Looking at the increased importance of entrepreneurship

education and its capability to contribute to economic growth, innovation, and job creation, many universities have started offering entrepreneurship education subjects both in academic and non-academic programs (Nian et al. 2014). In Iran, the second master program in entrepreneurship was initiated in the University of Sistan and Baluchestan in 2008 and its faculty of entrepreneurship was founded in 2009. Apart from that, an optional course of 'Fundamentals of Entrepreneurship' was launched in the curriculum for non-business students (Arasti et al. 2012) in the University of Sistan and Baluchestan and many other universities in Iran. Although entrepreneurship education strongly boosts entrepreneurial activity, literature review reveals that very few studies have so far concentrated on evaluating the effectiveness of teaching methods used in academic entrepreneurship in Iranian universities. Keeping these views in mind, this study was undertaken and the following objectives were formulated: i) To investigate the effectiveness of teaching methods in entrepreneurship education at the University of Sistan and Baluchestan, ii) To find out the level of satisfaction and dissatisfaction among students regarding entrepreneurship teaching methods, iii) To find out the importance of each teaching method among students of entrepreneurship, and iv) To determine and describe the gap between the current situation and desired future state of entrepreneurial teaching methods in the University of Sistan and Baluchestan.

Entrepreneurship Education

In today's fast changing and knowledge driven world (Esmaeil Zaei and Kapil, 2016), entrepreneurship has gained importance across economies. Entrepreneurship education for many years had been considered a very vague thought because of the traditional pedagogies used in conventional areas of learning (Rideout and Gray, 2013). The learning journey in entrepreneurship education is designed by bridging the gap between conceptual knowledge and actual action. A transformation has to happen from concepts to feasible reality (Huq and Gilbert, 2017). Mwasalwiba (2010), through his extensive systematic literature review on entrepreneurship education, learnt that there is a collective consideration of what entrepreneurship education wants to achieve. According to his study, entrepreneurship educational programs can be clustered into three areas: 1) Educating about entrepreneurship, 2) Educating for entrepreneurship, and 3) Educating in entrepreneurship.

Various new entrepreneurship programs have been offered at educational institutes across the world. Many researchers believe that participation in entrepreneurship course significantly increases entrepreneurial intention. Still many studies reveal that a strenuous research is required in the fields of entrepreneurship education (Lorz et al, 2013). Kuttim et al. (2014) conducted a study to understand the

contribution of entrepreneurship education in developing entrepreneurial intentions among students. The results revealed that most often lectures and seminars are provided but they are actually not demanded. Students expect more coaching and networking activities in entrepreneurship education. In a study conducted in Italian universities, Iacobucci and Micozzi (2012) explore that entrepreneurship education at the university level can significantly contribute to improve the economic scenario in Italy. It promotes the establishment of new business in knowledge- exhaustive domains.

The world is witnessing immense growth opportunities and investments in entrepreneurship education. Therefore, it is important to relate entrepreneurship education to entrepreneurship specific human capital (Martin et al. 2013). According to a study conducted by Gerba (2012), students who undergo courses in entrepreneurship have better entrepreneurial intention than those who had not undertaken the course. This study also brings to light that male students give higher preference to entrepreneurial careers, achievement and self-efficacy than their female counterparts. There was no major difference in entrepreneurial intentions of students who had exposure to entrepreneurship through family and the ones who did not have any such exposure. The understanding of the concept of entrepreneurship by various stakeholders has a significant impact on the magnitude of its being implemented in various fields of study. As of now, entrepreneurship education has a little space in disciplines other than business schools. There is a need to integrate entrepreneurship education with policy environment in a holistic manner (Kalimasi and Herman, 2016). Blenker et al. (2014) comprehended the methods in entrepreneurship education research and realized that it is both conceptual and methodological. They bring forth the pros and cons of both quantitative and qualitative studies in the field. Quantitative studies form an objective, general and comparable viewpoint but show limited heterogeneity of education. On the other hand, qualitative case studies have profound descriptions but limited comparison and generalizability. There exists a positive relationship between entrepreneurship education and entrepreneurial intentions but no relation was prevalent with feasibility or self-efficacy. The educational system needs to encourage innovation and creativity in students (Hattab, 2014). To fortify entrepreneurship courses, it is imperative to pick up robust intellectual and conceptual foundations from both the fields of entrepreneurship and education (Fayolle, 2013). Seikkula-Leino et al. (2010) studied the role of a teacher in promoting entrepreneurship education. They inferred that in order to provide value oriented development, the teachers also need to learn in terms of reflection. The goal of entrepreneurship education is not just providing a conceptual insight but also to establish an entrepreneurial

