

# HIGHER EDUCATION: THE ROLE OF UNIVERSITIES RESEARCH STRUCTURE

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*As higher education plays a pivotal role in the economic well-being of modern societies, universities today are faced with increasing pressure in order to improve their accountability and performance. They have to redesign the research structure to achieve the set objectives. The present survey aimed at studying the factors and related indicators that affect the effectiveness of the research structure of the universities. The sample included 274 faculty members who were selected through stratified random method at 8 branches of Islamic Azad University in Tehran province (Iran). Research questions were: a) What key Factors influence the Effectiveness of the universities' research structure? and b) What conceptual model can be designed? Finally, in this study using a questionnaire and factor analysis technique, eight factors were identified and ranked which contribute towards the effectiveness of research structure in universities. Finally, a conceptual model has been proposed for the universities to strengthen their research structure.*

**KEYWORDS:** Conceptual Model, Effectiveness, Research Structure

## INTRODUCTION

Higher education has proved to be a growing concern in many countries as

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universities play a decisive role in the current advancement of societies (Gomez, Bordons, Fernandez, & Morillo, 2009). Many governments provide higher education institutions with the resources required for realizing the educational quality that position them in the current educational context which is characterized by globalization, internalization and economic challenges. Accordingly, policy makers and stakeholders are under constant pressure to optimize the educational quality of the universities. Universities effectiveness determines the extent that an organization has achieved its mission and goals as seen from the perspective of its stakeholders.

As many factors influence effectiveness of these complex organizations, the structural processes need to be aligned with their mission and goals (Abili, Dariyan, Khodamoradi, & Jabbari, 2015). Structure is one of the key factors that influences the quality and research performance of the universities. Thus, the concept of organizational structure must be identified. Organizational structure is the way responsibility and power are allocated, and work procedures are carried out by organizational members (Blau, 1970; Dewar & Werbel, 1979; Germain, 1996; Ruekert, Walker, & Roering, 1985; Walton, 1986).

Structural contingency theory used in the literature on organizational design (Khandwalla, 1977; Burton & Obel, 2004) specifies design contingencies that lead to the optimization of the organizational structure. According to the Institutional Theory an optimal organizational structure is the one that fits the institutional environment as well as providing beneficial consequences for the organization, in terms of external legitimacy and support (Donaldson, 2008). In this context, one factor that enables universities to achieve their goals is to use the effective research structure.

The related literature shows that organizational structure has multiple dimensions (Koufteros, Vonderembse, & Doll, 1998). Appropriate structure is defined as a set of context-structure combinations that are fit according to contingency theory (Schlevogt, 2001). According to Burns and Stalker (1961), there are two kinds of organizational structures: mechanic (mechanistic) organizations and organic (dynamic) organizations. The most effective structure is one that adopts itself with spatial requirements; namely, a mechanistic design is usable in a sustainable and relied environment and an organic structure is usable in a turbulent and high-changing environment (Amiri, AliNaghi, Ramazan, Majid, & Omrani, Abdollah, 2010). Moreover, organizational structure is partly affected by the firm external environment (Lawrence & Lorsch, 1967). In other word, organizational structure determines its centralization, formalization, and size (Atwater, 1995; House, 1991). Ambrose and Schminke (2003, p. 298) note that organizational structure and form is "a shared phenomenon", consisting of the shared perceptions of an

organization's practices, policies, and routines which provide a system of institutionalized beliefs regarding how the organization operates. It indicates an enduring configuration of tasks and activities (Skivington & Daft, 1991). So, organizational design is the body of knowledge and techniques that seeks to offer useful advice to organizations about their structures (and other aspects) needed to attain their goals (Burton & Obel, 2004). The contingency theory approaches to organizational design strongly emphasizes the consequences of the performance of the structural fit or misfit (Donaldson, 2001). Also, modern companies try to adopt the best organizational structure for retaining, using and improving their intellectual capital (Ramezan, 2011). In order to improve intellectual capital in the organization a set knowledge-based structure is required. The higher education of Iran is faced with various competition and challenges; thus, design of effective research structure is essential at Islamic Azad University branches.

