# Identifying the Dimensions and Sustainable Supply Chain Operations for Knowledge-Based Decision Making in Iran's Tax Affairs Organization

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***Abstract*—This research was conducted by the aim of Identifying the dimensions and sustainable supply chain operations for knowledge-based decision making in the Iran tax affairs organization. From the point of purpose, this study is a fundamental research which is implemented by qualitative research. There is two main part in this study: the first one is about the background and theoretical basics which is related to the dimensions and components of knowledge-based decision making; the second part is a qualitative research that is implemented in a grounded theory methodology. This research's population concludes experts of tax affairs organization in Iran. That experts has been chosen which have required qualifications and information by the use of purposive sampling method. The process of choosing these experts has continued until reaching the theoretical saturation which ended in 50 interviews. Open, axial and selective coding have been conducted respectively for analyzing the gathered data from interviews. The triangulation and control methods have implemented for confirmation and enhancement of the reliability of findings and interview transcripts. Based on a partial least squares approach, the confirmatory factor analysis method has also conducted for the estimate of indices. Respectively, the confirmatory factor analysis, Path analysis, and Bootstrapping have done in the frame of this approach. Findings of this study show that components of knowledge-based decision making are: 1- performance factor, 2- behavioral factor and 3- attitude factor.**

***Keywords*—*Components of decision making, knowledge-based decision making, tax affairs sustainable supply chain operations.***

## 1. Introduction

Knowledge is the key to the competitiveness of today's organizations [6]. New organizations are knowledge-based that mean they should be designed in such a way that they can recognize, store, and apply this knowledge in the case of need. These organizations should know their knowledge needs, and use new information and knowledge in an efficient way [10]. All of these factors have created a new paradigm in management, which is referred to knowledge management [8]. Nowadays, Knowledge is a major driving force for organizational change and wealth creation. Effective knowledge management is a crucial source of enhancing competitive advantage and also a key to the success of modern organizations [2].

Providing resources requires organizations to invest and spend large amounts of money on it. Therefore, organizations need an efficient exploitation of the available sets of resources for their processes and activities. An efficient exploit of resources refers to the ability to effectively use of diversified resources that plays an important role in the success of an organization [1]. In the past researches, there were different approaches, frameworks, and models that developed to evaluate and improve the exploitation

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and utilization of resources in organizations. Several studies focused on the presentation, development, and use of mathematical models in this field [3]. For example, Vaughan, Faghri & Li provided a mathematical model for finding the best way to reallocate resources to enhance resource utilization [9]. Beleska-Spasova, Glaister & Stride provided a model for evaluating the effects of resource packages on organizational performance [4]. The findings of this research showed that knowledge-based, technological and managerial resources had a positive impact on performance, while physical and relational resources had not positive effects.

The vast advances in information and communication technology in all aspects have made today's managers a rich access to valuable and inalienable information that should be cleared and processed as commercial data for management systems of the organization [5]. Eventually, this processed information turns into a number of "knowledge-based" concepts that play an effective role in decision making and decision taking by managers. Because of this role and since the late 20th century onwards, the managerial terms such as the knowledge-based economy, knowledge-based society, knowledge-based development are made and used. Hence, we can say that today, the role of knowledge management and information management systems, especially executive support systems, is proven in the success of organizations [6].

Knowledge Management (KM) in the process of Knowing and understanding Knowledge As a new source for gaining organizational competitiveness, proposes a path for managing and implementing knowledge to enhance organizational performance [8]. Many researchers in this area focus on determining the process of storage and decision-taking and its relation to knowledge in an organizational behavior [10]. Relative to the process-making for transaction management in knowledge management, the application of knowledge in decision making has a huge impact on organizational performance [7].

In the field of management, Knowledge-based decision-making is a decision-making process that includes an agreed index that is used to measure and ensure that the most appropriate outcome can be generated from a specific matter. This process is considered as an instruction for effective and strategic decision-making and a process of spectaculation (Zhao et al., 2017)

Hence, according to the above discussions, this research will answer the following questions: First, what are the dimensions and components of knowledge-based decision making in the Tax Affairs Organization of Iran? Second, what are the characteristics of designed pattern about the dimensions and components of knowledge-based decision making?

