

Designing a model for explaining the social responsibilities of universities with a social entrepreneurship approach

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Abstract

Nowadays, great attention is paid to the development of social entrepreneurship as a social and philanthropic mission, and one of the ways to solve some problems and social damages. Entrepreneurship has had a positive and direct impact on many different activities of countries and can cause economic development and create job opportunities; on the other hand, it can improve the social and cultural condition of the society. The present study was conducted with the aim of designing a model to explain the social responsibilities of universities with the approach of social entrepreneurship in the universities of Khuzestan province. The present research method is developmental-exploratory. The statistical population of the research in the qualitative phase includes 30 university professors that are selected using purposeful sampling and the brainstorming method (interview with experts) and it continued until it reached theoretical saturation in the quantitative phase according to Cochran's formula, the number of a statistical sample is equal to 380 people, which was selected through stratified random sampling method. In this research, the Delphi method based on the phenomenon-based identification, causal conditions, contextual and intervening factors, strategies and consequences and the relationship between them has been used. Then, the conceptual model of the research was prepared, compiled and drawn using the interpretative structural modelling method. By entering the operational stage and using structured questionnaires whose categories were extracted from similar domestic and foreign research questionnaires and based on the opinion of subject matter experts, their validity and reliability have been proven using standard tests, the relationships between the identified components were investigated and finally, the operational model of the research was evaluated using Spss 24 and Smart Pls3 software. The results showed that 36 concepts regarding social entrepreneurship and 48 concepts of social responsibility were obtained. Also, by examining the relationships between the variables and evaluating the model, it was found that the obtained model also has an excellent fit.

Keywords: entrepreneurship, social entrepreneurship, social responsibility, social damages
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1 Introduction

Since, on the one hand, higher education has become complete, mature and diversified in the competitive environment and market, and on the other hand, its national and global environment is in a deep, extensive and continuous

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transformation; therefore, universities must change their form and structure to face challenges and opportunities. Universities are not only providers of educational and research services; rather, they shape the identity of responsible people towards their country and other countries of the world. Therefore, universities play an important role in creating the ability of the future generation in order to achieve success, face the phenomenon of globalization and economic growth, and build a sustainable future for people around the world. In this regard, academic social responsibility has become the central topic of influential debates in organizations related to higher education in the 21st century [9]. On the other hand, surveys have shown that entrepreneurs are facing difficulties in implementing their ideas. On the one hand, big capitalists don't have the opportunity to listen to the ideas of entrepreneurs and deal with small tasks, and on the other hand, they spend their capital on big projects, as a result, the existence of the university, which has the role of a support center of entrepreneurship as a bridge between and capitalists and entrepreneurs is essential. On the other hand, strengthening the culture of social entrepreneurship will increase social and economic success on a local, national, and global scale, which requires the planning of extensive training and promotion of entrepreneurship culture. Social entrepreneurship is a process that requires planning in the educational and research system and the implementation of its programs has spread from families, schools to universities and organizations, and it makes people use their expertise and power of initiative and creativity, opportunities and capabilities to create productive and income-generating employment [7]. Most of the studies conducted have compared commercial and social entrepreneurs and the studies conducted in the field of social entrepreneurship process are very limited. Considering the difference between commercial and social entrepreneurs in their individual characteristics, motivations, mission, opportunity sources and how to identify opportunities, the field of activity, mobilization of resources and performance, the intention of social entrepreneurs will be different from commercial entrepreneurs, but what is visible as the basic problem in the education system of the country is x to promote this important subject [7]. Issues such as the increasing pressure on the government and the Ministry of Science, Research and Technology and reduction of the government budget in recent years, the increase in number of graduates, the increasing unemployment and the employment crisis of young people, especially the educated ones, the change in the expectations of university applicants, competition, changing needs of the market, responsibility and accountability against society, revolution of quality and productivity, change in knowledge and the necessity of knowledge management and its commercialization, the necessity of transformation in traditional education and the trend towards new educations and applied research, the need to use technologies and other things that have caused changes in the university's mission, role and functions, has made clear the need for academic entrepreneurship and creation of an entrepreneurial university as one of the vital strategic and key tools of higher education to face these changes and pressures.

Also, in recent years, innovation has been emphasized in all aspects of the university, but in the latest approach, social entrepreneurship has also been proposed as an integral part of the entrepreneurial university. This approach of the entrepreneurial university has been formed in response to the concerns about the weakening of the public orientation of higher education by the profit-seeking market, and in the traditional concept of the entrepreneurial university, the entrepreneurial activities of the universities are interpreted in terms of economic benefits, but recently more attention has been drawn to the social value of such scientific entrepreneurship. Universities that are supposed to be on the path of continued excellence and serve the development and progress of their communities are called social entrepreneurial universities in the new definitions [6]; with this approach, investigation of the social entrepreneurship issue should get attention in the country's educational organizations such as universities. Based on this, the main goal of the current research is to design a model to explain the social responsibilities of universities with a social entrepreneurship approach. Therefore, in this regard, the research seeks to answer general questions including the following:

1. What are the dimensions of social entrepreneurship in the universities of Khuzestan province?
2. What are the main components of social entrepreneurship in the universities of Khuzestan province?
3. What are the dimensions of social responsibility in the universities of Khuzestan province?
4. What are the main components of social responsibility in the universities of Khuzestan province?
5. What is the extracted model regarding the explanation of the social responsibilities of universities by the approach of social entrepreneurship in the universities of Khuzestan province?
6. What is the validity of the extracted model regarding the explanation of the social responsibilities of universities with the approach of social entrepreneurship in the universities of Khuzestan province?

2 Research background

Habibi and his colleagues [1] investigated the impact of social entrepreneurship orientation on social innovation, the results of this research showed that social entrepreneurship orientation has a positive significant effect on social innovation, also social innovation has a positive significant effect on innovative products and services.

Farhadirad and his colleagues in [2] identified and analyzed the social responsibilities of the university in research. Based on the obtained results, 20 central categories of social responsibilities of the university were identified, and the logic of Carroll's model was used to categorize them. Also, the single-sample T-test showed that the status of the social responsibility components of the university in the overall scale of 2.92 was higher than the hypothetical average of the research (2.5) and the T-value was calculated as 15.69 that they were a favourable and satisfactory condition.

Nad Alipour Palaki and his colleagues [6] conducted research with the aim of explaining the background conditions for the development of social entrepreneurship in universities and higher education institutions in Iran. The results showed that factors such as potential talents with the sub-categories of personal qualifications and group qualifications, public policies with the sub-categories of formalization and procedures of entrepreneurs and material and spiritual investment with the sub-categories of social capital and financial capital were identified as background factors for the development of social entrepreneurship in higher education.

Fazeli and his colleagues in [3] identified the challenges and social strategic activities of social entrepreneurship. The findings of this research showed that social entrepreneurs need to know the challenges and strategic actions in the surrounding environment. Recognizing social challenges makes them able to recognize an important part of their obstacles and introduce them to the environment and society around them and act with cooperation and consensus to solve them.

Zare and Safari Dashtaki [11], designed and explained a paradigm model of social entrepreneurship with the approach of empowering head-of-household women. The results showed that empowering policies as a phenomenon based and in interaction with other factors leads to the formation of social entrepreneurship and capacity building, physical and mental strengthening and supporting laws are very effective in the formation of enabling policies finally this attitude becomes the basis for the emergence of the phenomenon of social entrepreneurship.

