International Review of Business Research Papers
Volume 6. Number 6. December 2010 Pp.246 –258

Towards Establishing Global Measures for Organizational Task Environment

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This paper suggests an alternative measure for organizational task environment along a favorable-unfavorable continuum relying on the different operationalizations developed by various scholars. The magnitude of technical knowledge and information-processing requirements are the common factors that link the various dimensions of organizational task environment. The more are the dynamism and complexity of task environment and the diversification of the organization's market, the more are the needs for knowledge and technical information-processing requirements to perform a task; the more is the unfavorability of the task environment and vice-versa. The researcher believes that this measure could be conveniently employed with the other measures of organization's contextual dimensions in an attempt to reach an agreement on structure-context alignment cross-culturally.

Field of Research: Organizational Theory

1. Introduction

Several organization theorists emphasized the importance of developing an "organization science". Pugh (1983) defined "organization theory" as "the study of the structure, function and performance of organizations and the behavior of individuals and groups within them". To develop a sound "organization theory" we need well integrated studies about the relationship between the various elements of the organization theory: structure, process, performance, individuals, and groups, and the contextual factors that influence them. However, the development of a sound "organization theory" in the full sense seems to be a miraculous task if not impossible. This may be attributed to the fact that studying individual and group behavior is an important part in the process of building the theory, and of course, the prediction of human behavior is always surrounded by uncertainty.

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Organizational structure, as one element of the "organization theory", has been the focus of several researchers' work, specifically in its relationship with the context and environment of organizations. It is axiomatic that the establishment of a sound and universal "organization theory" requires that evidences should be provided from different cultural environment and at the same time employing similar methodologies with special emphasis on using unified measures in the process of operationalizing the relevant concepts.

The research question here is to what extent we can develop a suitable measure for the organizational task environment that can be used in different cultural settings. This paper attempts to answer this question in the following sub-sections: literature review, methodology and research design, discussion of findings, and finally the conclusion.

2. Literature Review

Many researchers claimed that the organizational task environment is the major determinant of organization structure (Burn and Stalker, 1961; Lawrence and Lorsch, 1967; and Pennings, 1975). Glueck (1980) stated, "the environment includes factors outside the firm which can lead to opportunities or threats to the firm. There are many factors at work in the environment, the most important ones are economic, governmental and legal, market and competition, supplier and technological, geographic and social". Glueck defined the organizational environment in term of the general environmental factors that might influence the activities of any organization. However, several researchers emphasized discussing the "task environment" of the organization assuming that every organization is influenced by specific group of environmental factors (task environment) rather than by all the environmental factors. For example, Dill (1958) defined "task environment" in terms of those parts of the environment, which are "relevant or potentially relevant to goal setting and goal attainment". Thus, he excluded all the other environmental factors, which are not relevant or potentially relevant to goal attainment from "task environment". Dill found that the task environment of two Norwegian firms to be composed of four major factors:

(i) Customers (both distributors and users)
(ii) Supplies of materials, labour, capital, equipment and work space
(iii) Competitors for both markets and resources, and;
(iv) Regulatory groups, including governmental agencies, unions and information associations.

The "technological environment" which refers to the knowledge about technical processes and machine design existing outside the organization itself, has been considered by Katz and Kahn (1979) as an important aspect of 'task environment". Jackson and Morgan (1978) also considered the number of production lines of a firm and labour stability as important aspects of the "task environment" of an organization.

March and Simon (1958) characterized “task environment as hostile or benign. Dill (1958) characterized the “task environment as homogeneous or heterogeneous, stable or rapidly shifting, and unified or segmented. Others have characterized it as certain or uncertain, complex or simple (Lawrence and Lorsch, 1967). Thompson (1967) holds the opinion that “all organizations face task environments which are located simultaneously somewhere on the homogeneous-heterogeneous continuum and stable-shifting continuum”. Still a certain-uncertain continuum can be added to Thompson’s proposal. By uncertainty is meant the difference between information required to do or perform a task and the information already possessed. This assumes that uncertainty increases with both instability and heterogeneity. The greater the diversity of the inputs and outputs of an organization the greater the information needed for decision-making. Also, the greater the changes or dynamics in the task environmental factors the greater the information needed for decision-making (in term of quantity and quality). Mintzberg (1979) conceptualized task environment into four distinct continua: stable-dynamic, simple-complex, market diversity (integrated or diversified), and munificent-hostile. Although the hostility dimension is analogous to the instability one, yet Mintzberg categorized it distinctly because he believed that extreme hostility has special effect on structure (Mintzberg 1979).

Morgan (1988) argued, “Changes in the environment are viewed as presenting challenges to which the organization must respond”. He believed that whether adaptation, as viewed by contingency theorists, or selection, as viewed by population ecologists, is the primary factor influencing organization survival, it remains that the major problems facing modern organizations stem from changes in the environment.