## 2. Sustainable Supply Chain Operations

In the term of implementation, the nature of this study is qualitative and in data collection method is descriptive. Also, in the process of identifying the bases and realities, it explores the opinions of experts and members of the research population. This study was conducted in two parts. The first one examines the background and theoretical basics which related to dimensions and components of knowledge-based decision making and organizational effectiveness. In the second part of the study, the grounded theory approach is used.

The process of collecting data is initiated in a targeted and organized way, by choosing basic theory as a research approach. So, the data collection activities were initiated by conducting semi-structured interviews with specialists and experts of the Tax Affairs Organization in Iran. The main questions that suggested in these interviews are: What do you think about the dimensions and components of knowledge-based decision making in Iran's Tax Affairs Organization? What are the dimensions of organizational effectiveness? And how can the model be presented with these dimensions?

Interviews with other members of the statistical sample continued and during the interviews, the conversations were recorded and the sentences related to the research were pulled out. In other words, the task of analyzing the information was parallel to the act of interviews. Open, axial and selective coding methods were used to analyze the data.

As heightening the number of interviews, it seemed that no further information is available to the researcher, and the participants were repeating the previous conversations. So in this point of research, theoretical saturation has reached, which indicates the end point of the data gathering process. At this point of the research, the extraction of concepts and their classification was almost completed. The statistical population of the research in the qualitative section of it includes experts of Tax Affairs Organization the extraction of concepts and their classification. managers and specialists who had the required information for research were selected by using targeted sampling method, to reach the theoretical saturation level, which eventually resulted in 50 interviews. The Triangulation and control methods were used to verifying and enhancing the validity of this study and confirming the transcripts of the interviews as well as the interviewees. The Rich, Thick, description method is used to ensure that each category of study has the same meaning for the researcher and respondents. Another method that is used was to take notes during interviews for ensuring that the information collected from the respondents is accurate narrow. The collaborative methods between researchers and interviewees are the other strategy for evaluating the validity which is proposed by Merriam (1998). In this study, a collaborative approach has been used in the form of interviews and interactions between the researcher and the managers. Finally, the review method and also the re-examination of the information were used by the research colleagues (who were the mentor and consultant).

## 3. Results

In the next step and after the interviews, sentences and concepts which were related to the research were extracted. The result of this step was to examine the components of the country-level knowledge-based decision-making process which reached to 35 concepts that were set in the form of tables. In the grounded theory, this phase of data analysis is referred to open coding in the. After reviewing the extracted concepts from the tables and removing the similar items, the final result was like table 1 that includes 24 concepts.

**Table 1.** Categories and subcategories derived from concept analysis (axial coding): Knowledge-based decision making

| category | Sub-category | Item |
|---|---|---|
| Performance factor | involvement of majority | Different opinions are respected in the organization,.<br>All employees are involved in important organization decision makings.<br>The ideas of employees are being implemented. |
| | Spectaculation and analysing | Organizational decision-makers are familiar with the methods and steps of rational thinking.<br>Organizational decisions are based on rational thinking.<br>Organizational decision-makers have the ability to understand and analyze the organization's circumstances. |
| | Decision making | The decisions which made in organization are logical and rational.<br>Organizational decisions are made on the basis of social characteristics.<br>Cultural factors are involved in the decisions of the organization.<br>Decisions depend on the personality and behavioral characteristics of managers. |

| | | |
|---|---|---|
| Behavioral factor | Professional knowledge | The organization respects the professional knowledge of the employees.<br>The decisions of the organization are taken by experts. |
| | Knowing the problem | Organizational decision-makers are fully aware of organizational issues.<br>The decision makers of the organization know all kinds of problem-solving methods.<br>Decision makers are familiar with the process of solving problems. |
| Attitude factor | Work and innovation culture | Managers and employees of the organization are working hard to make the organization more successful.<br>Innovation in the organization is welcomed in all areas and topics.<br>Various scientific and technological innovations are exploited in the organization. |
| | Future orientation | The organization has a long-term plan to achieve its goals and purposes.<br>The organization continuously provides conditions and requirements for achieving goals.<br>The organization moves along toward path and goals. |
| | Organizational culture | Objectives, visions and missions of the organization are clear and straight.<br>The organization has a logical and scientific structure<br>Employees have believe in the laws and regulations of the organization. |

