# Students' empowerment model: An approach to the establishment of gen-3 and 4 universities

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A R T I C L E   I N F O

A B S T R A C T

In spite of the vast applications of the empowerment models, its dimensions and factors for higher education are still relatively unclear. This paper aims to provide an empowerment model for students with the approach of establishing the 3rd and 4th generation universities in the higher education sector of Iran, providing the necessary foundations for empowerment of human and social resources of the universities. This research utilizes documentary research and Fuzzy Delphi technique for filtering the dimensions and factors of the subject. From the 181 identified factors, 44 factors selected for Fuzzy Delphi technique. The statistical group of study consists of 15 experts. The survey has been conducted in four stages and the results of each stage are filtered via the Fuzzy Delphi method. Eventually, the student's empowerment model is designed in 4 dimensions and 20 factors, and is proposed as an empowerment model for the students in Iran's higher education tiers. It helps the universities with analyzing the current circumstances and undertake optimizations based on successful experiences.

## 1. Introduction

Obviously, in the world of organizations, efficient workforce is the major factor leading to the superiority of an organization to others. The existence of skilled and committed workforce leads to reduction of absence and delay rates, in addition to significant improvement in organizational performance, morale of the staff, better manifestation of the final goals of the organization and achievement of personal goals (Abil and Nastezaie, 2010).

The above mentioned topic also holds true for higher education. University, as the highest institution of education plays a vital role in empowering the students. An efficient university requires a capable student body and faculty members who guarantee the efficiently of the system of production and distribution of knowledge (Salimi et al., 2014). Stronger emphasis on empowerment as an organizational strategy means that empowerment will be viewed as a recognized tool for leading the

academic human resources towards entrepreneurship, value creation and the new generation of academies. During the recent decades, the subject of empowerment in academic environments has received attention from a number of scholars. Empowered academic environments are organizations that create opportunities for choice, independence and stabilization leading to progress and realization of capabilities for the members. But, reviewing the literature related to empowerment indicates that there is a little research conducted on empowerment in academic environments while empowerment is an important factor in the movement of enhancement and reconstruction of educational institutions (Sullivan, 1995).

Thorndyke et al. (2006) claimed that empowerment of faculty members of a university comprises two factors of comprehensive educational curriculum and mentoring programs. The former provides necessary knowledge, expertise and resources for professional promotion, education and research and other clinical topics, while the latter simplifies the required relationships and supports. In (Abdollahi, 2010), the factors related to the psychological empowerment of the faculty members are deemed related to the four levels of cooperative management, performance-based awards, professional enrichment and following good practices. His study shows that only cooperative

management and professional enrichment have significant relationship with empowerment. Mailloux (2006) suggested that lecturers' empowerment is accompanied by the three factors of position enhancement, knowledge elevation and decision making. Edwards et al. (2002) argues that self-worthiness, productivity and empowerment are foundations of effectiveness in educational environment that have indirect effect on the students' learning.

The most important resource accessible by academic-scientific environment is the student body (Short et al., 1994). While empowerment is an important factor for students, since empowered students are more motivated to perform classroom tasks, and feel more competent, find the required tasks more meaningful, and feel they have an impact on their learning process (Houser and Frymier, 2009; Zraa et al., 2011). In addition empowered students have more positive perceptions toward the course content, instructors, and perform more activities that believe reflect learning (Zraa et al., 2011).

Frymier et al. (1996) expanded traditional views of motivation to create the construct of learner empowerment that is defined as a student's feeling of competence to perform a task that is meaningful and has an impact on the situation.

The empowerment concept in the instructional context were examined by Frymier et al. (1996), Tibbles et al. (2008), Weber et al. (2005), and Weber and Patterson (2000). Frymier et al. (1996) applied the concept of empowerment to the classroom context, and defined learner empowerment as consisting of three dimensions: meaningfulness, competence, and impact. This measure is called the Learner Empowerment Scale (LES) (Frymier et al., 1996). Houser and Frymier (2009) examined the role of student characteristics on empowerment, along with the impact of instructor communication behaviour. The results show that student temperament and learner orientation had little impact on empowerment. Bradbury et al. (2007) explored the meaning of empowerment for nursing students in relation to their clinical practice experiences. Their research found that nursing students experience both empowerment and disempowerment in clinical placements, centering on three issues: learning in practice, team membership and power.

In spite of the argument that the effectiveness of universities and faculties depends on their members, importance and criticality of empowerment of the academic population and its potential benefits, few researches have been conducted regarding the empowerment at higher education institutions, especially students (Abdollahi, 2010).

Since universities are the pioneers of development and reformation in each country, and the students are the main constituting element of academic environments, they need special training for increasing their capabilities, leading to efficient performance in their duties for creation of a capable society. This matter is of even more significance in the movement towards the next generation academies (i.e. the 3rd gen (Entrepreneur University) and 4th gen (Value Creation University) universities). Thus, the current paper aims to identify and extract the dimensions, factors and criteria for evaluation of student empowerment in the higher education sector of Iran, with the approach of establishment of the 3rd and 4th generation academies. Presently, the common models are facing troubles in expressing these topics and lack any special emphasis on empowerment of students in the higher education system. Accordingly, this question arises that considering the dominant characteristics of Iran's higher education system, which model is more suited for evaluation of the empowerment of the students in accordance with movement towards the 3rd and 4th generation universities?, and what are the dimensions and factors of such model?. For responding to this question, apart from clarifying the concepts related to empowerment and its dimensions and factors for students according to the movement towards the 3rd and 4th generation universities, a conceptual research model is presented and its factors and criteria are filtered using the Fuzzy Delphi method.

