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Identifying the dimensions of the knowledge management model based on the Asian Productivity Organization model in the Fars Province Water and Wastewater Company

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Abstract

The aim of the present study is to identify the dimensions of the knowledge management model based on the Asian Productivity Organization Model in Fars Province Water and Wastewater Company with a thematic analysis approach. This study has a mixed approach that is developmental-applied in terms of purpose and survey in terms of nature and method. The data collection method in this study was a combination of library and field studies, and the data collection tools were referring to documents, interviews with experts, and a questionnaire, the validity and reliability of which were confirmed with a high percentage. The statistical population of this study included 17 university professors, experts in the field of knowledge management, and senior managers of the Water and Wastewater Company, who were selected through purposive sampling; in this qualitative study, NVIVO version 11 software was used to extract and analyze the codes related to the interviews with experts, and SPSS version 26 software was used in the quantitative part. The results of open coding of the collected qualitative data led to the extraction of 92 initial codes, 30 basic themes, and 10 organizing themes: knowledge-based leadership of the organization, knowledge-based human resources of the organization, expansion and promotion of knowledge culture, leadership of the organization's knowledge infrastructure, developmental orientation to knowledge processes, organization of new knowledge, belief in innovation in the organization, capacity building in the organization, improvement of efficiency and productivity in the organization, and improvement of the organization's quality; of which 79 codes related to the knowledge management model based on the Asian Productivity Organization Model in the Fars Province Water and Wastewater Company were approved by experts in the fuzzy Delphi process.

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Extended Abstract

Introduction

Postponing the implementation of knowledge management in the structural area causes a loss of national capital and increases costs in various sectors. Since documentation plays a significant role in knowledge management in carrying out operations, it can prevent the waste of national capital in this important and influential area in the country, and this makes the successful implementation of knowledge management in company activities essential (Damavandi & Khajouei, 2024). The latest effort to establish the knowledge management process in the country's executive agencies is the notification of the Knowledge Management Regulation of Executive Agencies by the Administrative and Employment Organization of the country, which has obliged all executive agencies to establish a knowledge management system in the shortest possible time. The Knowledge Management Regulations and Guidelines in the country's executive agencies emphasize that every person has a set of experiences, knowledge, and intelligence in the field of their job that may not be recorded anywhere and remain hidden, and this guideline has been prepared to access such knowledge and experiences. According to this guideline, knowledge is a set of learnings and experiences acquired objectively and implicitly related to work, such as ideas and creativity, skills, knowledge documentation, problem-solving methods, content of specialized and expert meetings, and project criticism, whose management should be emphasized (Garai, 2022). Due to the many benefits of implementing and implementing knowledge management in recent years, many organizations have invested in and been successful in the field of knowledge development at different levels, so that the implementation of this management system has had a great impact on the performance of these organizations (Kianto et al., 2019). This is while many organizations have also failed in this field. Therefore, the lack of proper mechanisms for evaluating and implementing knowledge management has turned this type of investment into an additional cost in the minds of managers; therefore, it is necessary for organizations to have a proper foundation before any action in the field of implementing knowledge management, to know their knowledge needs, and to use appropriate methods to meet these needs (Hu et al., 2024). For this purpose, organizations have turned to using maturity assessment models. These models are used as a basis for evaluation and comparison with the state of improvement and with the aim of adopting a conscious approach to increasing the capabilities of certain areas in the organization, which has its own characteristics based on the basic assumptions of its developers (Paliwal et al., 2024.(

For this reason, the main problem of the present study is the lack of research based on the design of a knowledge management validation model based on the Asian Productivity Organization (APO) model. The issue of the need to pay attention to knowledge management in Iran has also been considered a national priority in upstream documents and development plans of the country. This is while in upstream documents, including the strategic document of the Ministry of Energy, approved in May 2013, having knowledge-based management, efficient human resources, a comprehensive and effective structure, rich software and hardware capacities of self-reliance, acts in such a way that the country is recognized as a leader in the world in supply and demand management and equitable access for all to reliable and stable electricity, safe and sufficient water commensurate with national capacities, and sanitation services. In recent years, knowledge management has been the focus of attention of the country's Water and Wastewater Engineering Company as a strategic issue. Accordingly, steps have been taken to document the experiences of experts and to place knowledge management on the list of research priorities of this company. In this regard, Fars Province Water and Wastewater Company, as one of the subsidiaries of the Ministry of Energy, should move towards knowledge management maturity in the path of realizing the announced

strategies. Accordingly, the question that this research seeks to answer is: What are the dimensions of the knowledge management model based on the Asian Productivity Organization model in Fars Province Water and Wastewater Company with a content analysis approach?