In this context, the design of universities structure based on environmental conditions that creates agility in the current structure with an emphasis on re-engineering of existing structures is essential. Flexibility and up to date universities need new, decentralize, accountable and knowledge-based structures. Therefore, this study investigated the factors and related indicators that affect the effectiveness of the research structure in universities and finally proposed a conceptual model. In other words, it identifies the key factors affecting the Effectiveness of structure in universities and finally set forward a conceptual model.

## RESEARCH METHODOLOGY

The research method used in the present study is the quantitative method. The research type is applied in view of its objective. Following the study of theoretical concepts and literature, the various aspects of the research structure and structure research factors were noted. The statistical population included all faculty members of Islamic Azad University branches in Tehran zone. The required sample size was estimated to be 274 using the Cochran formula. Since the statistical population came from several branches of the university, they were selected through stratified sampling. A questionnaire was used to collect the data. Cronbach's alpha was used to determine the reliability of the questionnaire (94%). The data were collected from 96 items which covered 8 major factors of research structure in universities.

Descriptive statistical methods were used for classification, producing tables, drawing charts, and calculating the means and standard deviations. Since the present study aimed at creating a model, a principal components

factor analysis was also undertaken to analyse data. To develop the questionnaire based on the literature review, a list of components of the effective structure were extracted which was adjusted using experts final list.

## RESULTS OF THE STUDY

Table1

Descriptive Analysis of Data.

Factors	Sample	Range	Mean	Standard Deviation	Variance
Management Systems	274	2.51	3.51	0.75	0.56
Providing Infrastructure	274	2.63	3.58	0.68	0.46
Teams and Network Collaborations	274	5.64	3.62	1.02	1.04
Research Process Facilities	274	2.73	3.55	0.81	0.66
Research Vision	274	3.00	3.10	0.68	0.47
Capacity Building	274	3.14	3.50	0.78	0.62
Professionalism	274	3.17	2.74	0.77	0.60
Evaluation Systems	274	2.67	3.57	0.67	0.45

As shown in the Table 1, there are 8 factors which affect the effectiveness of universities structures. The AMOS factor analysis tool was used to provide the conceptual model (Figure 1) which determines the factors influencing the effectiveness of universities structure. All 95 Indicators in the Questionnaire focused on the 8 key factors that affect the research structure of the universities.

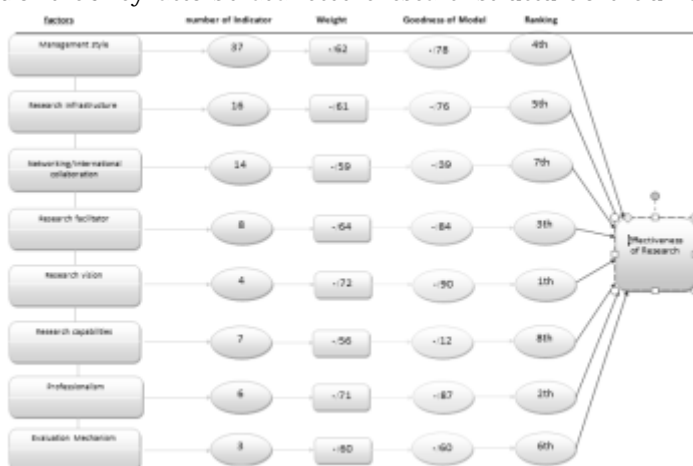


Figure 1 The Proposed Conceptual Model.

According to the proposed Model, eight key factors with 95 related indicators explain and constituent 0.80% of the effectiveness of research structure in Islamic Azad Universities. This model presents key factors and indicators, as well as factor weights which are independent variable (Effectiveness of Research) and goodness of fit model. The model indicated that factors such as clarity of research vision (0.72%), professionalism (0.71%), Research facilities (0.64%), Management Style (0.62%), Research Infrastructure (0.61%), Evaluation Mechanism (0.60%), Networking and International Collaboration (0.59%) and Research Capabilities (0.56%) affect the model. For the reliability and fitting of the model, result of factor analysis indicated that X<sup>2</sup> (1.63), CFI (0.93), RMSEA (0.019) and GFI (0.84) with use of the goodness model. As model depicts, the Goodness of model for each factor is mentioned: Research Vision Factor (90%), Professionalism (87%), Research Facilities (84%), Management Style (78%), Research Infrastructure (76%), Evaluation Mechanism (60%), Networking and international collaboration (0.59%) and Research capabilities (0.56%).

