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Analysis of Internal, External and Institutional Structure in the Effectiveness of Tourism Education Courses: A study Based on Confirmatory Factor Analysis

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Abstract: The overall purpose of this study was to analyze the factor structure of the scale of effectiveness of tourism education courses. The research method is descriptive methodology. The statistical population of the study included all participants in tourism education projects who were selected as a sample using simple random sampling based on Cochran's formula of 223 people. A researcher-made tool was designed based on a three-dimensional model of internal, external and institutional effectiveness. The scale consisted of 3 subscales and 27 items from the Likert five-choice range. In order to measure the validity of the scale, two methods of item analysis and confirmation factor analysis of the first and second order and to measure its reliability, Cronbach's alpha method was used, which showed the desired validity and reliability of the instrument. The results of item analysis indicated a significant correlation between each item and the corresponding dimension subscale. The result of the first and second order confirmatory factor analysis also showed that each item has a high validity to explain the relevant dimension and to explain the effectiveness of tourism training courses. Also, based on Cronbach's alpha values, the reliability of the scale and related subscales has been evaluated as desirable. Based on the findings of this study, it indicates that this scale can be used to measure the effectiveness of tourism education courses in internal, external and institutional dimensions. Therefore, planners and officials can use it to determine the effectiveness of tourism training courses.

Keywords: Factor analysis, internal effectiveness, tourism education, validity, reliability

Introduction

In today's changing environment, the success of any organization requires skilled and efficient human resources. Competition, organizational structures, today's markets and the labor market are such that investment in human resources has been proposed as a necessary strategy for managers and organizations (Salas et al., 2012). Among the most important areas of investment in human resources is education (Kirkpatrick & Kirkpatrick, 2006). It is worth noting that human capital can be developed in two ways, absorption from outside and improvement from inside, the second way is done through training and improvement and is more logical and cost-effective for organizations. Basically, education is a way whose purpose is to create transformation and renovation. The education does not lead to any kind of transformation is far from its true meaning (Naqibzadeh, 1997).

Today, training and improvement of human resources is considered as one of the main strategies of organizations for positive adaptation to changing conditions. In addition to the fact that training plays

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an important role in the development and promotion of the necessary skills for the proper work by employees, it also helps managers and planners to reveal their thoughts about the ways of performing tasks (Hosseini □, 2016; van der Merwe, 2016). Now, what becomes extremely important in the design and implementation of training is the evaluation of this type of training; In order to be able to design supplementary training and orientation in organizational effectiveness from the obtained results. Therefore, educational activities should be an inseparable part of any organizational program, in order to successfully adapt that organization to future developments. Human development through education as a process to improve and elevate capabilities and abilities, increase knowledge and awareness, and change people's attitude and attitude, in turn, plays the most fundamental role in the improvement and development of human capital in the organization.

It can be acknowledged that one of the organizations that can play an effective role in the economic development of different countries of the world is the tourism organization, which is increasing rapidly with the growth of the tourism industry. Therefore, the necessity of education has become a vital issue for the tourism industry. Therefore, evaluating the effectiveness of the education system in this industry from different dimensions can be considered as an effective step towards guaranteeing and developing its effectiveness. Today, the tourism industry is known as one of the most extensive service industries in the world ((Santa-Cruz & López-Guzmán, 2017) and as one of the most efficient and profitable economic activities in the world, which can contribute significantly in the sustainable development of a country, region and the world in economic, political, social and cultural dimensions (Ishmael-Robertson, 2018). Tourism is one of the most complex human businesses that brings many economic, social, political and cultural achievements for its pioneers (Laing, 2018). For this reason, many planners consider it as the main pillar of development, because as a multi-faceted activity, it has various positive functions, including job creation, earning income, attracting foreign exchange and strengthening infrastructures, etc. (World Travel and Tourism Council, 2014).

The tourism industry has been raised as one of the necessities of the society's economy. In the field of efficient human resources, the tourism industry seeks to obtain trained and expert employees who can provide useful and beneficial programs to tourists by relying on their experience and expertise. Meanwhile, the employees of the tourism industry receive various in-service trainings every year. The internal and external evaluation of these courses is one of the main goals of the tourism industry, because every year millions of IRR are spent on in-service training, and a lot of time and energy is spent by the employees and the industry to implement these trainings. Therefore, it is necessary to find out the effectiveness of these trainings through internal and external evaluation.

Various frameworks and models have been presented to evaluate the effectiveness of formal and informal training courses, among which the following can be mentioned: "Hamblin model, CIRO model, Hoggs model, Liderman model, Tyler's goal-oriented evaluation model, Halton transition, Kirkpatrick model, Phillips model, DACUM model and ISO 10015 evaluation model (Ebrahimi & Hasami, 2014).