Shokouhi and his colleagues in [10], identified and prioritized social entrepreneurship development strategies, the results showed that political, institutional, and legal factors are the most effective factors in the development of social entrepreneurship from the experts' point of view. The head of household women and the factor of business facilities is ranked second. Also, out of 37 determined strategies, insurance strategies for the head of household women, product marketing support and services, and providing employment facilities to the head of household women, ranked first to third respectively.

Nazha Gali and his colleagues, in [4], investigated the effect of the orientation towards social entrepreneurship, the behavioral measure of social entrepreneurship of the organization on the social and financial performance of a sample of Austrian companies. Despite the growth of research interests in the field of social entrepreneurship, the field remains fragmented, and this has led to calls for a careful examination of the implications of social entrepreneurship for companies. Using stakeholder theory and hybrid organization, they presented the hypothesis that social performance mediates the relationship between the tendency towards social entrepreneurship and financial performance. Analyzing one sample of 1,156 companies, they found that the relationship between social entrepreneurship and financial performance with the mediation of social performance is partially positive, even though the direct effect is negative.

Shaari et al. [8], titled the role of social responsibility of Malaysian universities in educating worthy citizens, which they conducted in Malaysia, found that a university with suitable facilities and services that can provide to society is effective in educating good and decent citizens in Malaysia.

Fawad Latif [5], conducted research titled development and trust building of a customer orientation scale for measuring university social responsibility. The results of this research stated that; this research showed that the social responsibility of the university has seven basic dimensions: 1- operational responsibilities 2- research and development responsibilities 3- customer-oriented responsibilities 4- legal responsibilities. These four responsibilities were classified. The fifth responsibility is a moral responsibility, the sixth responsibility is voluntary responsibility, and the seventh responsibility is humanitarian responsibility.

3 Research method

The present research method is a developmental-exploratory study. In this research, the Delphi method based on the phenomenon-based identification, causal conditions, contextual and intervening factors, strategies and consequences and the relationship between them has been used. In developing a research plan using mixed methods, the researcher must precisely justify the necessity of using both quantitative and qualitative research. Since in this research, the components and indicators of the model of social responsibility of the university and social entrepreneurship have been identified and explained, therefore, the quantitative rationalist view cannot be the basis of the research alone, and a mixed quantitative and qualitative approach should be taken into account. The statistical population of the

research in the qualitative phase includes 30 university professors that have been selected using purposeful sampling and the brainstorming method (interview with experts) and it continued until it reached theoretical saturation and in the quantitative phase, according to Cochran's formula, the number of statistical samples is equal to 380 people, which was selected through stratified random sampling method. In this research, in the first step, the main factors and characteristics of the university's social responsibility and social entrepreneurship are extracted from the depth of the research literature, theoretical foundations and exploratory interviews about the subject in a meta-mixed method and then with the help of the Delphi technique and using the views of experts and elites, a number of components that are more compatible with the target society have been extracted and scored. After analyzing the data in the qualitative part of the research, 17 main categories in the social responsibility model of the university and 14 main categories in the social entrepreneurship model which were agreed upon by the experts were identified. Then, the conceptual model of the research was prepared, compiled and drawn using the interpretative structural modelling method. By entering the operational stage and using structured questionnaires whose categories were extracted from similar domestic and foreign research questionnaires and based on the opinion of subject matter experts and their validity and reliability have been proven using standard tests, relationships between the identified components were investigated and finally, the operational model of the research was evaluated using Spss 24 and Smart Pls3 software. To evaluate the reliability of the interview process, the percentage of agreement between the two interviewers and the coder was used. In order to measure the reliability of the test-retest method, three interviews are selected as samples from among the conducted interviews and each of them is coded again in a short and specific time interval, or two interviewers code the data separately and in each of the interviews, codes that are similar in the opinion of two people are identified as "agreement" and non-similar codes as "disagreement". The percentage of agreement within the subject that is analyzed as a reliability index was calculated through the following formula:

$$\text{Percentage of intra-subject agreement} = (\text{number of agreements} \times 2) / \text{total number of codes} \times 100.$$

The number of statistical samples was selected based on Cochran's formula:

$$n = \frac{\frac{z^2 pq}{d^2}}{1 + \frac{1}{N} \left[\frac{z^2 pq}{d^2} - 1 \right]}$$

analyze Covariance structures or causal modeling or structural equation model, one of the main methods of analysis and the analysis of complex structures:

$$COV(x, y) = \frac{1}{n-1} \sum_{i=1}^n (x_i - \mu_x)(y_i - \mu_y).$$

In this research, regression has been used to perform path analysis:

$$S_{xy} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1}.$$

Cronbach's alpha was used to evaluate the reliability of the questionnaire:

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum S_i^2}{S^2} \right).$$

Friedman's test was used to rank dimensions, components and indicators of social responsibility:

$$x_r^2 = \frac{12}{nk(k+1)} \sum_{j=1}^k R_j^2 - 3n(k+1).$$

Kolmergorov-Smirnov test was used to determine the homogeneity of experimental data with selected statistical distributions:

$$D_n = \sup_x |F_n(x) - F(x)|.$$

4 Research findings

4.1 Identification of components

Open coding: Open coding consists of two stages: In the first stage, each component is given a title and a label. This title, the so-called "code", should be indicative of the content of the data, so that the researcher and reader, by observing this title and title, can understand the meaning of the sentences to a large extent. The second stage is focused coding, which consists of using the most meaningful or abundant primary codes to sift and reduce a large amount of data. In this stage of coding, the researcher puts similar and common codes in the form of a single category by determining and arranging the codes with concepts. The naming of the categories is based on the researcher's understanding of the topic and the common content of the open codes (concepts). In this research, 48 concepts were extracted, which are shown in Table 1:

Table 1: The initial stage of open coding of the qualitative data of the social responsibility model of the university

Row	Code	Concepts	Categories
1	F1	Applying the continuous process of innovation, adaptation and learning	Adaptation and learning
2	F2	Agents of change in the social sector	Agents of change in the social sector
3	F3	Identification and encouragement of new opportunities seriously	Identifying new opportunities
4	F4	Accepting the mission to create and survive social value	Creation and survival of social value
5	F5	Necessary processes and structures with considering cultural compatibility	Adaptation and learning
6	F6	Applying a written evaluation system based on future changes	Applying a documented evaluation system
7	F7	Focus on strategic positions	Focus on strategic positions
8	F8	Evaluation of existing capabilities and needs assessment of university missions in the future	Evaluation of existing capabilities
9	F9	Identification and recruitment of capable forces	Identification and recruitment of capable forces
10	F10	Economic and organizational incentives to motivate the development of social entrepreneurship	Development of social entrepreneurship
11	F11	Serious and fearless action through available resources	Serious and fearless action through available resources
12	F12	Providing an ambitious sense of accountability to institutions and resulting outcomes	Accountability to institutions and resulting consequences
13	F13	Creating a platform for transformational leadership and reforming processes and structures	Modifying processes and structures
14	F14	Using the written evaluation system and paying attention to the future educational needs of the society	Attention to the future educational needs of society
15	F15	Evaluation of existing capabilities and potentials	Evaluation of existing capabilities
16	F16	Attention to education based on future needs and innovation	Attention to the future educational needs of society
17	F17	Assessing needs and using all capacities to provide them	Need assessment and use of all capacities
18	F18	Applying new management methods in coordination and compatibility between industry and university	The connection between industry and university
19	F19	Informing people of the effectiveness and importance of their role in accepting the responsibility of creating change in the social sector	The effectiveness of people in creating change in the social sector
20	F20	Identifying new opportunities, teaching and learning principles	Identifying new opportunities
21	F21	Discovering people's talents and skills instead of qualifications	Identification and recruitment of capable forces
22	F22	Welcoming new ideas and opinions	Identifying new opportunities
23	F23	Knowing critical and strategic situations in the organization	Focus on strategic positions
24	F24	Identifying the capabilities of people and creating a sense of responsibility in them	Identification and recruitment of capable forces
25	F25	Using factors such as organizational incentives	Reward system
26	F26	Creating incentive mechanisms to encourage people to accept social responsibility	Development of social entrepreneurship
27	F27	Need assessment of training courses related to the field of entrepreneurship	Attention to the future educational needs of society
28	F28	Improving processes and structures by assigning and equipping practical workshops	Modifying processes and structures
29	F29	Assessing the current situation and formulating educational programs according to existing capacities and future needs	Identifying new opportunities
30	F30	Forming entrepreneurial working groups and creating the necessary infrastructure	Identification and recruitment of capable forces
31	F31	Appropriate needs assessment and selection of people with related capabilities	Identification and recruitment of capable forces