## 2. Research literature review

### 2.1. Empowerment

The foundation of each organization's wealth is constituted from the human resource that offers its expertise in the form of knowledge, skill and motivation. Nowadays, possession of such wealth is important since within the following decade, the main origin of competitive superiority will not be new technologies, rather, it will be dependent on creativity, commitment and capability of the workforce.

Empowerment is one of the most promising concepts of the knowledge world which has received less attention than the others. Empowerment is an effective and novel strategy that creates opportunities for the human resources and increases the load of its responsibilities to obtain better results (Ongori, 2009). In spite of vigorous debates regarding the benefits of empowerment, actual utilization is quite negligible (Blanchard et al., 2003).

The phrase "empowerment" was first introduced in the middle of 20th century and utilized in various scientific disciplines. Overall, since 1980 this concept has been investigated and studied by many scientists. The researchers focused their attention on topics such as the tendency of individuals to self-control, self-care, interest in domination, interest in effectiveness, motivation for skill and individual freedom. The root of all these topics is the matter of capability (possession of power and dominance) as opposed to incapability and desperation (Conger and Kanungo, 1998)

Empowerment means granting power. That is, helping people with attaining better self-confidence

and overpower their feelings of incapability and desperation. It also means uniting the internal motivation of an individual for carrying out a duty, meaning creating opportunities for people to show that they can create profitable ideas and make them real (Nesan and Holt, 2002). Empowerment is a strategy for organizational development and growth. Empowerment of human resources means focusing on the human resources of organizations and empowering the members of a society or a social system.

Empowerment entails removing the obstacles of growth, enticing for commitment to goals, enticing for risk acceptance, creativity, innovation and enabling individuals for problem solving, taking responsibility and elimination of fear. Empowerment is putting an end on everything that hinders growth, freedom, confidence and the spirit of cooperation and participation.

Empowerment in academic environments has been well-received by many scholars during the former decades. For example, in a study the researchers define empowerment as a process through which the participants improve their competencies and elevate their professional growth, solving their problems (Short et al., 1994). Bogler and Somech (2004) stated that empowerment is the individual belief that is improved upon through the skills and knowledge of the individuals that act upon it. Empowered academic environments are organizations that provide opportunities for choice, independence and stabilization of competencies for their members (Short et al., 1994).

There is a high diversity of opinions regarding the concept of empowerment, which are not merely subject to the views of the researcher, but often based on a difference between techniques or the level at which empowerment is implemented. In this regard, many researchers and theorists have conducted studies and developed models for expressing the process of empowerment. In summary, the literature of empowerment can be categorized into two parts of greater importance. In the first part, the researches concerning empowerment as the result of a process are put under study. This part that is known as the structural approach of empowerment focuses on the environment analysis and necessary tools for the managers who wish to obtain empowerment establishment of the necessary context for manifestation of empowerment (Robbins et al., 2002). Creation of this ability is dependent on information channels, resource supply and opportunities for learning or growth.

In the other part of the studies, in which Thomas and Velthouse are the leading figures, the idea is that empowerment is a multi-dimensional topic and cannot be simply regards as a single concept. Therefore, capability is defined as a process for internal stimulation of the workforce towards the delegated tasks, realized in a set of identification characteristics (May et al., 2004). In this view, empowerment is a process for creation of internal task oriented stimulation by preparing the environment and establishment of a transferring channel for feelings of self-effectiveness and higher energy levels.

Based on the above statements, and in accordance with the studies of the scholars and theorists, empowerment is a multi-dimensional concept, and there are various factors and parameters affecting the empowerment of human resources.

## 2.2. An overview of the Fuzzy Delphi method

The Fuzzy Delphi method was first introduced by Kauffman and Gupta in the 1980's (Cheng and Lin, 2002). Its application for decision making and reaching consensus about matters in which the goals and parameters are not clearly defined usually leads to very valuable results. The important characteristic of this method, is the flexibility of the framework that covers many issues related to uncertainty and inaccuracy. Many of the problems faced in decision making process originate from inaccurate or flawed data. Also, the decisions made by the experts are also dependent on their personal competence and quite subjective. Therefore, it's more suitable for the data to be expressed as fuzzy numbers instead of absolute digits. The execution stages of the Fuzzy Delphi method are in fact a combination of the execution of Delphi method and performing analysis on the data using the definitions of the fuzzy sets theory. The execution algorithm for the Fuzzy Delphi method is illustrated in Fig.1.
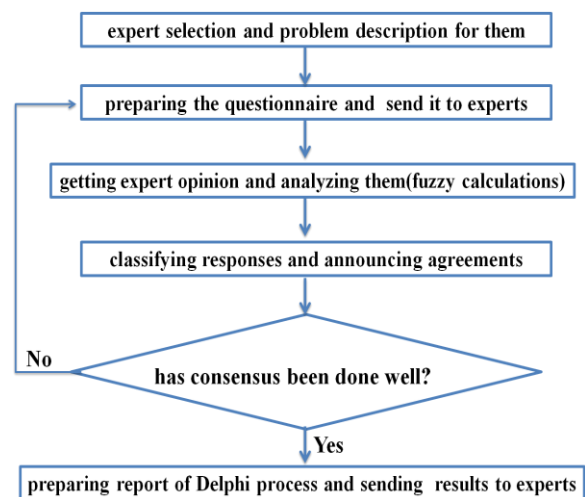


**Fig. 1:** Delphi technique implementation algorithm

## 3. Research methodology

Since this paper is focused on designing a model for empowerment of students in Iran's higher education system, offering a novel plan of empowerment characteristics oriented towards new generation academies and also intends to expand the knowledge base about the principles and relations between the criteria of student's empowerment, it is a fundamental research purpose wise. In addition, because the results achieved by this research are

applicable in the strategies and policies related to empowerment of human resources, enabling the academies to self-analyze and troubleshoot the current circumstances and conduct their planning and optimization activities accordingly, it is considered as a work of applied research. Also, based on the research design and considering the data collection methods, it is a descriptive study which utilizes the three methods of documentary study, Delphi and survey based data collection for information gathering. The statistical group of this study consists of 15 members of academic, human resource, empowerment and educational expert groups.