Katz and Khan (1979) believed that the response of the organizations to the threats from the external environment might take place through:

(i) Changing the internal structure of the organization e.g. establish research and development department or and industrial relation department in the case of high unionization among the working employees.

(ii) Developing some activities to control the external forces, hence it creates powerful dynamics for organizational growth e.g. increasing the level of expenditure on promotion may be an indicator for turbulent and uncertain environment.

(iii) Interacting with the political sector to assure legitimacy for themselves and to protect themselves against unfavorable legislation or to gain economic advantage.

Katz and Khan (1979)’s proposal of the three strategies for responding to threats from the external environment implies that organizations have open options to respond to environmental dynamics, thus organizations operating in the same

turbulent environment might respond to that in different manners hence they may not necessary show similar organizational structures. If this assumption holds true, the level of complexity in studying structure-environment relationship will be magnified.

Hickson, etal (1969) made valuable contributions in operationalizing several contextual and structural dimensions of organizations. Woodward (1965) and Amber and Amber (1962) contributions in operationalizing the concept of technology cannot be overlooked. Kimberly (1976) published his ideas concerning the operationalization of the concept of size. Several researchers adopted the contributions of the above-mentioned scholars in replicating their studies or even conducting analogous studies. The impact of task environments upon organizational structures received the attention of several researchers (Burn and Stalker, 1961; Lawrence and lorsch, 1967; Thompson, 1967; Duncan, 1972; Osborn and Hunt, 1974; Penning, 1975; and Bourgeois et al; 1978). It worthwhile to mention that, most of those researchers who studied the relationship between task environment and structure failed to adopt unified measures for organizational task environment, over and above those measures can hardly be employed in studies using multivariate analytical tools. The effort of Dess and Beard (1984) in operationalizing the task environment dimension was an exception. Dess and Beard attempted to operationalize and measure the task environment of organizations, using the data and schema developed to record resource transactions in the national social accounts. They operationalized Aldrich's (1979) codification of environmental dimensions by constructing four or five continuous scale measures for 23 dimensions. Although Rasheed and Perscott (1992) found considerable support for the validity of the three dimensions of munificence, dynamism and complexity as proposed by Dess and Beard and In spite of the sophistication and the internal consistency of this measure, but it seems that this approach is not appropriate to be used in studies exploring the relationship between structure and the contextual dimensions including the task environment. In such studies, task environment dimension is only one variable among several ones, a situation in which the researcher would strive to narrow the domain of the study. This is in addition to the fact that Dess and Beard's measure of task environment requires massive data from different sources, which is in most cases difficult to avail in varied cultural settings.

Milliken (1987) conceptualized the organizational environment into three dimensions: state uncertainty, effect uncertainty and response uncertainty. It is obvious that Milliken conceptualization is more relevant to the general organizational environment rather than the task environment. Sharman and Dean (1991) provided a very good approach for conceptualizing and measuring environmental dimensions. Their approach may provide new theoretical insights and methodological refinement, but suffers from the same shortcomings of Dess and Beard approach. For Oliver (1997) task environment corresponds to land developer, subcontractors, suppliers and lending institutions. These concepts were measured by the extent to which the firm felt it got along with each of the

four task environment constituents; scaled 1= not at all well to 5= extremely well. However, this measure seems to be very subjective besides it considers only few dimensions of the organizational task environments. The central question of in Harris (2004)' study was whether or not the Dess and Beard (1984) construct would exhibit both convergent and discrimanant validity in a large independent samples using Dess and Beard measures to the task environment. The organizational task environment construct in Harris' study demonstrated convergent validity, but it did not exhibit discrimanant. It seems that Dess and Beard is the most popular approach for conceptualizing and measuring the organizational task environment, but unfortunately it will not present an optimal approach in fulfilling the objective of this study.

3. Methodology and Research Design

This paper is a theoretical one attempting to establish global measures of organizational task environment to be employed conveniently in different cultural environment of different levels of societal industrialization. This means that empirical evidences on structure-context alignment should be provided from different countries, including the Western ones, in an attempt to lay the foundation for establishing, either a "universal" or "culture bounded" relationship between organizational structure and contextual dimensions. In order to achieve this objective, the paper explored the relevant literature in organization theory and its different conceptualization of organizational task environment. The different conceptualizations have been synthesized and translated into a measure that contains 15 elements combining between objective and subjective ones. Attempts are made to operationalize those concepts, bearing in mind that excessive simplification might jeopardize this discourse. Some sort of reconciliation should be achieved between simplicity and accuracy. Furthermore, the measures were designed in a format along a faviorable-unfaviorable continuum that enables researchers to employ more sophisticated tools and models in their analysis.