32	F32	Preference for resources within the organization and for additional skills that are not available in the organization for the short term from outside	Serious and fearless action through available resources
33	F33	Attention to the role of new technologies that can be used	Using up-to-date technology
34	F34	Providing an ambitious sense of accountability to institutions and resulting outcomes and serious and fearless action through available resources.	Serious and fearless action through available resources
35	F35	Identification and encouragement of new opportunities and agents of change in the social sector seriously	Identifying new opportunities
36	F36	Attention to human potential and available resources and attention to the necessary structures for their optimal use	Identification and recruitment of capable forces
37	F37	Explaining the role of universities in identifying the needs of society and the ways to meet them	Attention to the future educational needs of society
38	F38	Optimal allocation of resources and efficient human resources	Identification and recruitment of capable forces
39	F39	University and industry connection	University and industry connection
40	F40	Educational and hardware processes and structures	Using up-to-date technology
41	F41	Assessment of existing capabilities and social needs	Development of social entrepreneurship
42	F42	Effective and efficient management of resources with a regional and sector perspective	Development of social entrepreneurship
43	F43	Serious and fearless action through available resources	Serious and fearless action through available resources
44	F44	Accepting the mission to create and survive social value	Development of social entrepreneurship
45	F45	E the existing conditions and capabilities and drawing the optimal conditions with the priority of strategic needs	Focus on strategic positions
46	F46	Appropriate management based on the attitude of local conditions	Development of social entrepreneurship
47	F47	Creating inter-organizational communication and coordination of all organizations in line with social responsibilities	Development of social entrepreneurship
48	F48	The university's ability to adapt to the conditions in the market and industry and the needs of society	Development of social entrepreneurship

Also, by examining the data obtained in the first stage of open coding, 36 concepts related to social entrepreneurship were obtained, which are presented in Table 2.

After performing the operation of the initial stage of open coding, in the second stage of open coding, similar and common concepts and categories were integrated through constant comparative analysis of data. In this way, relying on the most meaningful and abundant concepts and primary categories, sifting and reducing a large amount of data were done. At this stage, while referring to similar concepts and categories and comparing them with each other, we tried to identify overlapping concepts and categories and by determining and sorting them, put common concepts and categories in the form of a single concept and category. Based on this, great amount of data was reduced to a specific and limited number of general categories. In Table 3, the major categories by source of codes and concepts of the university's social responsibility model are presented, and in Table 4, the major categories by source of codes and concepts of the social entrepreneurship model are given.

Table 2: The first stage of social entrepreneurship open data coding

Row	Code	Concepts	Categories
1	E1	The university president's belief in entrepreneurship and innovation	Management attitude to entrepreneurship
2	E2	Encouraging and persuading professors to carry out entrepreneurial activities by the university president	Management attitude to entrepreneurship
3	E3	Appointment of vice presidents with entrepreneurial and innovative attitude and thinking by the university president	meritocracy and merit selection
4	E4	Holding national and annual conferences and meetings by university entrepreneurship centers	Scientific conference
5	E5	Establishing permanent secretariats of scientific conferences on the subject of entrepreneurship and innovation at the university level	Entrepreneurial structures
6	E6	Accountability to society	Social consequences
7	E7	Responding to social demand	Social consequences
8	E8	Responding to the labor market	Economic consequences
9	E9	Employment opportunities for students	Employment of students
10	E10	Creating competition between universities	Competition of universities
11	E11	Compiling and preparing a joint publication between the university, industry and entrepreneurs	Joint research activity
12	E12	The existence of research centers in the university	Research activity
13	E13	The existence of university-affiliated research centers	Research activity
14	E14	Reduction of unemployed graduates	Reduce unemployment
15	E15	Approving research projects with the subject of entrepreneurship, technology and innovation	Entrepreneurship research projects
16	E16	Inclusion of academic entrepreneurship goals in the statement, mission of the university	The mission and mission of entrepreneurship
17	E17	Hiring specialist staff in the research and development department	Recruiting and employment
18	E18	Identifying the talents and entrepreneurial abilities of professors	Talent management
19	E19	Promoting the culture of entrepreneurship and innovation in the university	Entrepreneurial culture
20	E20	Formation of university entrepreneurship corridors	Entrepreneurial corridors
21	E21	Forming a specialized committee and working group for entrepreneurship and innovation in the university	Entrepreneurial structure
22	E22	University membership in professional and international entrepreneurship institutions and associations	Intercollegiate communication
23	E23	Holding development courses for faculty members with a focus on entrepreneurship and technology	Professional development of entrepreneurship
24	E24	Applying the spirit of innovation and entrepreneurship in university management and planning	structural reform
25	E25	Organizational excellence of the university	Organizational Excellence
26	E26	Inviting local entrepreneurs to cooperate in the university	Interaction with the local environment
27	E27	Inviting national entrepreneurs to cooperate in the university	Interaction with the local environment
28	E28	Inviting international entrepreneurs to cooperate in the university	Interaction with the transnational environment
29	E29	Communication with work environments and labor market	Interaction with the labor market
30	E30	Creating commitment and attachment to the category of entrepreneurship among faculty members	Entrepreneurial culture
31	E31	The university president's commitment to the development of entrepreneurship	Entrepreneurial culture
32	E32	Creating an entrepreneurial atmosphere	Organizational Culture
33	E33	Communicating with justice and establishing rights between university and industry	Sustainable interaction with the industry
34	E34	Strengthening collective identity among academic agents	Participatory Culture
35	E35	Encouraging teamwork among academic staff	Participatory Culture
36	E36	Creating a sense of belonging to entrepreneurship in employees and professors	Organizational Culture

Table 3: Major categories by source of codes and concepts of the social responsibility model of the university