Methodology

Given that the aim of the present study is to identify the dimensions of the knowledge management model based on the Asian Productivity Organization Model in Fars Province Water and Wastewater Company with a thematic analysis approach; the research method is fundamental-applied in terms of purpose and mixed (quantitative and qualitative) in terms of data collection method, cross-sectional in terms of data collection time, and survey in terms of the nature of the research. In this study, in order to explain the dimensions of the knowledge management model based on the Asian Productivity Organization Model in Fars Province Water and Wastewater Company with a thematic analysis approach, first the codes and themes of the research variables were identified through library studies (referring to written documents such as books, magazines, etc.) and interviews with experts. Then, in order to finalize the list of dimensions and components, a survey method of experts using the fuzzy Delphi method was used.

The statistical population of the study included university professors, experts in the field of knowledge management, and senior managers of the Water and Wastewater Company; who had the information required for the study. The work experience of the experts in the field of knowledge management, the presence of experts from senior management positions in water and wastewater companies, theoretical mastery, practical experience, willingness and ability to participate in research, having at least 15 years of work experience to participate in the research interview, and the presence of university experts with relevant academic education compared to professional experts are the main characteristics of the research experts. The sample size of the research consists of 17 people and they were selected using the purposive sampling method. The measurement tools in this study were library studies, interviews, and questionnaires. The interviews were semi-structured, that is, according to the personality and behavioral requirements and the interview time, which in this study is between 30 and 60 minutes. In this study, a total of 17 experts were interviewed. From the thirteenth interview onwards, repetition was observed in the information received. This means that the research sampling reached saturation in the fourteenth interview, but for reliability, interviews continued with three other experts.

Discussion and Results

The results showed that the extracted concepts related to the knowledge management model based on the Asian Productivity Organization model in Fars Province Water and Wastewater Company included 92 primary codes, 30 basic themes, and 10 organizing themes.

Considering the views presented in the first stage and comparing it with the results of the second stage, if the difference between the definite fuzzy mean in the two stages is less than (0.1), it means that the experts have reached a consensus on the primary code in question. The results show that the experts have reached a consensus on 79 themes. On the other hand, if the average of each theme in the second stage of the survey is less than the threshold (0.7), the theme in question should be removed. In the studies conducted, the average of the five themes in the second stage, numbers 3, 8, 17, 21, and 32, was less than (0.7); therefore, the aforementioned themes were removed from the study process. Also, the results of Table 5 show that the expert group members did not reach a consensus on topics 38, 44, 51, 59, 70, 81, 85, and 90, and the level of disagreement in the first and second stages was greater than

the threshold (0.1); therefore, the survey on the above topics that did not reach a conclusion in the second stage will continue in the third stage.

Conclusion

The Asian Productivity Organization's Knowledge Management Assessment Tool is a systematic way to identify areas where an organization should focus its knowledge management initiatives, and its results can provide a good understanding of the level of readiness of organizations at the knowledge management levels. Organizations should gradually move towards higher levels in a systematic plan, namely, comprehensive development and implementation of knowledge management, continuous refinement and evaluation of knowledge management programs, and maturity and mainstreaming of knowledge management, and form a systems thinking in the company. Systems thinking gives managers a new perspective and causes the needs and connections between organizational units to increase. This makes intra-organizational problems easier to solve, and employee responsibility and commitment also increase. Also, having a systems perspective and an open learning space in organizations improves trust and responsibility among the organization's people, and this responsibility itself can lead to increased and improved performance.