The authors of this paper identified 181 factors influencing the empowerment of students with the approach of establishing the 3rd and 4th generation academies by going through more than 70 books, references and articles related to empowerment. Due to the high number and overlapping character of many of the mentioned factors, finally the number of 44 factors in the frame of 4 major dimensions were identified and integrated, keeping the concepts of systematic view, entrepreneurship and value creation in mind Table 1.

**Table1:** Empowerments dimensions and factors

| Individual-Behavioral | Managerial-Organizational | Environmental -Contextual | Entrepreneurial-Value creation |
|---|---|---|---|
| - Knowledge<br>- Intelligence<br>-Emotional arousal<br>-Religious insight and discernment<br>-Motivation and attitude<br>-Having a model of successful people<br>-Mental and physical abilities<br>-Skill<br>-Personality<br>-Self confidence<br>-Satisfaction and respect<br>-Safety and tranquility<br>-Feel effective | -Appreciation and compensation<br>-Leadership and management activities<br>-Training and development<br>-Nature of decision-making and accountability<br>-Information and communications<br>-Organizational trust<br>-Performance appraisal<br>-Organizational justice<br>-Clarity of purpose<br>-Organizational structure<br>-Work force diversity<br>-Job structure | -Environmental changes<br>-Employee union<br>-Work rules<br>-Social and cultural environment<br>-Threats and opportunities identification<br>-Economic environment<br>-Environment status<br>-Relationship between society and the university<br>-Officials support<br>-Evaluation of strengths and weaknesses | -Creativity, innovation and being productive<br>- Individual autonomy<br>-Risk-taking<br>-Value and wealth-creation culture<br>-Commercialization<br>-Science and technology park<br>-Create value and wealth creation<br>-Process reengineering<br>-Creating a halal business environment |

## 4. Findings

To extract indicators and develop conceptual model, In addition to the use of literature, Fuzzy Delphi technique with the following steps is used:

### 4.1. Linguistic variables definition

The present research questionnaire has been designed, aiming at obtaining the experts' opinion about the amount of their agreement with factors and criteria of model. Therefore, the experts have expressed their amount of agreement through the verbal variables such as very low, low, medium, high, very high. Since the different characteristics of individuals have influence on their mental interpretations of qualitative variables, so defining the scope of qualitative variables, the experts have answered questions with the same mentality. These variables have been defined considering Table 2 and Fig. 2 in the shape of triangular fuzzy numbers.

In Table 2, the determined fuzzy numbers have been calculated by using Minkowski's formula as Eq. 1:

$$x = m + \frac{\beta - \alpha}{4} \tag{1}$$

With regard to the proposed options and linguistic variables defined in the questionnaire, the results of investigation of responses presented in Table 3 have been provided. Regarding the results of Table 3, the fuzzy average of each factor has been calculated according to Eqs. 2 and 3.
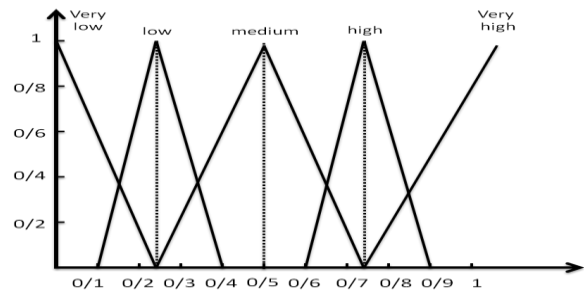


**Fig. 2:** Triangular fuzzy number of verbal variables

**Table 2:** Triangular fuzzy number of verbal variables

| Verbal variables | Determined fuzzy number | Triangular fuzzy number |
|---|---|---|
| Very high | (1,0.25,0) | 0.9375 |
| High | (0.75,0.15,0.15) | 0.75 |
| Medium | (0.5,0.25,0.25) | 0.5 |
| Low | (0.25,0.15,0.15) | 0.25 |
| Very low | (0,0,0.25) | 0.0625 |

$$A_i = (a_1^{(i)}, a_2^{(i)}, 3^{(i)}) \quad i = 1,2,3,\ldots,n \tag{2}$$

$$A_{ave} = (m_1, m_2, m_3)(\tfrac{1}{n}\textstyle\sum_{i=1}^{n} a_1^{(i)}, \tfrac{1}{n}\sum_{i=1}^{n} a_2^{(i)}, \tfrac{1}{n}\sum_{i=1}^{n} a_3^{(i)}) \tag{3}$$

In Eq. 2, $A_i$ indicates expert's view i and Aave represents the average of expert's view. The results of these calculations have been presented in Table 3.