Row	Code	Concepts	Categories
1	F1 F5	Using up-to-date technology, applying the continuous process of innovation, adaptability and learning Necessary processes and structures with considering cultural compatibility	Adaptation and learning
2	F2	Agents of change in the social sector	Agents of change in the social sector
3	F3 F20 F22 F29 F35	Identification and encouragement of new opportunities seriously Identifying new opportunities, teaching and principled learning Welcoming new ideas and opinions Assessing the current situation and formulating educational programs according to existing capacities and future needs Identification and encouragement of new opportunities and agents of change in the social sector seriously	Identifying new opportunities
4	F4	Accepting the mission to create and survive social value	Creation and survival of social value
5	F6	Applying a documented evaluation system based on future changes	Use of documented evaluation system
6	F6	Applying a written evaluation system based on future changes	Applying a documented evaluation system
7	F8 F15	Evaluation of existing capabilities and needs assessment of university missions in the future Evaluation of existing capabilities and potentials	Evaluation of existing capabilities
8	F9 F21 F24 F30 F31 F36 F38	Identification and recruitment of capable forces Discovering people's talents and skills instead of degree orientation Identifying the capabilities of people and creating a sense of responsibility in them Forming entrepreneurial working groups and creating the necessary infrastructure Appropriate needs assessment and selection of people with related capabilities Attention to human potential and available resources and attention to the necessary structures for their optimal use Optimal allocation of resources and efficient human resources	Identification and recruitment of capable forces
9	F10 F26 F41 F42 F44 F46 F47 F48	Economic and organizational incentives to motivate the development of social entrepreneurship Creating incentive mechanisms to encourage people to accept social responsibility Assessment of existing capabilities and social needs Effective and efficient management of resources with a regional and sector perspective Accepting the mission to create and survive social value Appropriate management based on the attitude of local conditions Creating inter-organizational communication and coordination of all organizations in line with social responsibilities University's ability to adapt to the conditions in the market and industry and the needs of society	Development of social entrepreneurship
10	F11 F32 F34 F43	Serious and fearless action through available resources Preference for resources within the organization and for additional skills that are not available in the organization for the short term from outside Providing an ambitious sense of accountability to institutions and resulting outcomes and serious and fearless action through available resources Serious and fearless action through available resources	Serious and fearless action through available resources
11	F12	Providing an ambitious sense of accountability to institutions and resulting outcomes	Accountability to institutions and resulting consequences
12	F13 F28	Creating a platform for transformational leadership and reforming processes and structures Improving processes and structures by assigning and equipping practical workshops	Modifying processes and structures
13	F14 F16 F27 F17 F37	Using the documented evaluation system and paying attention to the future educational needs of the society Attention to education based on future needs and innovation Need assessment of training courses related to the field of entrepreneurship Assessing needs and using all capacities to provide them Explaining the role of universities in identifying the needs of society and the ways to meet them	Attention to the future educational needs of society
14	F18 F39	Applying new management methods in coordination and compatibility between industry and university University and industry connection	The connection between industry and university
15	F19	Informing people of the effectiveness and importance of their role in accepting the responsibility of creating change in the social sector	The effectiveness of people in creating change in the social sector
16	F25	Using factors such as organizational incentives	Reward system
17	F33 F40	Attention to the role of new technologies that can be used Educational and hardware processes and structures	Using up-to-date technology

Table 4: Major categories by source of codes and concepts of social entrepreneurship model

Row	Code	Concepts	Categories
1	E1 E2	The university president's belief in entrepreneurship and innovation Encouraging and persuading professors to carry out entrepreneurial activities by the university president	Management's attitude to entrepreneurship
2	E3	Appointment of vice presidents with entrepreneurial and innovative attitude and thinking by the university president	meritocracy and merit selection
3	E4 E11 E12 E13	Holding national and annual conferences and meetings by university entrepreneurship centers Compiling and preparing a joint publication between the university, industry and entrepreneurs Existence of research centers in the university Existence of university-affiliated research centers	Research activity
4	E14 E9 E17	Reduction of unemployed graduates Employment opportunities for students Hiring specialist staff in the research and development department	Reduction of unemployment
5	E5 E21 E15 E16	Establishing permanent secretariats of scientific conferences on the subject of entrepreneurship and innovation at the university level Forming a specialized committee and working group for entrepreneurship and innovation in the university Approving research projects with the subject of entrepreneurship, technology and innovation Inclusion of academic entrepreneurship goals in the statement, mission of the university	Entrepreneurial structures
6	E6 E7	Responsiveness to society Responding to social demand	Social consequences
7	E8	Responding to the labor market	Economic consequences
8	E19 E20 E30 E31	Promoting the culture of entrepreneurship and innovation in the university Formation of university entrepreneurship corridors Creating commitment and attachment to the category of entrepreneurship among faculty members University president's commitment to the development of entrepreneurship	Entrepreneurial culture
9	E32 E24 E25 E36	Creating an entrepreneurial atmosphere Applying the spirit of innovation and entrepreneurship in university management and planning Organizational excellence of the university Creating a sense of belonging to entrepreneurship in employees and professors	Organizational Culture
10	E10 E18 E23 E22	Creating competition between entrepreneurial universities Identifying the talents and entrepreneurial abilities of professors Holding development courses for faculty members with a focus on entrepreneurship and technology University membership in professional and international entrepreneurship institutions and associations	Professional development of entrepreneurship
11	E26	Inviting local entrepreneurs to cooperate in the university	Interaction with the local environment
12	E27 E29 E33	Inviting national entrepreneurs to cooperate in the university Communication with work environments and labor market Communicating with observing justice and establishing rights between university and industry	Interaction with the local environment
13	E28	Inviting international entrepreneurs to cooperate in the university	Interaction with the local environment
14	E34 E35	Strengthening collective identity among academic agents Persuading and encouraging team work among academic staff	Participatory Culture

Axial coding: in this stage, the categories are linked together in a network; the macro-categories of characteristics and dimensions of open coding are compiled and put in place to create an increasing knowledge about relationships. Axial coding has three stages: The first stage, creating the main categories: the sub-categories are grouped into 17 main categories in the social responsibility model of the university and 14 main categories in the social entrepreneurship model, as shown in the table 4.

The second step is to create a communication network between all the categories in a multi-level format: in this step, one of the open coding categories is selected as the main category or phenomenon (or the studied process) and connects the other categories.

The six research categories are as follows: Core categories: an idea is an incident or event that concepts and categories are created on its axis. This is because none of the categories of this research is more abstract than other categories. For the axial phenomenon, the name appropriate to the topic of the research has been chosen and it has been placed as a core phenomenon in the heart of other categories in the form of a paradigm model. This table has 5

main categories and 17 subcategories which are stated in table 5:

Table 5: Table of key concepts and categories of the research

Core categories of research		
1	Development of social entrepreneurship	Economic and organizational incentives to motivate the development of social entrepreneurship
		Creating incentive mechanisms to encourage people to accept social responsibility
		Assessment of existing capabilities and social needs
		Effective and efficient management of resources with a regional and sector perspective
		Accepting the mission to create and survive social value
		Appropriate management based on the attitude of local conditions
		Creating inter-organizational communication and coordination of all organizations in line with social responsibilities
2	Modifying processes and structures	The university's ability to adapt to the conditions in the market and industry and the needs of society
		Creating a platform for transformational leadership and reforming processes and structures
3	The effectiveness of people in creating change in the social sector	Improving processes and structures by assigning and equipping practical workshops
		Informing people of the effectiveness and importance of their role in accepting the responsibility of creating change in the social sector
4	meritocracy and merit selection	Appointment of vice presidents with entrepreneurial and innovative attitude and thinking by the university president
		Promoting the culture of entrepreneurship and innovation in the university
5	Entrepreneurial culture	Formation of university entrepreneurship corridors
		Creating commitment and attachment to the category of entrepreneurship among faculty members
		The university president's commitment to the development of entrepreneurship

Causal categories: 4 main categories of agents of change in the social sector, using a documented evaluation system, focusing on strategic situations and serious and fearless action by means of available resources have been recognized as causal conditions, whose subcategories are brought in the table 6.

