Strategic Roadmap for the Analysis of Environmental Complexities in the Textile Sector of Pakistan

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Abstract: This study examines the state of environmental complexity in the context of the developing countries as a fundamental part of organizational change and development. It reviews the available literature to analyze the different viewpoints and arguments to provide a rationale for understanding environmental complexity. This study then leads onto a discussion of potential challenges faced by the textile sector of Pakistan. The study focuses on two types of environmental complexities related to the textile sector, which is currently the largest manufacturing sector in Pakistan. This study suggests that environmental analysis is a prerequisite for understanding the external environment in which general and international are the two important dimensions. To understand these complexities, this study suggests: recognition of the context of the developing countries; identification of the complex variables for understanding their effects on organization; and a study of the relationship of variables of general and international environment.

Key words: Environmental complexities, general environment, international environment, developing countries, textile sector

INTRODUCTION

The organizational environment in the developing countries is generally characterized by several factors that are detrimental to the organizational efficiency. The political instability, energy crisis, deteriorating law and order situation, misuse of resources, managerial inefficiency, high production cost, less governmental support and immense international socio-economic pressures are the problems faced by most of the developing economies. Due to these reasons, organization of the developing countries is relatively less efficient than the organization of the developed countries.

Although there has been a considerable growth in Pakistan in textile and textile related products during the last decade, the organization in this sector is presently facing a challenging situation. This situation is mainly the result of environmental complexities. It is argued that environmental complexities adversely affect the organizational performance. Therefore, this article examines and describes the environmental complexities of the textile sector in Pakistan, identifies the potential risks, and suggests a framework for further research to improve performance of this sector.

Literature on environmental complexity: In the organizational theory, complexity is an important variable that characterizes both organization and its environment (Anderson, 1999). Environmental complexity remains the major concern for organizational theorists since the seminal work of Emery and Trist (1965), who discussed this concept in the context of environmental turbulence and change. After their work, Thomson (1967) described complexity as heterogeneity and diversity, whereas, Duncan (1972) for the first time operationalized the concept by describing two important characteristics of complex environment. According to him, complexity is the number of factors characterizing an environment, and the heterogeneity among these factors. Moreover, Duncan also introduced the notion of Internal and External complexities. In the internal environment, organizational structure, culture, technology, and personnel are the important factors affecting complexity while, customers, suppliers, competitors, and socio-cultural components of the environment are considered as the factors of external complexity.

After Duncan’s work, some other significant studies have been carried out in this field, like, Dess and Beard (1984), Mintzberg (1979), Singh (1997) and Tung (1979). But the concentration of these researchers in their subsequent studies remains on two basic points previously described by Duncan (1972). Hence environmental complexity could be “The number of different items or elements that must be dealt with simultaneously by the...
organization" (Scott, 1992). In more comprehensive terms, environmental complexity is the number and interactions between the elements of the environment where future behavior of the environment is unpredictable and frequency of changes in variables is unknown. The intensity of the interactions among elements is another important component of environmental complexity (Tsoukas and Hatch, 2001). On the other hand, organizational complexity can be measured as the number of activities and subsystems in the organization (Daft, 1992). According to Daft, there are three dimensions of organizational complexity: Vertical complexity, Horizontal Complexity and Spatial Complexity. Vertical Complexity is the number of levels in organizational hierarchy, if there are more levels in hierarchy it is said to be a complex organization, Horizontal complexity, is the number of different jobs to be performed in organizational structure, and Spatial complexity, is the number of geographical locations.

In the context of the developing countries, the concept of environmental complexity is still in the process of development, and most of the aspects of environmental complexities need to be explored further. The available literature on the subject is not sufficient to understand the dynamics and behavior of the environment of the developing countries. The major focuses of the research are on manufacturing and technological complexities e.g., Krugman and Obstfeld (1991). They concentrate upon the selection of appropriate technology for production purposes. In this context, most of the researchers interlink technological and manufacturing complexity with product complexities (Barbosa and Vaidya, 1997; Virasa and Tang, 1998). The complexities discussed in the context dependent literature, whether it is technological (Bruun and Mefford, 1996), functional (Wang and Tunzelmann, 2000); leadership (Hogue and Lord, 2007); manufacturing (Flynn and Flynn, 1999); or control system (Li et al., 2005) are mostly related with the internal organizational environment as previously conceptualized by Duncan (1972). Conversely, the major problem for the organization in the developing countries is to manage the complexities associated with its external environment. Qureshi (2007) identifies inflation, competitors’ actions, government’s role, and the other stakeholders’ action as the external factors affecting the owners’ wealth of firms. Hence, these factors act as the sources of external environmental complexity for the organization. The role of government in creating complexities and defining the competitiveness of textile sector organization in the developing countries has also been identified by Shafaei (2009). As no previous work has provided a comprehensive framework for it, we have particularly focused upon the analysis of external environmental complexities in this research.