One limitation of this paper is that the proposed measures are more appropriate to manufacturing organizations than to the other typologies; however, incorporating one type of organizations in any study is believed to help in better understanding the relationship between structure and context in organizations.

4. Discussion and findings

This section attempts to operationalize the various conceptualizations discussed above. The following factors have been categorized as elements of organizational task environment; customers, suppliers, competitors, regulatory groups, technological change, number of product lines, and labour stability. All these elements were employed to operationalize the spotted dimensions of task environment.

The stability of the organizational task environment is viewed relatively to the stability of the general environment; socio-economic, political, and cultural environment. Hence, we are not interested in the latter because all the organizations under questions will be influenced by the general environment evenly. An organizational task environment can range from stable to dynamic one. Suppliers are one of the most important elements that influence the stability of the task environment. The scarcity of raw materials, labour, capital, and spare parts is a major source of dynamism to organizational task environment whereas the easy access to such sub-elements constitutes an advantage or stability in the task environment. The regulatory groups, such as government and trade chambers have their influence on the task environment. The government impact might be positive or negative, if the government is providing any protection or concessions to any business sector this might help in stabilizing the task environment. Sometimes, the government might act as a destabilizing factor also through the issuance of frequent regulatory acts. If some firms in an industry are operating under the umbrella of a specific trade or employers association this might help in stabilizing the task environment. The rapid technological change in some industries represents real threat to those firms, which are not in a position to cope, so the higher the rate of change of the technology in a specific industry, the greater the dynamics of the task environment of the firms in that industry. The degree of unionization of the labour force of an organization is additional source instability. Organizations with high-unionized labour are believed to experience more volatile task environment and vice-versa.

Although Mintzberg (1979) has made a conceptual distinction between the hostility and dynamics of task environment, yet we took them as analogous for operational purposes. With regard to competition as an element of task environment, the market structure comes into the scene. At one extreme, the task structure of a firm is said to be stable when the firm is the only producer in the industry. At the other extreme, the task environment is said to be dynamic if the firm is operating among a large number of producers in the industry.

The organizational task environment can range from simple to complex one. The complexity of the task environment is highly associated with the degree of technical knowledge required for performance. The knowledge about products, technical processes, channels of distributions, and customers are examples. The multiplicity of the product lines of the organization could be a source of complexity. That is to say the greater the number of the product lines, the greater the knowledge required to do the business. Not only the number of product lines that matters, but also the nature of the products. If the organization is producing a single product, this will contribute positively to the simplicity of the task environment. However, the task environment gets more complex if the organization moves along the continuum, from producing a single product, dominant product, to several related products and several unrelated products (Mintzberg 1979). Whether the product is standardized or differentiated really matters. The length of the channels of distributions adopted by the firm also

matters, the longer the channels used, the greater the need for more processed information about the firm' clients.

The industry heterogeneity is associated with increased information–processing needs for organizations (Jarley, Fiorito, and Delaney, 1997). Greater need for processing information may be attributed to the geographical dispersion of the organization's operations. Thus, the greater the number of the organization's sites of operations, the greater is the complexity of the task environment of the organization.

The markets of the organization may range from concentrated to diversified ones. The organization might sell its products to few market segments (concentrated) or might sell to a large number of market segments (diversified). Whether the market of the organization is concentrated or diversifies influences the level of technical information required to implement the marketing strategy of the concern organization. Again here, this dimension is similar the simple-complex one, because the level of information needed to perform is the common factor.

The reader might raise a question, why a certain-uncertain dimension of task environment is not added here? If we agree on the concept that uncertainty is the difference between the levels of information required to perform a task and the levels of information have already been possessed by the organization. This dimension may be incorporated into the above-mentioned three dimensions. Thus, the level of knowledge or technical information needed to perform a task is the common factor between the three dimensions of task environments. For the stable-dynamic dimension, the more dynamic the task environment is, the more knowledge and technical information are required to predict the task environment and vice-versa. For the simple-complex dimension, the more complex the task environment is, the more knowledge and technical information are required to comprehend the task to be done and vice-versa. For concentrated-diversified market dimension, the higher is the level of market diversification, the more is the knowledge and technical information required to implement the marketing strategy of the organization and vice-versa.

Instead of describing the task environment of organizations as stable or dynamic, simple or complex, and with concentrated or diversified markets we could develop only one dimension to describe that task environment. This could be easily done since we managed to locate a common link between the three dimensions. This link is the level of knowledge and technical information-processing requirements. We suggest using the term favourable and unfavourable task environment. The more is the knowledge and technical information needed to perform a task, the greater is the unfavourabilty of the task environment. In other words, the more complex, dynamic, and market-diversified the task environment, the more unfavourable the task environment will be and vice-versa. The emergency room in a hospital is a typical example of a sub-unit

operating in a very unfavourable task environment, where high levels of collaboration between multidisciplinary and expert personnel is a prerequisite for efficiency in handling the unexpected pattern of flow of patients.