**Table 3:** Results and the experts' agreement with factors

| Factors | Very low | low | medium | high | Very high | β | α | m | X |
|---|---|---|---|---|---|---|---|---|---|
| knowledge | 0 | 0 | 2 | 4 | 9 | 0.07 | 0.22 | 0.87 | 0.83 |
| intelligence | 0 | 1 | 4 | 5 | 5 | 0.13 | 0.21 | 0.73 | 0.71 |
| emotional arousal | 0 | 2 | 3 | 6 | 4 | 0.13 | 0.20 | 0.70 | 0.68 |
| religious insight & discernment | 9 | 4 | 2 | 0 | 0 | 0.22 | 0.07 | 0.13 | 0.17 |
| having a model of successful people | 0 | 0 | 1 | 3 | 11 | 0.05 | 0.23 | 0.92 | 0.87 |
| motivation and attitude | 5 | 8 | 2 | 0 | 0 | 0.20 | 0.11 | 0.20 | 0.22 |
| mental and physical abilities | 3 | 4 | 4 | 3 | 1 | 0.19 | 0.15 | 0.42 | 0.43 |
| skill | 3 | 5 | 5 | 2 | 0 | 0.20 | 0.15 | 0.35 | 0.36 |
| personality | 2 | 2 | 4 | 4 | 3 | 0.16 | 0.18 | 0.57 | 0.56 |
| self Confidence | 0 | 1 | 4 | 7 | 3 | 0.15 | 0.20 | 0.70 | 0.69 |
| satisfaction and respect | 2 | 5 | 6 | 2 | 0 | 0.20 | 0.17 | 0.38 | 0.39 |
| safety and tranquility | 4 | 5 | 5 | 1 | 0 | 0.21 | 0.14 | 0.30 | 0.32 |
| feel effective | 4 | 4 | 1 | 3 | 3 | 0.17 | 0.14 | 0.45 | 0.46 |
| appreciation and compensation | 4 | 4 | 4 | 1 | 2 | 0.18 | 0.15 | 0.38 | 0.39 |
| leadership and management activities | 1 | 1 | 4 | 4 | 5 | 0.13 | 0.20 | 0.68 | 0.67 |
| training and development | 0 | 0 | 2 | 8 | 5 | 0.11 | 0.20 | 0.80 | 0.78 |
| nature of decision-making and accountability | 3 | 3 | 7 | 1 | 1 | 0.21 | 0.17 | 0.40 | 0.41 |
| Information and communications | 1 | 2 | 6 | 3 | 3 | 0.17 | 0.20 | 0.58 | 0.58 |
| organizational trust | 6 | 3 | 4 | 2 | 0 | 0.22 | 0.12 | 0.28 | 0.31 |
| performance appraisal | 0 | 0 | 7 | 4 | 4 | 0.16 | 0.22 | 0.70 | 0.68 |
| organizational justice | 5 | 5 | 4 | 0 | 1 | 0.20 | 0.13 | 0.28 | 0.30 |
| clarity of purpose | 2 | 2 | 2 | 4 | 5 | 0.13 | 0.18 | 0.63 | 0.62 |
| organizational structure | 4 | 4 | 3 | 3 | 1 | 0.19 | 0.14 | 0.38 | 0.40 |
| work force diversity | 7 | 4 | 4 | 0 | 0 | 0.22 | 0.11 | 0.20 | 0.23 |
| job structure | 4 | 8 | 2 | 1 | 0 | 0.19 | 0.12 | 0.25 | 0.27 |
| environmental changes | 3 | 3 | 3 | 3 | 3 | 0.16 | 0.16 | 0.50 | 0.50 |
| employee union | 12 | 3 | 0 | 0 | 0 | 0.23 | 0.03 | 0.05 | 0.10 |
| work rules | 7 | 5 | 2 | 1 | 0 | 0.21 | 0.09 | 0.20 | 0.23 |
| social and cultural environment | 0 | 1 | 7 | 5 | 2 | 0.18 | 0.21 | 0.63 | 0.63 |
| threats and opportunities identification | 8 | 2 | 3 | 1 | 1 | 0.21 | 0.10 | 0.25 | 0.28 |
| economic environment | 2 | 1 | 8 | 3 | 1 | 0.21 | 0.19 | 0.50 | 0.50 |
| –environment status | 7 | 5 | 1 | 1 | 1 | 0.19 | 0.09 | 0.23 | 0.26 |
| relationship between society and the university | 2 | 3 | 6 | 3 | 1 | 0.19 | 0.18 | 0.47 | 0.47 |
| officials support | 0 | 0 | 6 | 4 | 5 | 0.14 | 0.22 | 0.73 | 0.71 |
| evaluation of strengths and weaknesses | 9 | 3 | 3 | 0 | 0 | 0.23 | 0.08 | 0.15 | 0.19 |
| creativity, innovation and being productive | 0 | 0 | 1 | 8 | 6 | 0.10 | 0.20 | 0.83 | 0.81 |
| individual autonomy | 0 | 1 | 4 | 5 | 5 | 0.13 | 0.21 | 0.73 | 0.71 |
| risk-taking | 0 | 0 | 7 | 3 | 5 | 0.15 | 0.23 | 0.72 | 0.70 |
| value and wealth-creation culture | 0 | 1 | 6 | 1 | 7 | 0.12 | 0.24 | 0.73 | 0.70 |
| commercialization | 3 | 7 | 3 | 2 | 0 | 0.19 | 0.14 | 0.32 | 0.33 |
| science and technology park | 0 | 1 | 9 | 3 | 2 | 0.19 | 0.22 | 0.60 | 0.59 |
| create value and wealth creation | 0 | 0 | 4 | 1 | 10 | 0.08 | 0.24 | 0.85 | 0.81 |
| process reengineering | 5 | 2 | 7 | 0 | 1 | 0.22 | 0.15 | 0.33 | 0.35 |
| creating a halal business environment | 8 | 4 | 3 | 0 | 0 | 0.22 | 0.09 | 0.17 | 0.20 |

In the Table 3, the triangular fuzzy average has been calculated by using the formula 2 and then has been "defuzzified" by using the Minkowski's formula (Eq. 1). The definitive obtained average(X) indicates the intensity of the experts' agreement with each of the factors of the research conceptual model.