Table 6: Concepts and causal categories of the research

Causal categories of research		
1	Agents of change in the social sector	Agents of change in the social sector
2	Use of a documented evaluation system	Applying a documented evaluation system based on future changes
3	Focus on strategic positions	Focus on strategic positions
		Knowing critical and strategic situations in the organization
4	Serious and fearless action through available resources	Evaluating the existing conditions and capabilities and drawing the optimal conditions with the priority of strategic needs
		Serious and fearless action through available resources
		Preference for resources within the organization and for additional skills that are not available in the organization for the short term from outside

Contextual categories: indicate the special conditions in which the phenomenon is located. In this research, 8 main categories have been identified as effective environmental conditions as described in Table 7:

Intervening categories of research: It is a broad structural context in which the phenomenon occurs and there are a series of special conditions that affect the strategy. In this research, the main category of management's attitude towards entrepreneurship has been identified as an intervening category as described in Table 8.

Strategic categories: It refers to those interactions and actions that actors show in response to their circumstances. In this research, 8 main categories of adaptation and learning, assessment of existing capabilities, identification and recruitment of capable forces, attention to the future educational needs of the society, reduction of unemployment, organizational culture, professional development of entrepreneurship and collaborative culture have been identified as described in Table 9.

Consequence categories: Consequence categories are the results of strategies to deal with phenomena or to manage and control phenomena. Five consequence categories of the research have been identified as described in Table 10:

The third stage, extracting the research model: In this stage, the major categories are related to each other in

Table 7: Concepts and contextual categories of the research

contextual categories of the research		
1	The connection between industry and university	Applying new management methods in coordination and compatibility between industry and university University and industry connection
2	reward system	Attention to the role of new technologies that can be used Using factors such as organizational incentives
3	Using up-to-date technology	Educational and hardware processes and structures
4	Research activity	Holding national and annual conferences and meetings by university entrepreneurship centers Compiling and preparing a joint publication between the university, industry and entrepreneurs The existence of research centers in the university The existence of university-affiliated research centers
5	Entrepreneurial structures	Establishing permanent secretariats of scientific conferences on the subject of entrepreneurship and innovation at the university level Forming a specialized committee and working group for entrepreneurship and innovation in the university Approving research projects with the subject of entrepreneurship, technology and innovation Inclusion of academic entrepreneurship goals in the statement, mission and missions of the university
6	Interaction with the transnational environment	Invitation to cooperation from local entrepreneurs University
7	Interaction with the transnational environment	7 Inviting national entrepreneurs to cooperate in the university Communication with work environments and labor market Communicating while observing justice and establishing rights between university and industry
8	Interaction with the transnational environment	Inviting international entrepreneurs to cooperate in the university

Table 8: Intervening categories of the research

contextual categories of the research		
1	Management attitude to entrepreneurship	The university president's belief in entrepreneurship and innovation Encouraging and persuading professors to carry out entrepreneurial activities by the university president

the form of a model around the central category. In fact, the drawn model deals with the formal description of the categories. The model of this research is drawn according to the categories included in the central and selective coding in Figure 1.

The test of the final model of explaining the social responsibilities of universities with the approach of social entrepreneurship

In figure 2, the model in the mode of factor loading value and in figure 3 of the model in the mode of significance number) T-Value) are shown.

In the following, the measurement models and the final structural model (second order) are calculated in Table 11.

Table 9: Strategic concepts and categories of research

Strategic categories of research	
1	Adaptation and learning
	Applying the continuous process of innovation, adaptation and learning Necessary processes and structures with cultural compatibility in mind
2	Evaluation of existing capabilities
	Evaluation of existing capabilities and needs assessment of university missions in the future Evaluation of existing capabilities and potentials
3	Identification and recruitment of capable forces
	Discovering people's talents and skills instead of degree orientation Identifying the capabilities of people and creating a sense of responsibility in them Forming entrepreneurial working groups and creating the necessary infrastructure Appropriate needs assessment and selection of people with related capabilities Attention to human potential and available resources and attention to the necessary structures for their optimal use Optimal allocation of resources and efficient human resources
4	Attention to the future educational needs of society
	Using the documented evaluation system and paying attention to the future educational needs of the society Attention to education based on future needs and innovation Need assessment of training courses related to the field of entrepreneurship Assessing needs and using all capacities to provide them Explaining the role of universities in identifying the needs of society and the ways to meet them
5	Reduction of unemployment
	Reduction of unemployed graduates Employment opportunities for students Hiring specialist staff in the research and development department
6	Organizational Culture
	Creating an entrepreneurial atmosphere Applying the spirit of innovation and entrepreneurship in university management and planning Organizational excellence of the university Creating a sense of belonging to entrepreneurship in employees and professors Creating competition between entrepreneurial universities
7	Professional development of entrepreneurship
	Identifying the talents and entrepreneurial abilities of professors Holding development courses for faculty members with a focus on entrepreneurship and technology Membership of the university in professional and international entrepreneurship institutions and associations
8	Participatory Culture
	Strengthening collective identity among academic agents Persuading and encouraging Kartimi among academic staff

Table 10: Concepts and consequential categories of the research

Consequential categories of the research	
1	Identifying new opportunities
	Identification and encouragement of new opportunities seriously Identifying new opportunities, teaching and learning principles Welcoming new ideas and opinions Assessing the current situation and formulating educational programs according to existing capacities and future needs Identification and encouragement of new opportunities and agents of change in the social sector seriously
2	Creation and survival of social value
	Accepting the mission to create and survive social value
3	Accountability to institutions and resulting consequences
	Providing an ambitious sense of accountability to institutions and resulting outcomes
4	Social consequences
	Accountability to society Responding to social demand
5	Economic consequences
	Responding to the labor market