So far we have singled out several elements that shape the task environment of organizations; still other elements can be added. Albeit that Likert (1967) developed his scale to construct attitudinal measures, yet it could be used here to construct global measures by presenting each of the elements of task environment with corresponding five situations for that element. The selection of the appropriate option that best describe the situation, the respondent should rely on factual information rather than his attitude. The secondary data should be the reference for answering the questions adding to that the respondent(s) should be one of the top management team of the concerned organizations (see appendix 1). The researcher does not claim that all the measures that have been developed in this paper are absolutely global; an element of subjectivity always remains in such type of work.

5. Conclusions

The essence of relationship between organizational structure and its contextual dimension, including task environment, has been a subject of much debate during the last few decades. Organization theorists failed to arrive at a consensus about the exact impact of different environmental situations on the structure of organizations. The disagreement among researchers may be attributed to several factors among which are the adoption of different methodologies and measures. This paper attempted to contribute in establishing global measures of organizational task environment. Other researchers are expected to provide incremental effort to arrive at globally accepted measures. Those measures, if taken together with other operationalizations of contextual factors, may aid in arriving at a well-established relationship between organizational structure and context. Appendix (1) shows the outcome of the paper. Objectivity and convenience are the major characteristics of those measures. The measures can be employed in diverse cultural settings of different levels of societal industrialization. Unless cross-cultural research is encouraged no remarkable development will be realized in establishing a sound “organization theory”.

Graves and Hesseling (1973)’s invitation to establish a center for cross-cultural studies should receive more attention, albeit that it has been launched four decades ago.

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Appendix (1)
Proposed Measures of Organizational Task Environment

Scoring: a=1, b=2, c=3, d=4, e=5
(High scores = relatively unfavorable environment, low scores = relatively favorable environment)

(1) Supply of raw materials
- a) Staple supply
- b) Almost staple supply
- c) Moderately stable supply
- d) Almost unstable supply
- e) Unstable supply

(2) Supply of spare parts and equipment
- a) Stable supply
- b) Almost stable supply
- c) Moderately stable supply
- d) Almost unstable supply
- e) Unstable supply

(3) Supply of workforce
- a) Stable supply
- b) Almost stable supply
- c) Moderately stable supply
- d) Almost unstable supply
- e) Unstable supply

(4) Supply of capital
- a) Stable supply
- b) Almost stable supply
- c) Moderately stable supply
- d) Almost unstable supply
- e) Unstable supply

(5) Labour turnover
- a) Low rate of turnover
- b) Almost low rate of turnover
- c) Moderate rate of turnover
- d) Almost high rate of turnover
- e) High rate of turnover

(6) The trade association under which umbrella the firm operates

a) Active trade association
b) Almost active trade association
c) Moderately active trade association
d) Almost inactive trade association
e) Inactive or non-existing trade association

(7) Degree of unionization

a) Docile labour activities
b) Almost docile labour activities
c) Moderately docile labour activities
d) Almost hostile labour activities
e) Hostile labour activities

(8) The rate of technological change in the industry

a) Low rate of technological change
b) Almost low rate of technological change
c) Moderate rate of technological change
d) Almost high rate of technological change
e) High rate of technological change

(9) The competitiveness of the firm

a) The firm is the only producer in the industry
b) The firm is the dominant producer
c) The firm is the one among small number of producers
d) There is almost a large number of producers in the industry
e) There is a large number of producers in the industry

(10) The of production lines available for the firm

a) There is one production line
b) There are two production lines
c) There are three production lines
d) There are four production lines
e) There are more than four production lines

(11) The nature of the product(s)

a) Single product
b) Single dominant product
c) Two related products
d) Two unrelated products
e) More than two unrelated products

(12) The customers of the firm
a) Deals with the large public
b) Deals with a large number of segment
c) Deals with a small number of segments
d) Deals with almost selected clients
e) Deals with one client only

(13) The number of the organization's operating sites
a) One site
b) Two sites
c) Three sites
d) Four sites
e) More than four sites

(14) The length of the channels of distribution adopted

a) Producer-consumer
b) Producer-retailer-consumer
c) Producer-whole seller-retailer-consumer
d) Producer-agent-whole seller-retailer-consumer
e) More lengthy channel

(15) The stability of the government policies and regulations in the concerned industry
a) Stable policies and regulations
b) Almost stable policies and regulation
c) Moderately stable policies and regulation
d) Almost unstable policies and regulations
e) Unstable policies and regulations