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Another model presented in this context is the internal, external and institutional three-dimensional evaluation model (TorkZadeh & Keshavarzi, 2016).

In relation to the mentioned model, it can be said that the evaluation of the internal effectiveness of education is done in order to clarify the internal results of the work of the educational program, and in that, the effects of the educational program on the participants and in general on the emergence of the necessary change in a part or in the whole organization and as a result, the changes made in the behavior of the participants are investigated. Internal effectiveness includes the quality and adequacy of trainings, conducted research, scientific-social services provided by the organization and its efficiency for learners while maintaining the integrity of organizational integrity (TorkZadeh & Keshavarzi, 2016). In external effectiveness, the functions are defined precisely in relation to the external environment and social goals, and the degree of implementation of educational programs and the changes that occur in the behavior and actions of learners according to the predetermined goals are considered. For this purpose, the manifestation of the three dimensions of behavior (knowledge, skill, attitude) and the facilitation of adaptation in the desired environment are considered (TorkZadeh & Keshavarzi, 2016). External effectiveness is the degree of applicability of outputs and their impact on the environment. The organization must give effective responses to the environmental needs and have the necessary efficiency in the environment and practical situations (TorkZadeh & Keshavarzi, 2016). On the other hand, the realization of the existential philosophy of the desired activity is called the effectiveness of the institution, which is proposed at the macro level. To what extent the organization's activities have been able to lead to the fulfillment of the organization's interests in the society, and the worthy role of the organization in the course of national development, as well as the formation of positive relationships and changes (TorkZadeh & Keshavarzi, 2016).

In this research, the effectiveness of tourism training courses in Hormozgan province was studied and investigated based on the mentioned model in three aspects of internal, external and institutional effectiveness. According to the topic and scope of the current research and the situational requirements of evaluating the effectiveness of tourism education courses, it seems that the use of the internal, external and institutional three-dimensional evaluation model can be more capable and sufficient. Based on it, it is necessary to pay more attention to hold tourism training courses and evaluate the effectiveness of these courses, neglecting which can cause many damages in the long run. In this regard, in explaining the problem-oriented nature of this research, it can be stated that in recent years, despite the small growth in the number of branches and human resources working in the tourism industry, it is not clear how much is the quality of service provided by this system. The size is appropriate to the needs of tourists and it is necessary to evaluate the training provided to the employees in this field. Therefore, it is appropriate to have a documented and reliable tool available to evaluate the effectiveness of these courses. Based on this, in this research, an attempt was made to design the effectiveness scale of tourism

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education courses by adapting the three-dimensional model of internal, external and institutional effectiveness and by analyzing the factorial structure of this scale.

Material and Methods

The descriptive research method is correlation type. The statistical population of the research included all participants in the tourism education projects held in Hormozgan province (experts and tour leaders of Hormozgan province) during the years 2019-2021 (535 people) who were selected using simple random sampling. Using Cochran's formula, the sample included 223 people from all participants in tourism education projects that 126 (56.50 %) were female and 97 (43.3 %) were male.

In order to collect data, a researcher-made tool was used, which was designed based on the three-dimensional model of internal, external and institutional effectiveness (TorkZadeh & Keshavarzi, 2016). This researcher-made scale included 3 subscales and 27 items with a five-point Likert, which is classified from very high = 5 to very low = 1. The dimensions of the effectiveness scale of tourism education courses are internal effectiveness (items 1-11), external effectiveness (12-19) and institutional effectiveness (items 20-27). The scale that was developed in this study is available on request from the corresponding author. In order to measure the validity of the questionnaire, two methods of item analysis and first- and second-order confirmatory factor analysis were used. Cronbach's alpha method was used to measure its reliability. In order to carry out this research, the researcher obtained permission and made the necessary arrangements, and the questionnaire was provided to the tourism experts and tour leaders of Hormozgan province. After making the necessary arrangements to select the participants of the research and to obtain the satisfaction of the sample group, the framework was developed and in line with the face validity check, it was given to tourism experts and tour leaders in person and by email. After analyzing the opinions, the new model was given to a number of participants to check its content validity. In all stages of conducting this research, in the cases where people's personal information has been accessed, the principle of confidentiality and human ethical principles have been observed.

Results

In order to check the descriptive information, the mean and standard deviation of the variables of the present study were examined, and the results was provided in Table 1.