As it resulted from axial coding tables, three main broad categories of knowledge-based decision making have been identified: 1) performance factor, 2) behavioral factor, and 3) attitude factor. Each of these broad categories includes sub-categories. The general diagrams and details of knowledge-based decision making are presented (Figure 1) by combining these categories and sub-categories and also adding marks to them. In some way, we can call this figure as selective coding in the grounded theory approach; because they are a kind of framework for knowledge-based decision making. In future sections of the study, the significance and contribution of each factor in knowledge-based decision making will be measured.

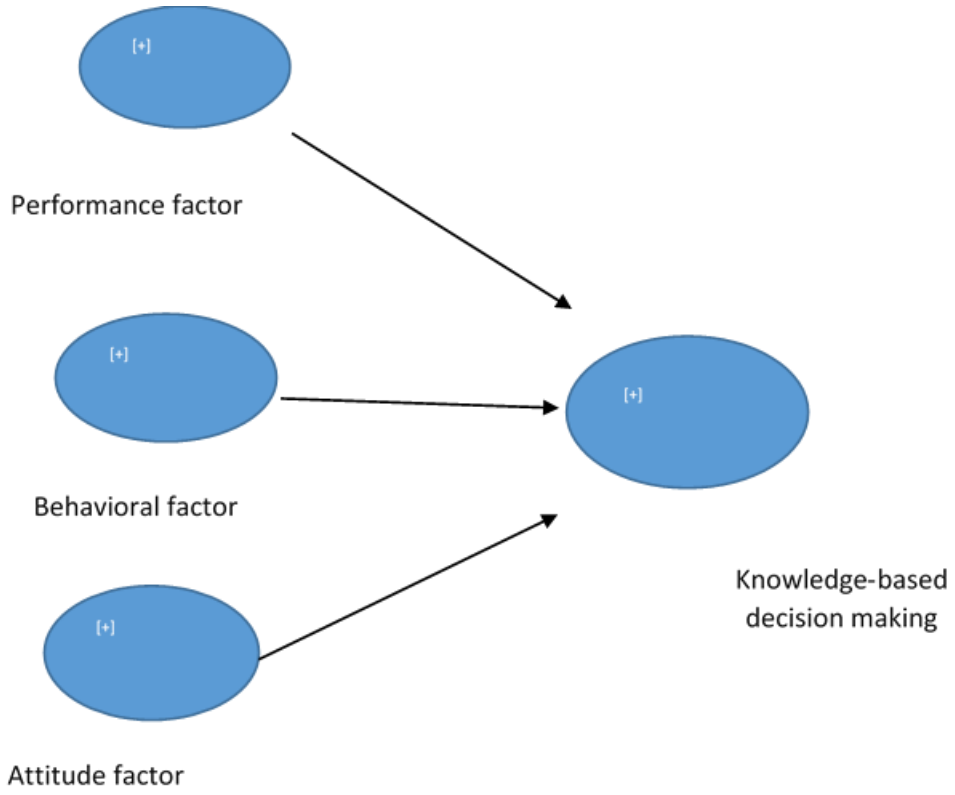


**Figure 1.** A framework for Knowledge-based decision-making

Effect of performance, behavioral and attitude factors on knowledge-based decision making

The partial least squares approach was used to investigate the importance and effect of performance, behavioral and attitude factor. Based on this approach, the measurement and also structural model is evaluated for assessing the reliability and validity of the research variables. Convergent validity and discriminant validity are used to evaluate the external model. The internal model (structural model) is evaluated for assessing the relationships between endogenous and exogenous structures. Finally, the bootstrapping technique and t-value are used to determine the significant effects.