## 4.2. Second stage: distribution of questionnaire of second version

At this stage, after displaying the results of the first questionnaire for each individual, we tried to inform the experts on the preliminary results of each question and responses of individuals, and then second questionnaire was presented to the individuals. Results of responses have been provided in Table 4, the "fuzzified" results of the study options have been also given in Table 4.

According to the views presented in the first stage and comparing them with the results of this stage, if the difference between the two stages is less than the threshold very low, (0/1) then the opinion poll process is stopped (Cheng and Lin, 2002).

$$S(A_{m1}, A_{m2}) = \left| \frac{1}{3}[(a_{m21} + a_{m22} + a_{m23}) - (a_{m11} + a_{m12} + a_{m13})] \right| \qquad (4)$$

According to the above formula, it can be calculated the average difference of experts in first and second groups. The difference between first and second stages has been provided also in the last column of Table 4.

**Table 4:** Results and the expert's agreement and differences with factors

| Factors | Very low | low | medium | high | Very high | β | α | m | X | Differences |
|---|---|---|---|---|---|---|---|---|---|---|
| knowledge | 0 | 0 | 0 | 2 | 13 | 0.02 | 0.24 | 0.97 | 0.91 | 0.08 |
| intelligence | 0 | 0 | 1 | 3 | 11 | 0.05 | 0.23 | 0.92 | 0.87 | 0.16 |
| emotional arousal | 0 | 0 | 1 | 8 | 6 | 0.10 | 0.20 | 0.83 | 0.81 | 0.13 |
| religious insight & discernment | 13 | 1 | 1 | 0 | 0 | 0.24 | 0.03 | 0.05 | 0.10 | 0.07 |
| having a model of successful people | 0 | 0 | 0 | 1 | 14 | 0.01 | 0.24 | 0.98 | 0.93 | 0.05 |
| motivation and attitude | 9 | 6 | 0 | 0 | 0 | 0.21 | 0.06 | 0.10 | 0.14 | 0.08 |
| mental and physical abilities | 7 | 4 | 3 | 1 | 0 | 0.22 | 0.10 | 0.22 | 0.25 | 0.18 |
| skill | 8 | 4 | 2 | 1 | 0 | 0.22 | 0.08 | 0.18 | 0.22 | 0.15 |
| personality | 0 | 1 | 5 | 6 | 3 | 0.15 | 0.20 | 0.68 | 0.67 | 0.11 |
| self confidence | 0 | 0 | 2 | 6 | 7 | 0.09 | 0.21 | 0.83 | 0.80 | 0.12 |
| satisfaction and respect | 5 | 5 | 1 | 4 | 0 | 0.19 | 0.11 | 0.32 | 0.34 | 0.05 |
| safety and tranquility | 6 | 4 | 5 | 0 | 0 | 0.22 | 0.12 | 0.23 | 0.26 | 0.06 |
| feel effective | 8 | 3 | 3 | 1 | 0 | 0.22 | 0.09 | 0.20 | 0.23 | 0.23 |
| appreciation and compensation | 7 | 3 | 3 | 1 | 1 | 0.21 | 0.11 | 0.27 | 0.29 | 0.10 |
| leadership and management activities | 0 | 0 | 3 | 5 | 7 | 0.10 | 0.22 | 0.82 | 0.79 | 0.12 |
| training and development | 0 | 0 | 0 | 2 | 13 | 0.02 | 0.24 | 0.97 | 0.91 | 0.13 |
| nature of decision-making and accountability | 6 | 4 | 3 | 1 | 1 | 0.20 | 0.12 | 0.28 | 0.30 | 0.10 |
| Information and communications | 0 | 0 | 1 | 3 | 11 | 0.05 | 0.23 | 0.92 | 0.87 | 0.30 |
| organizational trust | 10 | 4 | 1 | 0 | 0 | 0.22 | 0.06 | 0.10 | 0.14 | 0.17 |
| performance appraisal | 0 | 0 | 2 | 3 | 10 | 0.06 | 0.23 | 0.88 | 0.84 | 0.16 |
| organizational justice | 8 | 6 | 1 | 0 | 0 | 0.21 | 0.08 | 0.13 | 0.17 | 0.13 |
| clarity of purpose | 0 | 0 | 1 | 11 | 3 | 0.13 | 0.18 | 0.78 | 0.77 | 0.15 |
| organizational structure | 8 | 5 | 1 | 1 | 0 | 0.21 | 0.08 | 0.17 | 0.20 | 0.20 |
| work force diversity | 13 | 1 | 1 | 0 | 0 | 0.24 | 0.03 | 0.05 | 0.10 | 0.13 |
| job structure | 8 | 7 | 0 | 0 | 0 | 0.20 | 0.07 | 0.12 | 0.15 | 0.12 |
| environmental changes | 0 | 1 | 3 | 3 | 8 | 0.09 | 0.22 | 0.80 | 0.77 | 0.27 |
| employee union | 15 | 0 | 0 | 0 | 0 | 0.25 | 0.00 | 0.00 | 0.06 | 0.04 |
| work rules | 12 | 2 | 1 | 0 | 0 | 0.24 | 0.04 | 0.07 | 0.12 | 0.11 |
| social and cultural environment | 0 | 0 | 3 | 3 | 9 | 0.08 | 0.23 | 0.85 | 0.81 | 0.19 |
| threats and opportunities identification | 11 | 3 | 0 | 1 | 0 | 0.22 | 0.04 | 0.10 | 0.15 | 0.13 |
| economic environment | 0 | 0 | 3 | 6 | 6 | 0.11 | 0.21 | 0.80 | 0.78 | 0.27 |
| environment status | 14 | 1 | 0 | 0 | 0 | 0.24 | 0.01 | 0.02 | 0.08 | 0.18 |
| relationship between society and the university | 3 | 5 | 6 | 1 | 0 | 0.21 | 0.16 | 0.33 | 0.35 | 0.13 |
| officials support | 0 | 0 | 1 | 3 | 11 | 0.05 | 0.23 | 0.92 | 0.87 | 0.16 |
| evaluation of strengths and weaknesses | 13 | 2 | 0 | 0 | 0 | 0.24 | 0.02 | 0.03 | 0.09 | 0.10 |
| creativity, innovation and being productive | 0 | 0 | 0 | 0 | 15 | 0.00 | 0.25 | 1.00 | 0.94 | 0.13 |
| individual autonomy | 0 | 0 | 1 | 4 | 10 | 0.06 | 0.22 | 0.90 | 0.86 | 0.15 |
| risk-taking | 0 | 0 | 2 | 4 | 9 | 0.07 | 0.22 | 0.87 | 0.83 | 0.13 |
| value and wealth creation culture | 0 | 0 | 0 | 6 | 9 | 0.06 | 0.21 | 0.90 | 0.86 | 0.16 |
| commercialization | 6 | 7 | 2 | 0 | 0 | 0.20 | 0.10 | 0.18 | 0.21 | 0.12 |
| science and technology park | 2 | 4 | 9 | 0 | 0 | 0.22 | 0.19 | 0.37 | 0.38 | 0.22 |
| create value and wealth creation | 0 | 0 | 0 | 1 | 14 | 0.01 | 0.24 | 0.98 | 0.93 | 0.12 |
| process reengineering | 12 | 2 | 1 | 0 | 0 | 0.24 | 0.04 | 0.07 | 0.12 | 0.23 |
| creating a halal business environment | 11 | 3 | 1 | 0 | 0 | 0.23 | 0.05 | 0.08 | 0.13 | 0.07 |