**The case of Pakistan**: The issue of environmental complexity in Pakistan, with its relationship with organizational performance has been under discussion since the start of Afghan war in early 1980s. After the regime of President Musharaf especially in the scenario of war against terrorism, this phenomenon of environmental complexity and dynamism and its effect on organizational performance has been heavily debated in different circles. As a result of environmental complexities, the textile sector of Pakistan remained the major loss bearer during this period in terms of its exports, market share, profitability and growth (APTMA, 2008). Various policies developed during this period (for example Textile Vision, 2005) in which the targets fixed by different players (e.g., Government of Pakistan, and Textile Sector Associations) like increasing the yarn production, capturing the potential markets of Hong Kong, Japan and Middle East, and increasing the value added products, and product mix, remained unsuccessful. There are various reasons behind these failures. Some of these include unstable priorities, incorrect calculations and forecast about future requirements, poor implementations of the policies, and lack of accountability of the policy makers. Due to these negative experiences, manufacturers of textile and textile related products strongly criticized the newly developed Textile Policy (2009). In the light of these facts, the effects of the variables of external complexity on organization appear to be a major issue for the textile sector in Pakistan.

**Textile sector of Pakistan**: Pakistan is a developing country. Its economy mainly depends on agriculture. Pakistan boasts one of the largest and best irrigation systems in the world. Hence, its agricultural sector is relatively more developed than most of the other developing nations. As far as the textile sector of Pakistan is concerned, it uses locally grown cotton as a raw material for further processing. At the time of independence of the country in 1947, there were few spinning and composite units working in their individual capacity. Over the time the Government of Pakistan announced a number of incentives for textile sector which motivated the investors to install new spinning and weaving units. Therefore the textile sector has developed rapidly in the form of various industrial hubs e.g., Multan, Faisalabad, Lahore, and Karachi etc.. Currently the textile sector is considered as a back bone of Pakistan’s economy.

Textile sector of Pakistan consists of large scale organized and small scale fragmented sub-sectors in which there are approximately 80% small workshops, 15% medium engineering units and 5% large engineering units (Majeed, 2004). Large scale units are established mostly in spinning sub-sector, while small scale units
work in weaving, ginning, hosiery, towel, finishing, and garments manufacturing sub-sectors. According to Economic Survey of Pakistan 2008-09, textile sector of Pakistan is comprises of 1221 ginning units, 458 spinning units, 600 weaving units, 50 composite units and 1500 finishing units (Ministry of Finance, 2008-09).

**MATERIALS AND METHODS**

In this study, primary and sole objective is to analyze the external complexities of the organizational environment in the context of the developing countries. For this purpose we characterize the external complexity of the environment in terms of its two important dimensions: general, and international. We then identify and analyze the key factors and issues concerned with these two types of complexities.

This study is based on the secondary data, which has been collected by making use of the statistical information on textile sector provided by various governmental and non-governmental sources. Published material on the subject e.g., books, journals, newspapers, and online resources etc. have also been consulted for a balanced assessment of the issues. The study principally provides a roadmap for the analysis of environmental complexities of the Textile Sector of Pakistan. Although the complexities in organization environment of Pakistan existed since its independence, they became much more challenging with the new policies and rules of WTO; globalization of firms in the 21st Century; and more importantly the September 11 attacks on World Trade Centre in New York and the subsequent war against terrorism that significantly changed the political and economic scenario of Pakistan. Therefore, this study specifically focuses upon the analysis of challenges faced by the contemporary textile sector organization in Pakistan.