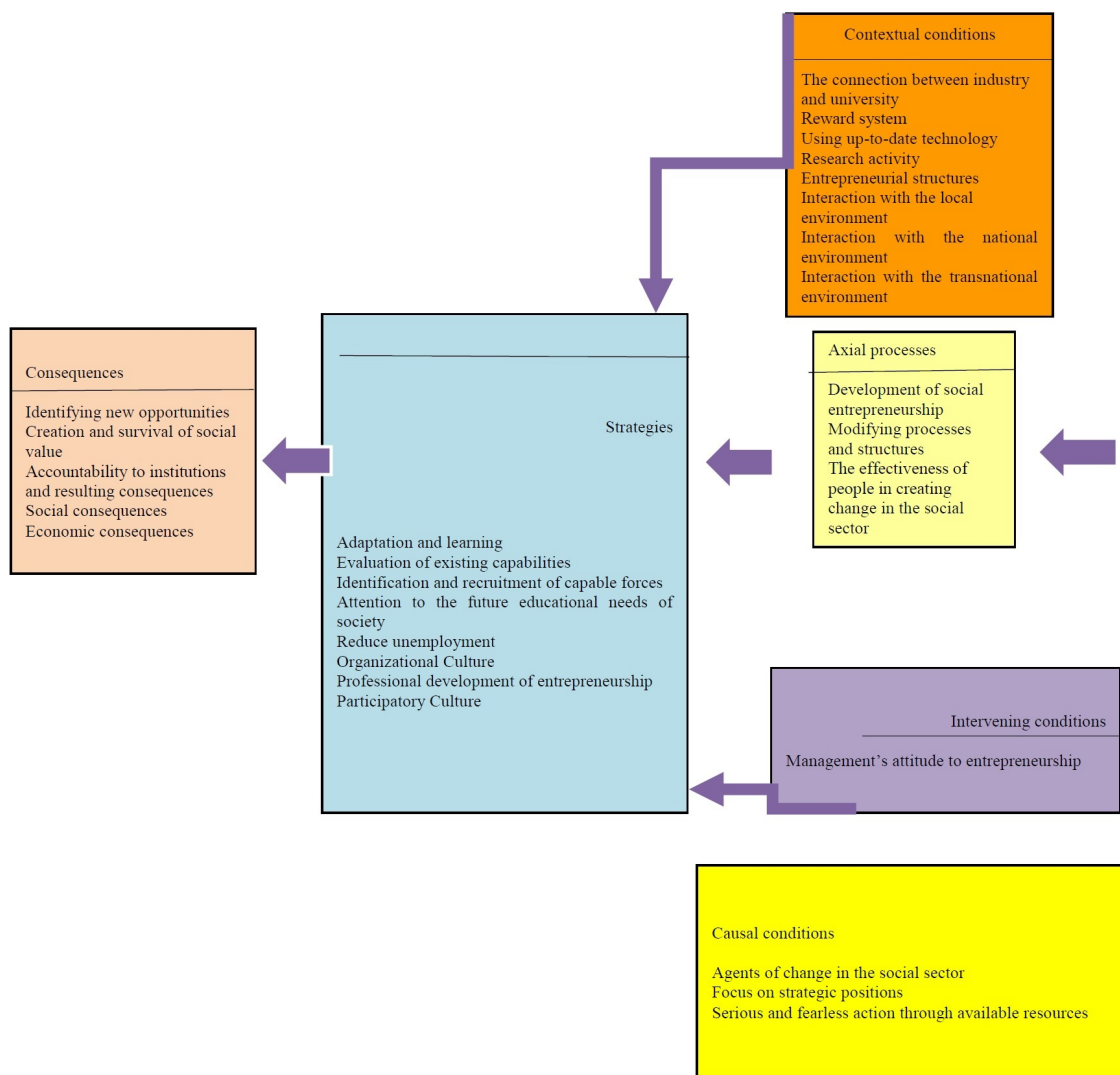


Figure 1: The paradigm model of explaining the social responsibilities of universities with the approach of social entrepreneurship (research findings)