### 3.1 Evaluating convergent validity and discriminant validity

To assess the measurement model and confirm the validity and reliability of the reflective model were designed in Smart-PLS software. In this model, the effect of performance, behavioral and attitude factors on knowledge-based decision making was evaluated.

The partial least squares algorithm was performed to estimate the indices of this stage. After the implementation of the model, the results for convergent validity which includes the combined validity, AVE and factor load of the structures, were compared and investigated (Fig. 2).

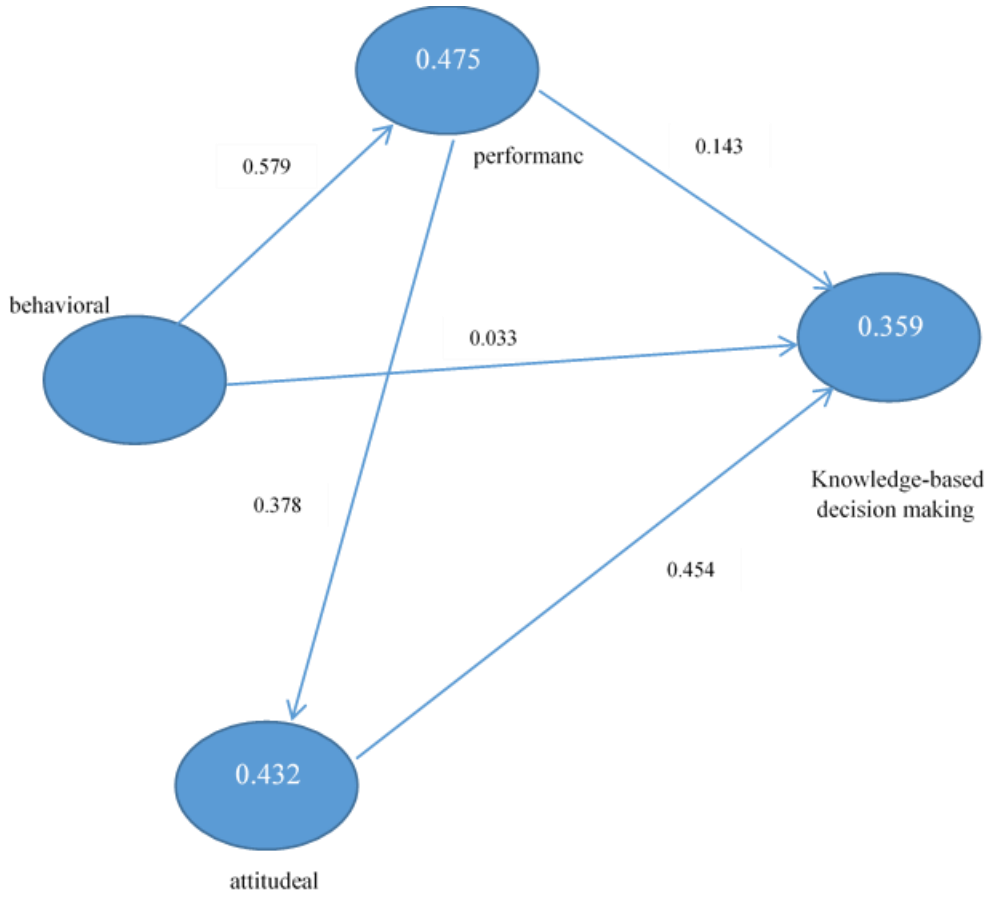


**Figure 2.** Factor loads and path coefficients in the knowledge-based decision making the reflective model

The results of the structures in the model showed acceptable values of the parameters (Table 2). In such a way that the factor loads are higher than 0.5, the AVE values are higher than 0.5, and the combined values are more than 0.7. According to the beliefs of researchers, if the values of the parameters are acceptable, then the structures will have an appropriate convergent validity.