**General environment complexity:** General environment is defined as anything outside the organization (Manson, 2001). General environment according to various researchers like Harvey and Reed (1994) and Bak and Chen (1991), is constantly changing. The major reason behind these changes is the self organization of the environmental factors, which allows them to change the environmental structure. Self organization of the factors in environment creates a situation that can affect the organizational performance. As suggested by Byrne (1998), self organization of factors exists in both internal and external environment of the organization. This situation according to various researchers creates a dissipative system in the environment. Dissipative system is one that is not in equilibrium (Waldrop, 1993). This disequilibrium of dissipative system is often said to exist at the edge of chaos (Lewin, 1993; Marion, 1999). After reviewing the literature on complexity theory, we presume that there are two types of dissipative system: internal dissipative system, and external dissipative system. The dissipative system whether it is internal or external has many factors that can affect the organizational performance. In the context of self organization of environmental factors and creation of dissipative system, general environment of the textile sector in Pakistan is characterized by relatively higher interest rates, energy constraints, raw material shortage, political instability, and marginal government support. These variables compel the textile sector to establish multiple strategies and activities. But spreading attention on multiple strategies creates problems for the industry to decide its strategic direction. This situation in the general environment in which there are many variables, and several operational strategies to deal with them creates a highly complex system in the environment that negatively affects the various dynamics of the textile sector like its productivity, profitability, market share, and product mix etc.

**International environment complexity:** Pakistan is a developing country located in a geo-strategically sensitive region. Its international and global environment is characterized by international pressures to extend its war against terrorism which has adversely affected the political and economic situation of the country; negative propaganda of Western media and other agencies against Pakistan and trade barriers in different forms like quotas and anti-dumping duties levied especially on textile and textile related products.

All these variables create a difficult situation for the business organization in Pakistan. To cope with these components of complex international environment, and develop the strategies to handle these complexities is beyond the capabilities of textile sector of Pakistan.

**RESULTS AND DISCUSSION**

After reviewing the literature in earlier sections, and analyzing the environment of Pakistan, there appears to be a huge scope for further studies to develop an understanding of the environmental complexities. There is also a need for framework development to evaluate the policies required to cope with the complex variables that affect the performance of the textile sector in Pakistan. The following suggestions derived from this study could be used as helpful tools to evaluate the complex environment in Pakistan.

**Understanding the environmental context:** The context of the organizational environment in the developing
countries is very much different from that in the developed countries. To understand the environmental complexities and develop a framework for evaluating complexity, it is necessary to develop an understanding of the context in which one could try to evaluate the complexities.

**Identification of variables:** After understanding the context, the identification of the components of general and international environment is necessary to clearly depict the picture of external complexities for the textile sector. To identify these components, environmental analysis would be a helpful tool. To conduct the environmental analysis of the textile sector in Pakistan, it is necessary to understand its strategic position in Pakistan’s economy before analyzing the variables that create complex situation or dissipative system in general and international environments. Besides identification, decision about component heterogeneity is another important step for complexity evaluation as suggested by Dess and Beard (1984).

**Impact assessment:** Once the environmental variables are identified, it is necessary to find out the effects of these variables on organizational dynamics. In evaluating the environmental complexities, only those variables should be identified that have some effect (positive or negative) on organizational performance. The reason behind this approach is that the variables existing in organizational environment of the developing countries are huge in number and it is practically impossible for the organization to analyze all these variables. Therefore, for evaluating the complexities of the textile sector, only those variables should be considered that have some effect on it.

**Inter-relationship of different complexities:** This study specifically focused on the external complexities. Therefore, to understand this phenomenon holistically, it is essential to find out the relationship between complexities of general and international environment. The questions that need to be answered are: How the variables of general and international environment interact with each other? What are their effects on organization performance? And, How to develop the strategies to cope with the situation created by the interaction of the variables of general and international environment?

**CONCLUSION**

Organizational environment in Pakistan is complex in nature. A large number of variables with heterogeneity in their characteristics are its basic feature. Textile sector organization in Pakistan demands for an in-depth evaluation of the variables existing in complex environment to compete with the normal and context dependent challenges that have been discussed in the this study. This evaluation process would facilitate the textile sector not only in its environment analysis but identification of potential risks that it faces in various organizational practices.

**REFERENCES**