Table 1. Mean and standard deviation of research variables

Variable	Dimensions	Mean	SD
Effectiveness	Internal	3.63	0.75
	External	3.51	0.89
	Institutional	3.54	0.91

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Investigating the validity and reliability of TEC model

A) Item analysis and Cronbach's alpha

The validity and reliability of each of the dimensions of the effectiveness scale of tourism education courses were calculated using the method of item analysis and Cronbach's alpha. According to the results reported in Table 2, the validity of each dimension of the scale was calculated using the item analysis method, and according to the obtained correlation coefficient, each of the components has high validity. Also, in order to measure the reliability of each of the dimensions, Cronbach's alpha method was used, and the results show that each of the dimensions has relatively high reliability.

Table 2. Validity and reliability of TEC model

Components	Correlation coefficient range	p	Alpha
Internal	0.56-0.79	0.001	0.89
External	0.56-0.82	0.001	0.83
Institutional	0.62-0.85	0.001	0.88
Total	0.50-0.79	0.001	0.94

B) Confirmatory factor analysis

Second order confirmatory factor analysis: The results of this analysis showed that each type of effectiveness has high validity. In this way, external effectiveness with a factor load of 0.95, institutional effectiveness with a factor load of 0.91, and internal effectiveness with a factor load of 0.90 have the highest to the lowest factor loading (Figure 1).

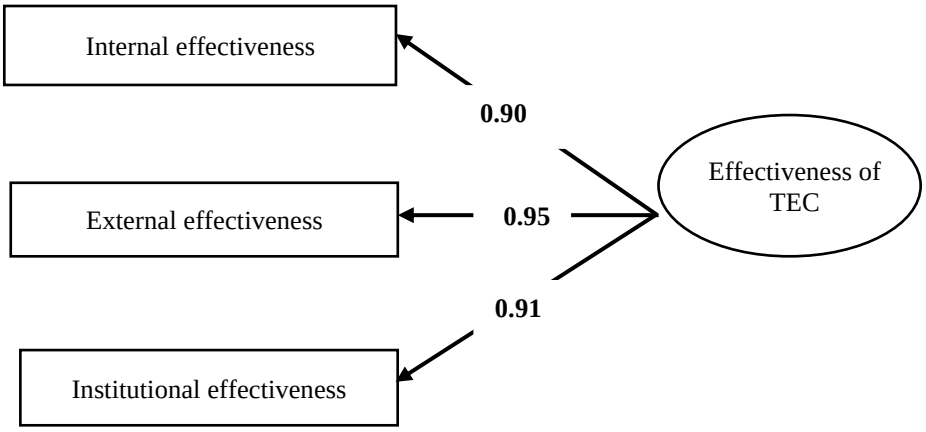

Figure 1. Coefficients of second-order confirmatory factor analysis (effectiveness of tourism education courses model)

First-order confirmatory factor analysis: The results obtained from the confirmatory factor analysis showed that at the level of internal effectiveness, external effectiveness and institutional effectiveness the explanatory power of the components is significant. Components, items and values of beta were provided in table 3.

Table 3. Values of beta of first-order confirmatory factor analysis (effectiveness of TEC model)

Items	Components		
	Internal	External	Institutional
1	**0.75**		
2	**0.74**		
3	**0.77**		
4	**0.77**		
5	**0.71**		
6	**0.73**		
7	**0.79**		
8	**0.71**		
9	**0.76**		
10	**0.72**		
11	**0.71**		
12	**0.74**		
13		**0.76**	
14		**0.76**	
15		**0.81**	
16		**0.86**	
17		**0.86**	
18		**0.85**	
19		**0.82**	
20			**0.82**
21			**0.76**
22			**0.83**
23			**0.82**
24			**0.81**
25			**0.83**
26			**0.81**
27			**0.84**

In table 4 provided the fit indicators related to the confirmatory factor analysis of the effectiveness of TEC model.

Table 4. Fit indicators related to the confirmatory factor analysis of the effectiveness of TEC model.

Indices	CMIN	DF	X^2/DF	p	PCFI	RMSEA
Before the model modification	954.560	321	2.97	0.001	0.80	0.09
Before the model modification	754.978	313	2.41	0.001	0.81	0.08

As can be seen in table 4, the results of the confirmatory factor analysis for the model of the effectiveness of tourism education courses showed that the model did not have a good fit at the first analysis (the model before the modification), which by carrying out the modifications suggested by AMOS software, the model showed an improved fit. Finally, the results of the analysis exhibited that the effectiveness of tourism education courses model has the appropriate validity. Correspondingly, the relationship between types of effectiveness (internal, external and institutional) has been examined and provided in table 5. According the table 5, there is a positive and significant relationship between types of effectiveness with the total score.