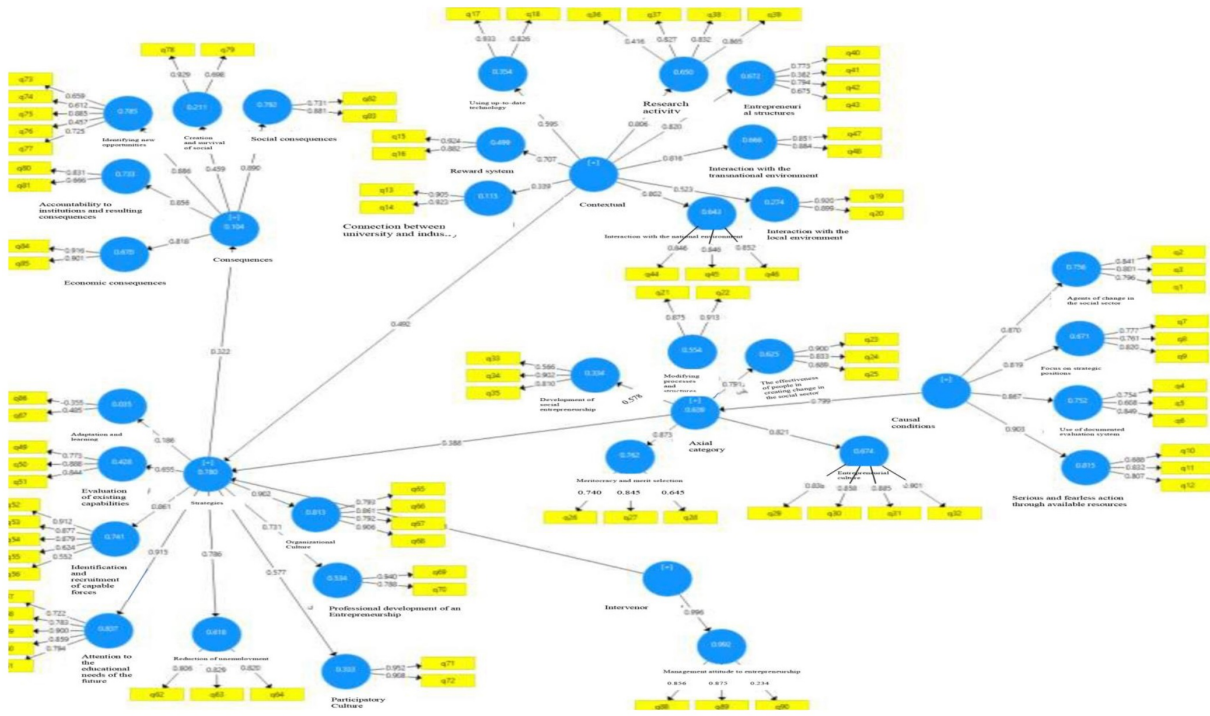


Figure 2: The model in the mode of factor loading value

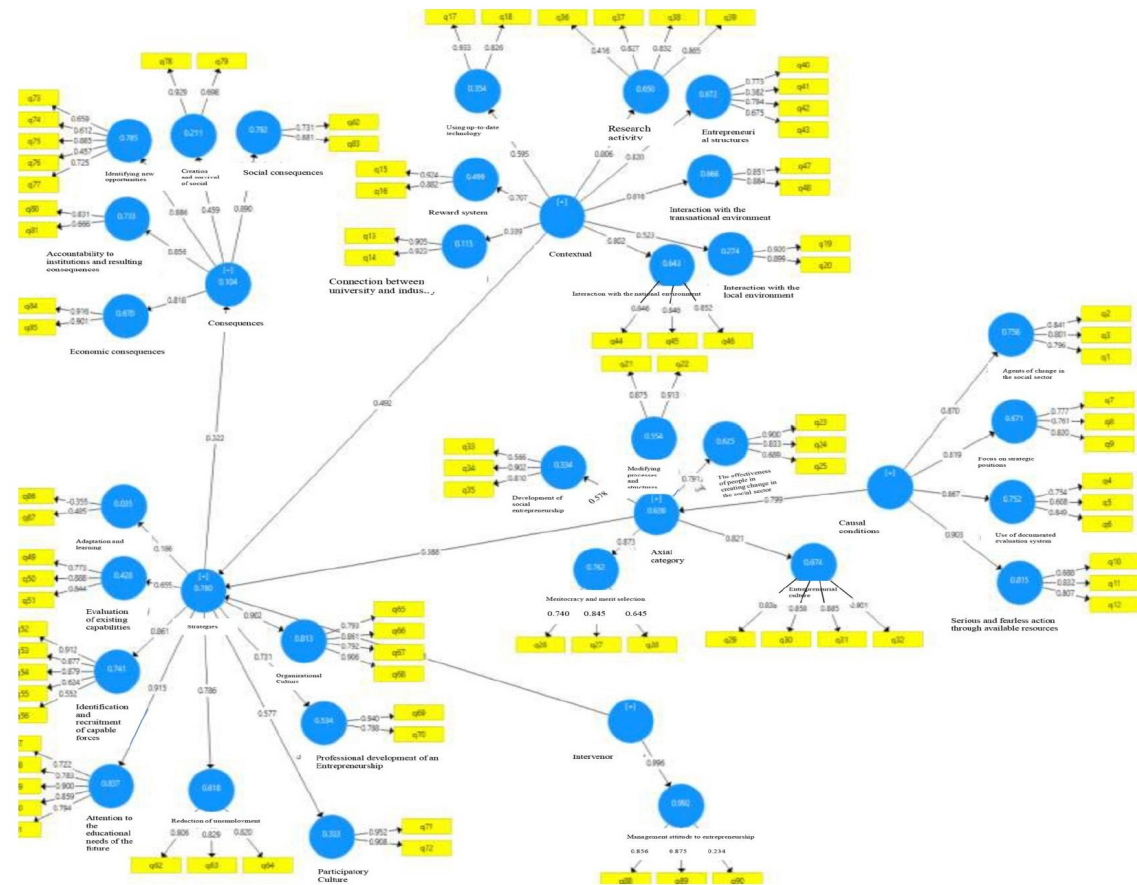


Figure 3: Significance coefficients (T-Value)

Table 11: Test of the final measurement model and structural model

Aspects	Index	Factorial loads	AVE	R ²	significance coefficients	
Adaptation and learning	Applying the continuous process of innovation, adaptation and learning	0.821	0.703	0.35	2.684	
	Necessary processes and structures with cultural compatibility in mind	0.865				
Agents of change in the social sector	Agents of change in the social sector	0.867	0.660	0.756	56.458	
Identifying new opportunities	Identification and encouragement of new opportunities seriously	0.758	0.766	0.785	72.984	
	Identifying new opportunities, teaching and learning principles	0.841				
	Welcoming new ideas and opinions	0.856				
	Assessing the current situation and formulating educational programs according to existing capacities and future needs	0.752				
	Identification and encouragement of new opportunities seriously	0.743				
Creation and survival of social value	Accepting the mission to create and survive social value	0.902	0.744	0.211	6.059	
Use of documented evaluation system	Applying a written evaluation system based on future changes	0.954	0.53	0.752	60.837	
Focus on strategic positions	Focus on strategic positions	0.856	0.619	0.671	37.786	
	Knowing the critical and strategic situations in the organization by evaluating the existing conditions and capabilities and drawing the optimal conditions with the priority of strategic needs	0.657				
Evaluation of existing capabilities	Knowing the critical and strategic situations in the organization by evaluating the existing conditions and capabilities and drawing the optimal conditions with the priority of strategic needs	0.984	0.756	0.425	20.111	
	Evaluation of existing capabilities and needs assessment of university missions in the future					
	Evaluation of existing capabilities and potentials					
Identification and recruitment of capable forces	Discovering people's talents and skills instead of degree orientation	0.849	0.831	0.741	60.714	
	Identifying the capabilities of people and creating a sense of responsibility in them	0.987				
	Forming entrepreneurial working groups and creating the necessary infrastructure	0.875				
	Appropriate needs assessment and selection of people with related capabilities	0.756				
						0.875
						0.756
						0.957
	Attention to human potential and available resources and attention to the necessary structures for their optimal use	0.957				
	Optimal allocation of resources and efficient human resources	0.759	0.759			
Development of social entrepreneurship	Economic and organizational incentives to motivate the development of social entrepreneurship	0.846	0.697	0.334	18.635	
	Creating incentive mechanisms to encourage people to accept social responsibility	0.856				
	Assessment of existing capabilities and social needs	0.864				
	Effective and efficient management of resources with a regional and sector perspective	0.875				
	Accepting the mission to create and survive social value	0.775				
	Appropriate management based on the attitude of local conditions	0.875				
	Creating inter-organizational communication and coordination of all organizations in line with social responsibilities	0.777				
	The university's ability to adapt to the conditions in the market and industry and the needs of society	0.878				
Serious and fearless action through available resources	Preference for resources within the organization and for additional skills that are not available in the organization for the short term from outside	0.798	0.605	0.815	107.802	
Accountability to institutions and resulting consequences	Providing an ambitious sense of accountability to institutions and resulting outcomes	0.998	0.866	0.733	104.782	
Modifying processes and structures	Creating a platform for transformational leadership and reforming processes and structures	0.784	0.798	0.554	25.878	

	Improving processes and structures by assigning and equipping practical workshops	0.765			
Attention to the future educational needs of society	Using the written evaluation system and paying attention to the future educational needs of the society	0.784			
	Attention to education based on future needs and innovation	0.758	0.762	0.837	84.379
	Need assessment of training courses related to the field of entrepreneurship	0.798			
	Assessing needs and using all capacities to provide them	0.897			
	Explaining the role of universities in identifying the needs of society and the ways to meet them	0.987			
connection between industry and university	Applying new management methods in coordination and compatibility between industry and university	0.978	0.835	0.115	6.423
	University and industry connection	0.965			
The effectiveness of people in creating change in the social sector	Informing people of the effectiveness and importance of their role in accepting the responsibility of creating change in the social sector	0.945	0.660	0.625	42.424
reward system	Using factors such as organizational incentives	0.874	0.815	0.499	19.820
Using up-to-date technology	Attention to the role of new technologies used	0.902	0.777	0.354	16.463
	Educational and hardware processes and structures	0.905			
Management attitude to entrepreneurship	The university president's belief in entrepreneurship and innovation	0.802	0.718	0.922	342.654
	Encouraging and persuading professors to carry out entrepreneurial activities by the university president	0.705			
meritocracy and merit selection	Appointment of vice presidents with entrepreneurial and innovative attitude and thinking by the university president	0.806	0.761	0.762	93.723
Research activity	Holding national and annual conferences and meetings by university entrepreneurship centers	0.885	0.744	0.650	43.203
	Compiling and preparing a joint publication between the university, industry and entrepreneurs	0.865			
	The existence of research centers in the university	0.804			
	The existence of university-affiliated research centers	0.705			
Reduction of unemployment	Reduction of unemployed graduates	0.798			
	Employment opportunities for students	0.902	0.670	0.618	38.678
Entrepreneurial structures	Hiring specialist staff in the research and development department	0.780			
	Establishing permanent secretariats of scientific conferences on the subject of entrepreneurship and innovation at the university level	0.655	0.858	0.672	53.016
	Forming a specialized committee and working group for entrepreneurship and innovation in the university	0.685			
	Approving research projects with the subject of entrepreneurship, technology and innovation	0.805			
Social consequences	Inclusion of academic entrepreneurship goals in the statement, mission and missions of the university	0.805			
	Accountability to society	0.898	0.856	0.792	100.326
Economic consequences	Accountability to social demand	0.875			
	Responding to the labor market	0.985	0.825	0.670	38.871
Entrepreneurial culture	Promoting the culture of entrepreneurship and innovation in the university	0.789			
	Formation of university entrepreneurship corridors	0.785	0.758	0.674	38.340
	Creating commitment and attachment to the category of entrepreneurship among faculty members	0.804			
	The university president's commitment to the development of entrepreneurship	0.987			
Organizational Culture	Creating an entrepreneurial atmosphere	0.905	0.905		
	Applying the spirit of innovation and entrepreneurship in university management and planning	0.785	0.705	0.813	92.301
	Organizational excellence of the university	0.784			
	Creating a sense of belonging to entrepreneurship in employees and professors	0.859			
Professional development of entrepreneurship	Creating competition between entrepreneurial universities	0.902			
	Identifying the talents and entrepreneurial abilities of professors	0.981	0.753	0.534	27.852
	Holding development courses for faculty members with a focus on entrepreneurship and technology	0.876			
	University membership in professional and international entrepreneurship institutions and associations	0.704			
Interaction with the local environment	Inviting local entrepreneurs to cooperate in the university	0.875	0.827	0.274	12.975
Interaction with the national environment	Inviting national entrepreneurs to cooperate in the university	0.743			
	Communication with work environments and labor market	0.773	0.719	0.643	43.845
	Communicating with justice and establishing rights between university and industry	0.741			
Interaction with the transnational environment	Inviting international entrepreneurs to cooperate in the university	0.801	0.753	0.666	51.217
Participatory Culture	Strengthening collective identity among academic agents	0.759	0.865	0.333	16.257
	Persuading and encouraging team work among academic staff	0.901			