## DISCUSSION AND CONCLUSIONS

This study aimed at investigating the most important interfering factors which create effectiveness of research structures in universities. The most important factors were conceptualized in the eight categories as shown in the proposed conceptual model. The results of the study showed that these factors contributed 80% in research structure effectiveness as independent variable. The model depicts 96 indicators which are importance in creating flexible, agile, appropriate and effective organizational structure in the higher educational institutions. The proposed model for understanding universities effectiveness and the aligned organizational structure is very important in order to achieve the vision and goals. In this research in addition to identifying key eight factors, also 96 indicators were conceptualized via exploratory factor analysis. The results also show that the proposed model is reliable. The goodness model for each factor implied that clarity of research vision (0.72%), Professionalism (0.71%), Research Facilities (0.64%), Management Style (0.62%), Research Infrastructure (0.61%), Evaluation Mechanism (0.60%), Networking and International Collaboration (39%) and Research capabilities (12%) have been confirmed.

The findings of study as related to literature review and the previous research argues that organizational structure has multiple dimensions. As address earlier by Lawrence and Lorsch (1967) organizational structure is partly affected by the firm external environment. As remarked by Mathur and Nair (2016) organizational structure as a framework enables the organizations

obtain their strategic goal and operate efficiently. The finding of study showed that universities managers should use research-based strategies and establish a flexible structure to achieve the desired goals. The literature review indicated that there are several factors related to structural effectiveness., Zheng, Wei, Yang, Baiyin, and Gary (2010) explained that knowledge management mediates the impact of organizational structure and strategy on organizational effectiveness. Sparrow and Hiltrop (1997) also added that autonomy in decision-making is vital to organizational effectiveness. According to the results of the studies, the findings of the present study implied the need for a delegation of authority and power to universities and research centres as well as researcher's collaboration in decision making.

On other hand, research studies showed that the intellectual capital is affected by organizational structure in organizations (Wang & Ahmed, 2003). So, in order to improve intellectual capital in the universities a knowledge-based structure which fosters knowledge creation and distribution between researchers and teams is required. The findings identified that the research vision category with a weight of 72% achieved first ranking in the model. This finding is confirmed by Mathur and Nair (2016) who believed that organizations cannot survive without a vision, mission, and beneficial structure which supports an organization in gaining its goals. The significance of this study lies in its ability to serve universities and research Institutions managers to understand the importance of the structure in the performance and effectiveness of organization. Therefore, Findings of this study suggest that universities in order to be effective and to achieve its goals must respond to environment circumstances according to Singh (1991) and Sagimo (2002) as quoted by (Razia, 2015).

Organizational effectiveness is one of the most critical functions of the higher education system. Different structures arise in response to a variety of internal and external forces, including technological demands, organizational growth, environmental turbulence, size and strategy which confirm with the current study findings on international collaboration of faculty members and attention to technology, knowledge management and contingency theory in structure design.

The study of organizational design (Burton & Obel, 2004) has been influenced by structural contingency theory. The contingency theory approach to organizational design strongly emphasizes the consequences for performance of structural fit or misfit (Donaldson, 2001). However, it is necessary to meet common language via relating the current findings and results with earlier research.

The effectiveness of research structure in universities depends on organic and dynamic structure (Burnes & Stulker, 1961), decentralization and distribution of power with researcher (Schminke, et.al, 2000), redefining of the roles and responsibilities (Abili, et.al., 2016), responding to environmental demands (Cross, 2000), attention to role of teams and research network (Brass, 2004), encouraging of innovation (Pierce & Clerg, 1977), effect of technology on organizational structure (Singh, 1986), autonomy of research centres (Miner, 1982), role of structural effectiveness in organizational performance (Parasad, 1994), design organizational structure to achieve competitive advantage and focus to knowledge management (Nazem, 2016), and selection of appropriate management style for universities exactly confirms the Chinyere, Ndukwe, Ukeje, Ikechukwuogeze, & Onele, Paul Chuwu Jindu (2015) study results.

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