mindset in its students by developing the required skills, nurturing relevant attitudes and behaviour and giving a hands on experience to start their own business ventures (Nian et al. 2014). Huber et al. (2014) studied the effectiveness of early entrepreneurship education. They found that knowledge remained unaffected with the program, but it had a significant impact on non-cognitive entrepreneurial skills. Competencies affect entrepreneurial intentions and education has a significant impact on these competencies and intentions towards self-employment. The individuals who have higher levels of competencies accomplish greater performance oriented results (Sanchez, 2013). Oosterbeek et al. (2009) analyzed the influence of entrepreneurship education programs on entrepreneurial skills and motivation. It came as a surprise that the impact of these programs was insignificant and the intention was rather negative.

Teaching Methods in Entrepreneurship Education

Every form of education needs some teaching methods and entrepreneurship education is no different. The skill of the teacher and the teaching method chosen adds effectiveness to entrepreneurship education. A qualitative approach to business planning is necessary to add value to the education imparted through entrepreneurship programs. The most suitable teaching methods that can help in nurturing the art of business planning are: individual projects, case studies, new venture creation project, problem solving and group projects (Arasti et al. 2012). As far as the foundational entrepreneurship courses are concerned, it is vital to deliver a design- driven pedagogy in an environment of equity, justice and constructivism. The use of role plays and humour significantly improves the experience and learning outcomes of the students (Huq et al. 2017). Mwasalwiba (2010), conducted an extensive review of entrepreneurship education and its associated teaching methods and found 13 most important ones. The teaching methods have been categorized as: Traditional methods (normal lectures): 1) lectures, 2) group discussions, 3) case studies, 4) business simulations, 5) business plan creation, 6) role models and guest speakers, and 7) videos and filming. Innovative Methods (Action- based): 1) study visits, 2) presentations, 3) workshops, 4) real venture setting up, 5) games and competitions, and 6) projects.

In innovation driven countries, networking and coaching offerings were a part of entrepreneurship education. Less traditional teaching methods were used with a mix of action oriented teaching (Kuttim et al. 2013). Balan and Metcalfe (2011) give impetus to student engagement in entrepreneurship education. They analyzed six teaching methods, namely: 1) team based learning, 2) one business idea for each class, 3) poster plan and presentation session, 4) entrepreneurship survey, 5) small business awards, and 6) entrepreneur presentations. Out of these, team based learning, poster plan and small business awards were

particularly most effective in engaging students in entrepreneurship education. It is important to enhance the competitive skills in students to improve their employability prospects.

Entrepreneurship education must be linked with skill enrichment. Critical thinking, creativity and innovation must be encouraged as a part of entrepreneurial culture in universities (Kalimasi, Herman, 2016). Entrepreneurship is taught across faculties by both scholars and non-academicians who bring with them varied experiences and backgrounds. It becomes difficult to compare, measure and improve entrepreneurship education when learning objectives and methods of teaching differ considerably (Blenker et al. 2014). It is vital to shape up the entrepreneurial personality of the students which includes ability to take risks, need for achievement and a strong desire to succeed. The courses that impart entrepreneurship education should be designed and delivered in such a way that the entrepreneurial personality of the students is enhanced (Hattab, 2014). Entrepreneurship education is not noticeable in the day to day activities of educational institutions. Rather the instructions and teachings shared by teachers are also insignificant. The aim of entrepreneurship education is not clear to the teachers. Therefore, they lack reflection and vision of the course (Seikkula-Leino et al. 2010). Nian et al. (2014) conducted a study on students' perception of entrepreneurship education and discovered that traditional teaching methods only provide knowledge of entrepreneurship and business strategies. Most of the students were not satisfied by self-directed learning and making individual business plans. Innovative teaching methods like class discussion, group tasks and interactive teaching enhanced creativity and need for independence among students. A research conducted by Huber et al. (2014) suggests that team activities among students yields better results than individual activities. Seikkula-Leino et al. (2010) presents a very interesting research on the teaching methods used in entrepreneurship education. Working approaches should be used which encourages students' participation, better communication and logical thinking. This approach enhances the use of information and communication technology skills. If teaching becomes predictable, both teacher and the student become disinterested in the class. To enhance entrepreneurial competencies, it is important that learning activities are linked to the previous theoretical discussions done in the class. Entrepreneurship programs across educational institutions has been on the rise. Hence, from business schools it has now spread to other academic areas as well. This poses a challenge to educators. The teachers need to train such students in business and new venture planning and improve their academic experience (Desai et al. 2010). Vanevenhoven and Liguori (2013) provided a different teaching dimension in entrepreneurship education. He introduced the concept of entrepreneurship education