As the last column of the Table 4 shows the members of the experts have reached consensus in knowledge, religious insight and discernment, motivation and attitude, having a model of successful people, satisfaction and respect, safety and tranquility, employee union, and creating a halal business environment factors. The disagreement in the first and second stages has been less than threshold very low (0.1); so an opinion poll about this factors is stopped. Members of the experts have agreed with knowledge, and satisfaction and respect factors and have disagreed with other factors and because it obtained scores for the factors located in the range of very low so it can be removed from the conceptual model.

## 4.3. Third stage: distribution of questionnaire of third version

At this stage, after necessary changes in models factors and criteria, the third questionnaire was prepared, and along with the previous results of each question and responses of individuals and the difference with the average of other experts, sent to the individual again. The difference is that, at this stage from the 44 factors in the previous stage, 8 factors have been removed, and opinion poll have been conducted about the remaining factors. The results are shown in Table 5.

According to Table 5 and by comparing the differences with threshold number (0.1) is

determined that appreciation and compensation, leadership and management activities, environmental changes, relationship between society and the university, and science and technology park factors must be entered into the next stage of Fuzzy Delphi method.

**Table 5:** Results and the expert's agreements and differences with factors of stage 2 and 3

| Factors | Very low | low | medium | high | Very high | β | α | m | X | Differences |
|---|---|---|---|---|---|---|---|---|---|---|
| intelligence | 0 | 0 | 0 | 2 | 13 | 0.02 | 0.24 | 0.97 | 0.91 | 0.04 |
| emotional arousal | 0 | 0 | 0 | 3 | 12 | 0.03 | 0.23 | 0.95 | 0.90 | 0.09 |
| mental and physical abilities | 11 | 2 | 1 | 1 | 0 | 0.23 | 0.05 | 0.12 | 0.16 | 0.08 |
| skill | 10 | 3 | 1 | 1 | 0 | 0.22 | 0.06 | 0.13 | 0.18 | 0.04 |
| personality | 0 | 1 | 2 | 8 | 4 | 0.12 | 0.19 | 0.75 | 0.73 | 0.06 |
| Self confidence | 0 | 0 | 1 | 3 | 11 | 0.05 | 0.23 | 0.92 | 0.87 | 0.07 |
| feel effective | 10 | 3 | 1 | 1 | 0 | 0.22 | 0.06 | 0.13 | 0.18 | 0.06 |
| appreciation and compensation | 10 | 1 | 4 | 0 | 0 | 0.24 | 0.08 | 0.15 | 0.19 | 0.10 |
| leadership and management activities | 0 | 0 | 0 | 1 | 14 | 0.01 | 0.24 | 0.98 | 0.93 | 0.14 |
| training and development | 0 | 0 | 0 | 1 | 14 | 0.01 | 0.24 | 0.98 | 0.93 | 0.01 |
| nature of decision-making and accountability | 8 | 3 | 2 | 2 | 0 | 0.22 | 0.08 | 0.22 | 0.25 | 0.05 |
| information and communications | 0 | 0 | 0 | 2 | 13 | 0.02 | 0.24 | 0.97 | 0.91 | 0.04 |
| organizational trust | 12 | 2 | 1 | 0 | 0 | 0.24 | 0.04 | 0.07 | 0.12 | 0.03 |
| performance appraisal | 0 | 0 | 1 | 1 | 13 | 0.03 | 0.24 | 0.95 | 0.90 | 0.05 |
| organizational justice | 11 | 1 | 3 | 0 | 0 | 0.24 | 0.06 | 0.12 | 0.16 | 0.00 |