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Table5. Correlation between types of effectiveness (internal, external and institutional) and total score

Variable	Effectiveness	Internal	External
Internal	0.94**		
External	o.95**	0.85**	
Institutional	0.94**	0.81**	0.87**

**p < 0.001

Discussion

Today, the countries of the world are trying to establish a connection between education and national development programs and the promotion of knowledge and technology; Therefore, national development policies are fundamentally connected to education. In fact, it can be said that one of the most valuable resources that society has for progress and development is education. Most developed countries and developing countries have solved problems and met the needs of national goals in education, and today most third world countries believe that the main basis of national development is rapid quantitative and qualitative expansion of educational opportunities. The more and better-quality education is provided, the faster national development will take place (Tomlinson, 2005). In this regard, it is clear that measuring the effectiveness of training courses is of high importance and sensitivity, and if done correctly, it will provide a more objective basis for planning (Airey & Tribe, 2006).

On the other hand, the tourism industry causes the content of development and changes in the status of a certain group of economic and social factors. In many countries, the use of tourism as a growth pole has caused dramatic changes in economic, social and cultural conditions. In Iran, due to the existence of historical and natural attractions that have a favorable distribution, the use of tourism as a growth pole for regional development should be given more attention. Therefore, it can be acknowledged that evaluating the effectiveness of education has become a natural and vital thing for the tourism industry. According to the stated contents, it is necessary to conduct this research in order to prepare a documented and valid tool to review and evaluate the effectiveness of tourism education courses; Therefore, in this research, an attempt was made to help achieve this goal by analyzing the factor structure of the effectiveness scale of tourism education courses. The results of the first- and second-order confirmatory factor analysis indicated that the items developed in the above-mentioned scale explained the effectiveness of tourism training courses well. In sum, the findings of this study indicate the construct validity of the scale in the tourism industry, and this scale is a suitable tool for evaluating the effectiveness of tourism education courses. Therefore, planners and related officials can use it to review and evaluate the effectiveness of tourism education courses.

According to the developed model, it can be said that if the managers are successful in providing quality and coherent training courses (internal effectiveness), we can expect a favorable and appropriate performance of transferring learning to the work environment (external effectiveness). In this regard, managers can by taking the following measures (suitability of the content presented in tourism training courses with the expected results and objectives; suitability of the evaluation methods with the expected

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results and objectives; suitability of the educational content with the evaluation methods; suitability of the educational content with teaching methods; appropriateness of educational content with the topics determined in the educational course; appropriate quality of the content provided in the educational course; providing up-to-date content in accordance with environmental conditions and needs; existence of dynamic interactions between the instructor, learners and the environment; existence of needs assessment, comprehensive and realistic educational content of the course; providing a creative educational environment by the instructors; continuous evaluation of the materials presented by the instructors) to increase the internal effectiveness of the tourism education courses.

On the other hand, by training skilled human resources and specialist based on environmental needs; practical applicability of learning by skill seekers/learners; responsiveness of trainings to the needs of the external environment in the field of tourism; strengthening self-confidence in skill seekers/learners; ensuring the necessary satisfaction among stakeholders (general, teachers and specialists, etc.); creating innovation and dynamism in tourism work environments, improving the innovation (creativity) in skill seekers and improvement of professional capabilities can increase external effectiveness in the work environment. Also, managers by developing specialized knowledge, creating a positive external image of the tourism industry, gaining a competitive advantage in the social environment, developing scientific and professional ethics in tourism work space, helping to achieve national self-sufficiency, helping to create sustainable job opportunities, helping to economize and increase productivity in the tourism industry and responding to the needs of the environment increase the institutional effectiveness of tourism courses.

Today, in organizations, employee training is the most essential factor in improving, changing and developing human resources. Employee training is a process that provides adaptation and adaptability of employees to the changing environment of the organization and better adaptation of the organization to the external environment. As a result, trained employees react more consciously to organizational changes, and since the life of organizations largely depends on the knowledge and skills of its employees, trained people will play a more effective role in the efficiency and productivity of the organization. In this context, it can be said that the more the provided training can lead to the expected performance of the employees, the more it can be concluded that the training course will have more external effectiveness. Therefore, managers can improve the quality of training by providing training content that fits the goals of the organization and the job needs of employees. Based on this, if due to reasons such as the lack of experienced teachers in the field of education, the educational facilities is not maintained at an optimal level, we cannot expect to learn and transfer this learning to the real work environment. Based on our results, it is suggested to hold TEC by experienced experts and trainers, to provide hardware and software facilities and equipment to optimize the education process and to make all training courses continuous and targeted with organizational goals and policies.

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