project. The students involved with this project provided deep vision on transformation that takes place from being a student to becoming an entrepreneur. Case studies, structured lectures, visits and business plan writing encourages learning by doing and promotes self-confidence (Farashah, 2013). Bae et al. (2014) makes a comparison of entrepreneurship course taught in a semester and entrepreneurship workshops. He concludes that semester programs have fixed contact hours, therefore the absorption time is less and it falls under the category of a disturbed practice. Whereas, in an entrepreneurship workshop the interaction is much more and hence it is a massed practice.

Methods

This paper is an effort to enquire whether entrepreneurship education provided by the University of Sistan and Baluchestan, Iran is an effective tool in fostering entrepreneurial skills in new entrepreneurs or not. The satisfaction level of students regarding entrepreneurship education is evaluated on the following indicators: satisfaction from teaching methods and expected outcome of entrepreneurship education. Hence, the research is exploratory in nature. Relevant literature of entrepreneurship education was reviewed by the researchers which

provided a list of teaching methods used in entrepreneurship. Then, the list was updated with the suggestions from experts. Accordingly, a questionnaire was developed to gather necessary data. Therefore, this research is considered a survey research. A Five-point Likert Scale is used to rate preferences of the respondents in the questionnaire. For investigating and answering research questions, Friedman's test in SPSS has been used. It was employed to compare the mean rank of different teaching methods. The statistical focus group for this research includes all graduates and students in the University of Sistan and Baluchestan, Iran, which sums up to 52 individuals. To check reliability of the questionnaire Cronbach's Alpha coefficient is used. The computed Cronbach's alpha for the current situation and the desired future state of entrepreneurial training methods are respectively 0.94 and 0.96.

The research adopted Satisfaction Matrix Model (SatMat) as proposed by Abduh et al. (2012) with some adjusted change in the psychometric questions. This model encourages participants to share their views and preferences on individual components, i.e., teaching methods, expected outcome of entrepreneurship education and their satisfaction level by using a five-point Likert scale.

Fig 1. Satisfaction Matrix (SatMat) used in the Research (Abduh et al. 2012)

Performance ↑ High ↓ Low	Cell 1 Higher Satisfaction Performance is High and Expectation is Low	Cell 2 Satisfaction Performance is High and Expectation is High
	Cell 3 Dissatisfaction Performance is Low and Expectation is Low	Cell 4 Higher Dissatisfaction Performance is Low and Expectation is High
	Low	High

Expectation →

The model is a matrix describing four conditions- highly satisfied, partly satisfied, dissatisfied or highly dissatisfied. These four quadrants demonstrate the satisfaction levels of students regarding teaching methods adopted in the university. The combined students' ratings for two components, namely, importance of the teaching methods adopted and the performance of entrepreneurship education, provides an overall view of satisfaction. It also provides clear directions to the management of the university on resource optimization. Cell 1 reflects maximum satisfaction of students with the items, because the performance of entrepreneurship education is much higher than the students' expectation. Cell 2 shows that students are partly satisfied with the items. It explains that the performance of entrepreneurship education is in line with students' perceived perception. Cell 3 reveals dissatisfaction of

students with the items. This happens because entrepreneurship education performance is lower than the students' expectation. Finally, Cell 4 reflects high dissatisfaction of students with the items. The reason for this dissatisfaction is that the performance of entrepreneurship education is much lower than students' perception.

Finding and Discussion

This section focusses on the analysis of data gathered from the University of Sistan and Baluchistan and the establishment of results. The collected data was investigated and a comparison was made between the outcomes of entrepreneurship education and the students' perception regarding entrepreneurial education received. The test and its associated result have been presented in Table 1 and Figure 2.