| clarity of purpose | 0 | 0 | 1 | 7 | 7 | 0.09 | 0.20 | 0.85 | 0.82 | 0.05 |
| organizational structure | 9 | 5 | 1 | 0 | 0 | 0.22 | 0.07 | 0.12 | 0.15 | 0.05 |
| work force diversity | 13 | 2 | 0 | 0 | 0 | 0.24 | 0.02 | 0.03 | 0.09 | 0.02 |
| Job structure | 12 | 3 | 0 | 0 | 0 | 0.23 | 0.03 | 0.05 | 0.10 | 0.05 |
| environmental changes | 0 | 0 | 1 | 2 | 12 | 0.04 | 0.24 | 0.93 | 0.88 | 0.12 |
| work rules | 13 | 1 | 1 | 0 | 0 | 0.24 | 0.03 | 0.05 | 0.10 | 0.01 |
| social and cultural environment | 0 | 0 | 1 | 2 | 12 | 0.04 | 0.24 | 0.93 | 0.88 | 0.07 |
| threats and opportunities identification | 12 | 3 | 0 | 0 | 0 | 0.23 | 0.03 | 0.05 | 0.10 | 0.05 |
| economic environment | 0 | 0 | 1 | 7 | 7 | 0.09 | 0.20 | 0.85 | 0.82 | 0.05 |
| environment status | 15 | 0 | 0 | 0 | 0 | 0.25 | 0.00 | 0.00 | 0.06 | 0.01 |
| relationship between society and the university | 7 | 6 | 2 | 0 | 0 | 0.21 | 0.09 | 0.17 | 0.20 | 0.15 |
| officials support | 0 | 0 | 0 | 1 | 14 | 0.01 | 0.24 | 0.98 | 0.93 | 0.05 |
| evaluation of strengths and weaknesses | 14 | 1 | 0 | 0 | 0 | 0.24 | 0.01 | 0.02 | 0.08 | 0.01 |
| creativity, innovation and being productive | 0 | 0 | 0 | 0 | 15 | 0.00 | 0.25 | 1.00 | 0.94 | 0.00 |
| individual autonomy | 0 | 0 | 0 | 2 | 13 | 0.02 | 0.24 | 0.97 | 0.91 | 0.05 |
| risk-taking | 0 | 0 | 1 | 2 | 12 | 0.04 | 0.24 | 0.93 | 0.88 | 0.05 |
| value and wealth-creation culture | 0 | 0 | 0 | 2 | 13 | 0.02 | 0.24 | 0.97 | 0.91 | 0.05 |
| commercialization | 9 | 5 | 1 | 0 | 0 | 0.22 | 0.07 | 0.12 | 0.15 | 0.05 |
| science and technology park | 8 | 4 | 3 | 0 | 0 | 0.22 | 0.09 | 0.17 | 0.20 | 0.18 |
| create value and wealth creation | 0 | 0 | 0 | 0 | 15 | 0.00 | 0.25 | 1.00 | 0.94 | 0.01 |
| process reengineering | 15 | 0 | 0 | 0 | 0 | 0.25 | 0.00 | 0.00 | 0.06 | 0.05 |

Also, as it is specified in the Table 5, mental and physical abilities, skills, feel effective, the nature of decision-making and accountability, organizational trust, organizational justice, organizational structure, work force diversity, job structure, work rules, threats and opportunities identification, environment status, evaluation of strengths and weaknesses, and commercialization factors are removed from the model because located in the range of very low.

**4.4. Fourth stage: distribution of questionnaire of fourth version**

At this stage, the forth questionnaire was prepared, and along with the previous results of each question and responses of individuals and the difference with the average of other experts, sent to the experts again. The difference is that, at this stage opinion poll have been conducted about the 5 remaining factors. Results are shown in Table 6.

As the Table 6 shows, the disagreement in the third and fourth stages has been less than threshold very low; so an opinion poll is stopped at this stage. According to Table 6 appreciation and compensation, relationship between society and the university, and science and technology park factors are removed from model.

Eventually after the fourth stage of the opinion poll from 44 factors and in 4 dimensions, the final research model is as Fig. 3.

