Journal of
New Approaches in Management and Marketing

https://www.jnamm.ir

Volume 4, Issue 1, Spring 2025, Pages 310 to 331

eISSN: 2981-1554

Original Article (Qualitative)

Network Analysis Process (DANP) Sustainable Development Model Based on Quantum Management Approach

Fatemeh Hadavandi[1], Asadollah Mehrara[1], Seyedeh Shayesteh Varedi[2]

1- Department of Management, Qaemshahr Branch, Islamic Azad University, Qaemshahr, Iran
2- Department of Economics, Ghaemshahr Branch, Islamic Azad University, Ghaemshahr, Iran

Receive:
25 January 2025
Revise:
16 March 2025
Accept:
17 May 2025

Keywords:
Sustainable urban development, Quantum management approach, Urban infrastructure development, Economic infrastructure development, Improving environmental quality

Abstract

The purpose of the present study is the Network Analysis Process (DANP) Sustainable Development Model Based on Quantum Management Approach. The research method is applicable-developmental in terms of its purpose, descriptive in terms of data collection, and quantitative in terms of implementation method. The statistical population of the study includes 10 municipal managers with at least 20 years of experience and their field of specialization is urban management, selected through purposive sampling. To collect data for the DEMETL section and the network analysis process for prioritizing variables, a standardized AHP paired comparison questionnaire was used and distributed to the statistical population of the study and, after completion, collected and analyzed. The DENP method (a combination of DEMETL and the Analytic Network Process (ANP)) was used to prioritize the effective factors. The results showed that urban infrastructure development, self-organization, urban governance and legislation, quantum knowledge, improving the quality of life, economic infrastructure development, social justice and participation, and improving environmental quality are in the first to eighth priority, respectively.

Please cite this article as (APA): Hadavandi, F., Mehrara, A. and Varedi, S. S. (2025). Network Analysis Process (DANP) Sustainable Development Model Based on Quantum Management Approach. *Journal of New Approaches in Management and Marketing*, *4*(1), 310-331.

https://doi.org/10.22034/jnamm.2025.383336.1004

Publisher: Research Center of Resource Management Studies and Knowledge-Based Business

Corresponding Author: Asadollah Mehrara | **Email:** 6279493849@iau.ac.ir

Journal of
New Approaches in Management and Marketing
Volume 4, Issue 1, Spring 2025, Pages 310 to 331
https://www.jnamm.ir

Extended Abstract

Introduction

The success of today's organizations depends on correct and efficient leadership that relies on influencing, guiding, directing, and streamlining the organization's activities, and the beliefs and convictions of employees. Quantum management, influenced by the quantum paradigm, has unique features that can meet the needs of leaders and organizations, especially government organizations, in today's ambiguous, uncertain, and rapidly changing conditions in order to achieve goals and organizational excellence (Madahiyan et al, 2021). The quantum perspective views the world as complex, living, highly interconnected, dynamic, describes as self-constructive and unpredictable, so that in this perspective, organizations must have a learning structure. Quantum management is a practice that, by creating human capacity, focuses more on the free and continuous interaction between the leader and employees, as well as the mutual influence of the internal dynamics of the organization with employees and vice versa; and by emphasizing the organization, it guides it towards a desirable future (Norouzzdeh et al., 2020). Following the development of cities, the speed of physical changes in the city, and the changing needs of citizens in various social and economic fields, comprehensive urban plans based on the principles of past years cannot meet the needs of cities; for this reason, such plans have been obsolete for decades and are not applicable, so their characteristics do not lead to improving the quality of living space in today's era (Ghadiri et al., 2021). The field of many urban researches is sustainable development, and the ideal attitude of urban planners and designers in designing sustainable cities is mainly on better living and reducing environmental crises (Bikdeli et al., 2018). Therefore, quantum management, which is a new management in line with the needs of the people and in harmony with the era of electronics and knowledge-based networks, can contribute significantly to sustainable development and a new approach to urban management. In this type of management, hierarchies and bureaucracies will be eliminated. Also, each person does what he specializes in, and the relationship is not the criterion for selecting individuals (Nazmfar et al., 2019). A quantum manager is a person who can make the best decision in the shortest time and has the power to resolve contradictions. In addition, he is a transparent and honest person and shares his decisions with the people and asks for their advice. Therefore, the solution to solving the current problems of urban management can be considered to be the use of strategic plans with the quantum management approach, and urban management should move towards creating small-scale structures with a wide scope of authority in the form of neighborhoods. Therefore, to prepare any plan for the development of the city, it is necessary to first of all gain knowledge. The knowledge in the urban planning system must be comprehensive and complete, so all dimensions of the city, including the city structure, uses, accesses, urban landscape, as well as the social, demographic, economic, managerial dimensions, etc., must be considered (Bahrini, 2022). Accordingly, the researcher addresses the main question: what is the network analysis process (DANP) of the sustainable development model based on the quantum management approach?