4.2 Examining the fit of the research model

The overall model includes both measurement and structural model parts, and by confirming its fit, the fit check in a model is complete. To check the fit of the overall model, it is enough to measure a criterion called GOF:

$$GOF = \sqrt{\overline{communalities} \times \overline{R^2}}.$$

To calculate the value $\overline{R^2}$, the average value of all R^2 in the model should be considered, which results in the value $\overline{R^2}$ equal to 0.601. Therefore, the value of the GOF criterion is equal to:

$$GOF = \sqrt{0.838 \times 0.601} = 0.709.$$

According to three values of 0.01, 0.25 and 0.36 which are introduced as weak, medium and strong values for GOF, obtaining a value of 0.709 for this criterion shows the excellent fit of the overall research model.

5 Discussion

Through the review of theoretical foundations and research literature and interviews with key informants of universities, the dimensions of social entrepreneurship in Iran's public universities were calculated. Interview data were analyzed in three stages open coding, the first stage, the second stage, and axial coding. In the initial stage of open coding, each extracted concept was placed in a category. In choosing categories, we were looking for categories that fill the conceptual space of concepts as much as possible. For this purpose, we have chosen categories that match the concepts and at the same time saturate more conceptual space. By examining the data obtained in the first stage of open coding, 36 concepts about social entrepreneurship and 48 concepts about social responsibility were obtained. In the second stage of open coding, similar and common concepts and categories were integrated through constant comparative analysis of data. In this way, relying on the most meaningful and abundant concepts and primary categories, sifting and reducing a large amount of data was done. After the main categories of the research were determined, axial coding was done. In the phase of axial coding, we once again analyzed the constant comparison of the data. In this way, we compared the coded data with each other and made them in the form of categories that are compatible with each other. In this regard, we compared general categories to the extent that makes sure that each category is separate from the others. Then, the relationship of the categories was examined and based on their nature, they were placed under the title of the core category. In other words, major categories around one axis formed a solid network of relationships by entering the core category. In the investigations, it was found that the obtained model also has an excellent fit.

6 Conclusion

For governments, how the country is progressing in economic, scientific and competitive fields; has become an important national development issue. Over the past few decades, the increasing demands of the knowledge-based economy and the demand for globalization have caused higher education in many countries around the world to undergo some significant changes. It is often difficult to coordinate and improve strategic research and activities with higher education as one of the key components in the national innovation system. The era of unlimited innovation states that companies, instead of having internal behaviors, exponentially carry out their research activities with the help of various external and external units, including universities, so that innovation can be accessed in a more efficient way. Apart from the traditional academic and research missions, universities are currently under tremendous pressure to achieve economic and social development. Higher education has become more of a social and especially economic development, research and development activities in universities cannot be considered as a purely academic profession.

Therefore, structurally, universities need to build an academic entrepreneurship ecosystem in which academic entrepreneurship flourishes. In short, the idea of many countries, especially policymakers, is that a closer interaction and cooperation between the government, industry and university will lead to sustainable economic growth and increased competition in the scientific economy, where innovation; is the key factor in supporting these goals. Becoming an entrepreneurial university is understood as a way to solve problems. An entrepreneurial university understands value, creates value and sends the value to internal and external environments. Since the movement towards the third academic generation has a central role in educational development, it is necessary that the trustees of higher education, understanding this necessity, pay more attention to the development process of entrepreneurial universities. However,

it should be noted that the entrepreneurial university model requires a comprehensive and coherent framework. This framework should be designed and compiled in such a way that it covers the different angles of the process, introduces the different components of the entrepreneurial university, shows the importance and contribution of each factor, and provides a suitable tool for identifying the needs related to the entrepreneurial process. Habibi and his colleagues [1] investigated the impact of social entrepreneurship orientation on social innovation, the results of this research showed that social entrepreneurship orientation has a positive significant effect on social innovation and social innovation positive a significant effect on innovation in products and innovation in services. Nad Alipour Palaki and his colleagues [6] showed that factors such as potential talents with the subcategories of personal qualifications and group qualifications, public policies with the subcategories of formalization and the procedures of entrepreneurs and capital material and spiritual investment with the sub-categories of social capital and financial capital were identified as the underlying factors for the development of social entrepreneurship in higher education. Fazeli and his colleagues in [3] showed that social entrepreneurs need to know the challenges and strategic measures in the surrounding environment. Recognizing social challenges makes them able to recognize an important part of their obstacles and introduce them to the environment and society around them and act with cooperation and consensus to solve them. Zare and Safari Dashtaki [11] showed that empowering policies as a central phenomenon and in interaction with other factors lead to the formation of social entrepreneurship and capacity building, physical and mental strengthening and protective laws in the form of adopting empowering policies have a great effect, and finally this attitude becomes the basis for the emergence of the phenomenon of social entrepreneurship.

Based on the results and findings of research and development of entrepreneurial universities, executive and research proposals are presented as follows:

- Creating an information bank in the field of entrepreneurship with the participation of the university and intermediate institutions;
- Publication of entrepreneurship book by each university separately to spread entrepreneurship culture in the university;
- The content of this book can contain lessons about entrepreneurship, biographies of university entrepreneurs inside and outside the country, an introduction to top entrepreneurs in each university, an introduction to successful universities in the world in the field of entrepreneurship, and providing key points of the success of university entrepreneurs.
- Examining the relationship between organizational structure and entrepreneurial management of human resources;
- Explaining the obstacles of academic entrepreneurship in state universities;
- The mechanism of commercialization in human sciences;

6.1 Research limitations

Among the limitations of this research are:

- Lack of cooperation and accuracy of academic experts: academic experts have cooperated with the researcher's insistence and frequent and continuous follow-ups due to their very busy educational and executive activities.
- Time limitation and scope of the subject: due to the scope of the research community and the combined method, as well as the lack of timely cooperation of experts and the university putting pressure on the researcher due to the limited time of the study, the researcher has suffered a lot from the time limitation.
- Unwillingness to complete the questionnaire: academic administrators and faculty members did not cooperate in completing the research questionnaires in a timely manner. Due to the time limit, the researcher had to attend the universities to follow up on the process of completing the questionnaire. For this reason, some samples may not have completed the questionnaires accurately and generalization should be done with caution.
- Accuracy in generalizability.

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