**Table 6:** Results and the expert's agreements and differences with factors of stage 3 and 4

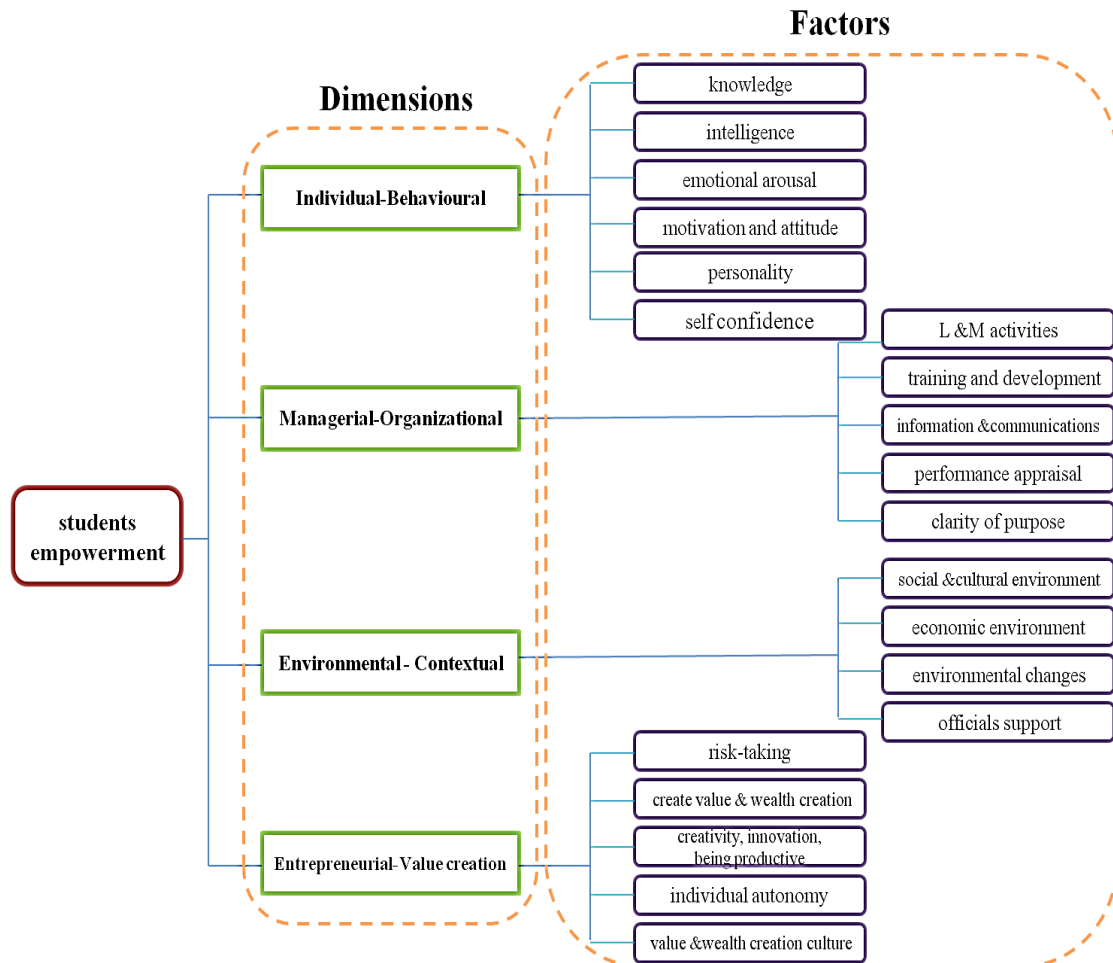| Factors | Very low | low | medium | high | Very high | β | α | m | X | Differences |
|---|---|---|---|---|---|---|---|---|---|---|
| appreciation and compensation | 12 | 2 | 1 | 0 | 0 | 0.24 | 0.04 | 0.07 | 0.12 | 0.07 |
| leadership and management activities | 0 | 0 | 0 | 0 | 15 | 0.00 | 0.25 | 1.00 | 0.94 | 0.01 |
| environmental changes | 0 | 0 | 1 | 1 | 13 | 0.03 | 0.24 | 0.95 | 0.90 | 0.02 |
| relationship between society and the university | 9 | 5 | 1 | 0 | 0 | 0.22 | 0.07 | 0.12 | 0.16 | 0.04 |
| science and technology park | 10 | 3 | 2 | 0 | 0 | 0.23 | 0.06 | 0.12 | 0.16 | 0.04 |



**Fig. 3:** Research conceptual model

## 5. Conclusion

With new developments in human awareness and knowledge and the progress and change of approach occurring in the universities from knowledge and research oriented to entrepreneur and value creating academies, it seems that presenting a relatively comprehensive model of empowerment for students can be quite helpful in reaching the goals of entrepreneurship and value creation. Utilizing a native model can be more efficient in mitigating the existing voids. The proposed model in this paper is able to form the context necessary for empowerment of students in Iran's higher education system, enabling them to troubleshoot the matter of student empowerment in Iran's higher education system, extract the plans and actions required for improvement and evaluate their place in the empowerment process with the approach of establishing the 3rd and 4th generation academies.

It is believed that in today's competitive, knowledge-based world, organizations and communities' success depends on the empowerment of human resources. Empowerment is a cultural movement, the beginning of which depends on the vision and attitude of the higher-ups of the organization, since through correct cultural education, various factors will interact together for successfully implementing the empowerment process. Therefore, universities and institutions of higher education can utilize this research findings as a means of empowering students. Review of the

literature reveals that for the empowerment of human resources, use of a comprehensive, systematic view is essential in order to form a seamless schedule for empowerment of human capital. Thus, the research provides the educational institution stakeholders with such comprehensive outlook and helps to empower students through utilization of the identified factors and variables for the purpose of entrepreneurship and wealth and value creation. Moreover, the culture of empowerment needs to be instilled in the academies, orienting the students towards teamwork.

Overall, it could be stated that the limitations incurred by time and space that exist for all of the researches related to human science disciplines in general and the topic of empowerment in particular, doesn't leave adequate room for using the results of the research in various settings (countries) or circumstances. For the application of the results, it is necessary to first establish the needed localizations related to the results of the study so that it is used correctly. For rating the adequacy of the topic, while it is possible to compare the results of the research with those of some of the studies mentioned in the previous section, it is better to conduct such comparisons with the utmost care, since the concept of the entrepreneur and value creation university is still at the beginning of its path, and the research can act as a pioneering work and innovation for the purpose of continuing the work and conducting more researches in the field. However, it could be noted that the first step for the development and promotion of students' empowerment model is gaining a clear insight into the current position in the path, and to correctly utilize the strategies of human resources' empowerment in the conceptual framework of the model in higher education institutions.

Eventually, the model of the paper, apart from acquiring enough support, has also been refined by expert opinions and therefore, some of the initial 44 factors were removed from it, leading to a final certified model with 4 dimensions and 20 factors. The pattern presented in this paper can evaluate the empowerment of students with the approach of establishing the 3rd and 4th generation academies, and achieve success due to taking advantage of a rich literature base, various quantified models, measurable criteria and implementation of expert opinions.

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