Table 1. Students' perceptions on the importance of teaching resources in entrepreneurship

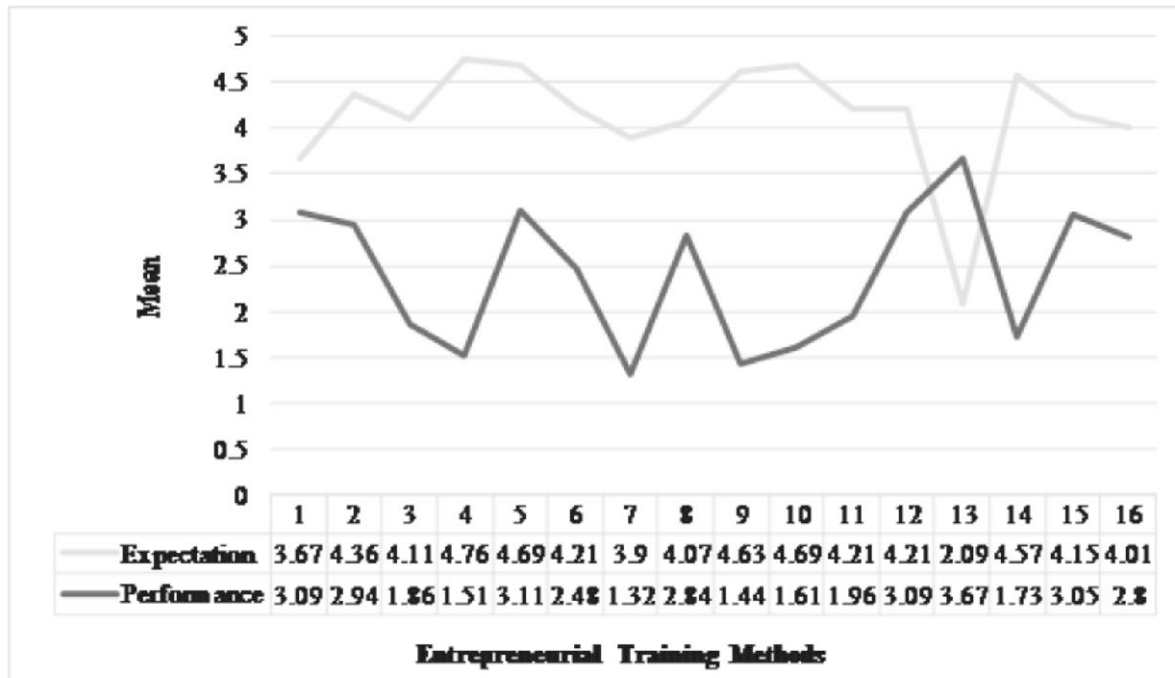
No.	Teaching Methods	Mean of Perceived Importance (Expectation)	Mean of Perceived Performance	Mean Difference
1	The Reading of Entrepreneurship Books	3.67	3.09	- 0.58
2	Entrepreneurship Professors' Speech	4.36	2.94	- 1.42
3	Watching Videos of Successful Entrepreneurs	4.11	1.86	- 2.25
4	Practical Work in the Field of Entrepreneurship	4.76	1.51	- 3.25
5	Writing A Business Plan	4.69	3.11	- 1.58
6	Entrepreneurship Seminars	4.21	2.48	- 1.73
7	Computer Simulation Programs	3.90	1.32	- 2.58
8	Writing Case Studies in the Field of Entrepreneurship	4.07	2.84	- 1.23
9	Visiting the Most Successful Companies in The Field of Entrepreneurship	4.63	1.44	- 3.19
10	Interacting and Working with Entrepreneurs	4.69	1.61	- 3.08
11	Providing Advisory Services to Students in The Field of Entrepreneurship	4.21	1.96	- 2.25
12	Writing Thesis and Papers in the Field of Entrepreneurship	4.21	3.09	- 1.12
13	Hold an Audition by Professors	2.09	3.67	+ 0.77
14	Attend Workshops on Entrepreneurship	4.57	1.73	- 2.84
15	Participation in Conferences Related to Entrepreneurship	4.15	3.05	- 1.1
16	Holding Entrepreneurship Conferences	4.01	2.80	- 1.21
Entrepreneurship Education Methods		4.20	2.41	- 1.79