**Table 2.** The number for parameters for estimating the validity of knowledge-based decision-making structures

| **variable** | | Factor loading | ave | cr |
|---|---|---|---|---|
| Knowledge-based decision making | performance | 0.902 | 0.710 | 0.960 |
| | | 0.861 | | |
| | | 0.860 | | |
| | | 0.643 | | |
| | | 0.849 | | |
| | | 0.848 | | |
| | | 0.881 | | |

| | | | | |
|---|---|---|---|---|
| | | 0.722 | | |
| | | 0.811 | | |
| | | 0.782 | | |
| | Behavioral | 0.936 | 0.851 | 0.919 |
| | | 0.791 | | |
| | | 0.823 | | |
| | | 0.718 | | |
| | | 0.762 | | |
| | attitude | 0.622 | 0.536 | 0.848 |
| | | 0.619 | | |
| | | 0.672 | | |
| | | 0.863 | | |
| | | 0.821 | | |
| | | 0.759 | | |
| | | 0.823 | | |
| | | 0.677 | | |
| | | 0.723 | | |
| | Knowledge-based decision making | 0.657 | 0.500 | 0.922 |
| | | 0.721 | | |
| | | 0.698 | | |
| | | 0.751 | | |
| | | 0.818 | | |
| | | 0.735 | | |
| | | 0.774 | | |
| | | 0.690 | | |

After confirming the convergent validity, it is time to examine the structural discriminant validity values. Discriminant validity was evaluated through the evaluation of the correlation matrix which presented after the implementation of the model. The values on the matrix represent the root squared of the AVE, and the other values indicate the degree of correlation between the structures. According to Table 3, where the correlation values are all smaller than the root

squared of the AVE, the discriminant validity of the structures is verified.

**Table 3.** discriminant validity of knowledge-based decision making structures

| variable | Performance | Behavioral | Attitude | Knowledge-based decision making |
|---|---|---|---|---|
| **Performance** | **0.847** | | | |
| **Behavioral** | 0.664 | **0.931** | | |
| **Attitude** | 0.387 | 0.462 | **0.748** | |
| **Knowledge-based decision making** | 0.442 | 0.419 | 0.553 | **0.792** |

## 3.2 Evaluation of the Effects between Knowledge-Based Decision Making Structures

The effects were evaluated by comparing the values of determination coefficients (multiple correlations squared R2) and path coefficients (β). Knowledge-based decision-making structures explain about 42% of the variance of knowledge-based decision making, which is at a low level (Wong 2013). In this regard, the attitude factor has the most impact and role. But for the purpose of exploring the path coefficients, the Bootstrapping technique was used and the results are presented in Table 4.

**Table 4.** path coefficients and t-values for financial health

| hypothesis | Standard error | t-value | Sig |
|---|---|---|---|
| **Attitude- performance** | 0.157 | 2.815 | 0.005 |
| **Knowledge-based decision making- performance** | 0.265 | 0.579 | 0.550 |
| **Performance-behavioral** | 0.118 | 5.583 | 0.000 |
| **Knowledge-based decision making- behavioral** | 0.278 | 0.045 | 0.962 |
| **Knowledge-based decision making- attitude** | 0.241 | 1.761 | 0.051 |

As derived from Table 4, only the attitude factor have a significant effect on the knowledge-based decision making of the three indexes. On the other hand, the performance factor has a significant effect on the attitude factor, which can have a direct impact on knowledge-based decision making. Meanwhile, behavioral factors have a significant effect on functional factors.

## 4. Discussion and conclusion

The present study aimed to investigate the dimensions and sustainable supply chain operations of knowledge-based decision making. In order to identify and determine the dimensions and components of knowledge-based decision making, a grounded theory approach was used. Communication with knowledge-based decision making involves a performance factor (consists of majority participation, thinking and analysis, decision making), behavioral factor (consists of professional knowledge, knowing the problem), attitude factor (consists of work culture and innovation, future orientation, and organizational culture).

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