According to the results shown in Table 1, practical work in the field of entrepreneurship (mean = 4.76), writing a business plan (mean = 4.69), interacting and working with entrepreneurs (mean = 4.69), visiting the most successful companies in the field of entrepreneurship (mean = 4.63), and attending workshops on entrepreneurship (mean = 4.57) were the five most preferred entrepreneurship education methods. On the contrary, 'holding auditions by professors' (mean = 2.09) was the least preferred entrepreneurship education method. It infers that students' expectation will be significantly high after attending entrepreneurship courses which employ interactive teaching methods. The university under study should increase the regularity of these teaching methods in delivering entrepreneurship education. Traditional teaching methods might not be able to teach real-world entrepreneurial skills to the students (Klein and Bullock, 2006). Entrepreneurship education should emphasize on practical utilization of the competencies rather than describing contexts. (Sexton and Bowman, 1987).

If we look at the university under study, we observe that entrepreneurship education in the university is imparted mostly through traditional teaching methods rather than

interactive teaching methods. Holding an audition by professors (mean = 3.67), writing a business plan (mean = 3.11), the reading of entrepreneurship books (mean = 3.09), writing thesis and papers in the field of entrepreneurship (mean = 3.09), and participation in conferences related to entrepreneurship (mean = 3.05) are the five most important entrepreneurship education methods. Computer simulation programs (mean = 1.32) was the least important entrepreneurship education method based on the performance of entrepreneurship education offered by the university. It confirms the fact the entrepreneurship courses are taught with traditional teaching methods in the university. Further, the results show that the students' expectation after undergoing the course on entrepreneurship is 4.20 on five-point Likert scale whereas the actual performance score is 2.41. Hence, we believe that a balance need to be maintained to bridge the gap between expectation and satisfaction on students undergoing entrepreneurship education. The teaching methods should help build innovative and creative ideas, decision making skills and logical and analytical approach in students so that they can face and manage real world problems efficiently.

Fig 2. The gap between the current situation and the desired future state of entrepreneurial training methods

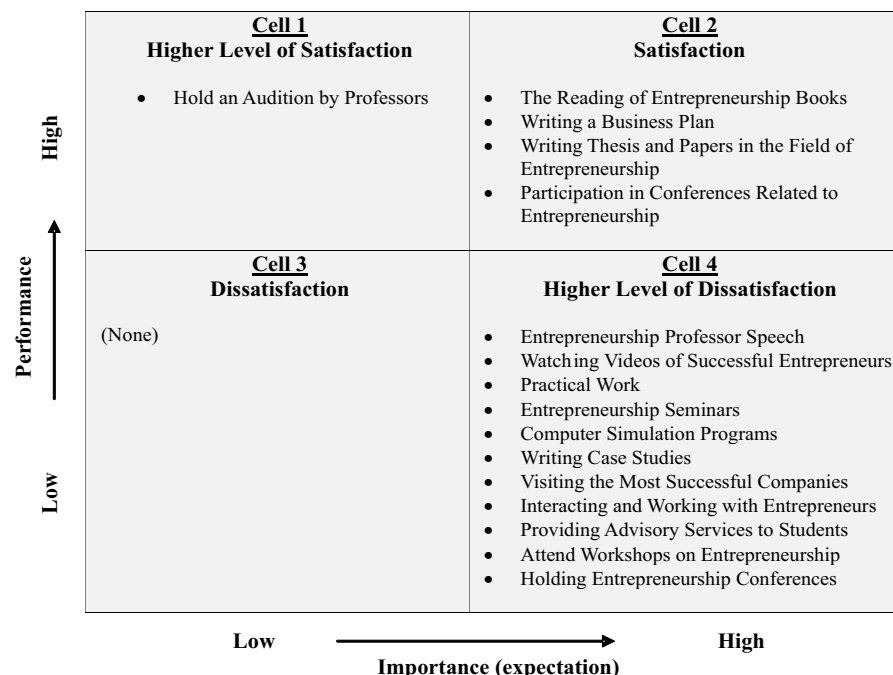


According to the comparison results shown in Figure 2, a significant gap has been observed between the current situation and the desired future state of entrepreneurial training methods (mean = 3.25) while least gap exists in the reading of entrepreneurship books (mean = 0.58). It can be inferred by the results that due to limited time availability, lack of recruitment, high cost for providing additional lecturer or small portion of contribution, the current

situation of entrepreneurship education appears dismal in the University of Sistan and Baluchestan.

Figure 3 presents a classification of all 16 indicators described in the questionnaire by using Satisfaction Matrix Model (SatMat). The matrix shows levels of satisfaction based on students' opinions on preferences of individual teaching methods and expected outcome of entrepreneurship education.

Fig 3. Satisfaction Matrix (SatMat) of learning and teaching resource in entrepreneurship filed



According to the results shown in Figure 3, Cell 1 represents that 'holding an audition by professors' reflects maximum satisfaction of students on entrepreneurship education and least satisfaction on students' expectation. Cell 2 shows that 'reading entrepreneurship books', 'writing a business plan', 'writing thesis and papers in the field of entrepreneurship', and 'participation in conferences related to entrepreneurship' reflects moderate satisfaction of students on entrepreneurship education is in line with students' expectation. Cell 3 shows none of the indicators received dissatisfaction due to the low performance on entrepreneurship education and students' perception as well. Finally, Cell 4 represents that the 'entrepreneurship professor speech', 'watching videos of successful

entrepreneurs', 'practical work', 'entrepreneurship seminars', 'computer simulation programs', 'writing case studies', 'visiting the most successful companies', 'interacting and working with entrepreneurs', 'providing advisory services to students', 'attending workshops on entrepreneurship', and 'holding entrepreneurship conferences' reflects maximum dissatisfaction of students on entrepreneurship education and higher satisfaction based on students' expectation.

In the end, Table 2 indicates the output of SPSS using Friedman test ($N = 5$; Chi-square = 231/866; $df = 15$) for teaching methods used for teaching entrepreneurship to students. As $P = (0.000)$, the mean rank of teaching methods for entrepreneurship education is significant.

Table 2. Output of Friedman test for teaching methods among entrepreneurship filed students.

No.	Teaching Method	Mean Rank
1	Practical Work	11.60
2	Interacting and Working with Entrepreneurs	11.40
3	Writing a Business Plan	11.02
4	Visiting the Most Successful Companies	10.97
5	Attend Workshops on Entrepreneurship	10.41
6	Entrepreneurship Professor Speech	9.35
7	Providing Advisory Services to Students	8.51
8	Watching Videos of Successful Entrepreneurs	8.28
9	Writing Thesis and Papers in the Field of Entrepreneurship	8.25
10	Entrepreneurship Seminars	8.15
11	Participation in Conferences Related to Entrepreneurship	7.76
12	Writing Case Studies	7.64
13	Holding Entrepreneurship Conferences	6.96
14	Computer Simulation Programs	6.63
15	The Reading of Entrepreneurship Books	5.88
16	Hold an Audition by Professors	3.18

According to the results of the test shown in Table 2, the output of Friedman test shows that "practical work", "interacting and working with entrepreneurs" and "writing a business plan" are the three most appropriate teaching methods among entrepreneurship students. It is noteworthy that methods such as "holding auditions by professors" or "the reading of entrepreneurship books" are less appropriate methods.

Conclusion

The main objective of this research was to rank and analyze the effectiveness of teaching methods in academic entrepreneurship at the University of Sistan and Baluchestan by using Satisfaction Matrix Model. The results reveal weaknesses in delivering entrepreneurship education and ineffectiveness of training methods used. The results also conclude that practical work was the most appropriate and holding auditions by classroom professors was the least appropriate teaching method as per the

students' attitude. Even though students' expectation is likely to be very high after attending entrepreneurship courses with the interactive teaching methods, there is a stark difference in the University of Sistan and Baluchestan. After applying SatMat it was explored that traditional methods had a higher preference over interactive methods in the university. Although these methods were highly preferred, the university needs to increase the regularity of interactive teaching methods also as traditional methods may not provide hands-on experience to the students (Klein and Bullock, 2006). Therefore, entrepreneurship education must focus on the practical aspects of the area rather than contextual discussions (Sexton and Bowman, 1987). In this regard, we believe that entrepreneurial teaching methods should be balanced and combined with more advanced methods, so that students can develop analytical, logical and creative problem solving skills to with real problems on the field effectively.

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