Theoretical framework

Sustainable development

The concept of sustainable development means a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional changes are coordinated and increase the current and future potential to meet human needs. Sustainable development means the management and protection of basic resources and the introduction and application of technological advances and organizational

Journal of
New Approaches in Management and Marketing
https://www.jnamm.ir
Volume 4, Issue 1, Spring 2025, Pages 310 to 331

structures through which human needs can be continuously and reasonably guaranteed for the present and future generations. (Roozbeh et al, 2023).

Quantum Management

Quantum management is a set of fully operational skills for managers appropriate for the characteristics of organizations in the last century. This metaphor for the behavior of managers is derived from quantum theory, which is derived from the field of physics. Quantum management increases the level of employee empowerment and at the same time provides the basis for consultation and synergy by employees and managers (Ali sofi & Salimi, 2023).

Rasouli et al. (2024) examined the antecedents and consequences of professional competence of school administrators with an emphasis on environmental sustainability and sustainable development. The research findings showed that the professional competency model of managers includes the enablers of skill competency, management competency, and professional ethics and behavior competencies, manager development, social characteristics of managers, establishing work groups to improve performance and green competency, attitudinal competencies, knowledge competencies, educational competencies, knowledge-skill and technology commercialization competencies, high-work ethic, consumption pattern reform, participation in development, and movement toward national authority; which lead to the realization of the results of high-work ethic, consumption pattern reform, participation in development, movement toward national authority, diversity and pluralism management, and strengthening the relationship between humans and nature. Ali sofi & Salimi (2023) studied the effect of quantum management skills on readiness for change with the mediating role of organizational agility. The findings from the structural equation model showed that the standard coefficient between quantum management on readiness for change (0.19), quantum management on organizational agility (0.58), as well as readiness for change and organizational agility (0.64), and the indirect effect of quantum management on readiness for change (0.47) were significant.

Research Methodology

The research method is applicable-developmental in terms of its purpose, descriptive in terms of data collection, and quantitative in terms of implementation method. The statistical population of the research includes 10 municipal managers with more than 20 years of experience and their field of specialization is urban management, selected through purposive sampling. A standardized AHP pairwise comparison questionnaire was used to collect data from the DEMETL section and the network analysis process to prioritize variables, and was distributed to the statistical population of the research and, after completion, collected and analyzed.

Research findings

The DANP method (a combination of DEMETL and the Analytical Network Process (ANP)) was used to prioritize the effective factors. The results showed that urban infrastructure development, self-organization, urban governance and legislation, quantum knowledge, improving the quality of life, economic infrastructure development, social justice and participation, and improving environmental quality are in the first to eighth priority, respectively.

Conclusion

The present study was conducted with the aim of the Analytical Network Process (DANP) model of sustainable development based on the quantum management approach. The results of this study are consistent with the results of Rasouli et al. (2024), Ali sofi & Salimi (2023), Roozbeh et al. (2023), Hajizadeh Majdi et al. (2023), Negahdarandeh & Anvari (2022), Nazarzadeh et al. (2021), Bahrini (2022), Shafiepour & Parhemat (2022), Dixon & Tewdwr-Jones (2021), and Rodríguez et al. (2019). Shafiepour & Parhemat (2022) showed that the characteristics of quantum management have a positive and direct impact on the three individual, social and organizational levels of human resource development, that is, by increasing quantum management techniques, the three individual, social and organizational levels of human resource development are improved.

According to the results of the research, the following suggestion was made:

-Reconstruction and modernization of worn-out water, electricity, gas and telecommunications networks to increase resilience to crises.

-Creating comprehensive roadmaps for infrastructure development, taking into account population growth and future needs of the city.

-Delegating more authority to local institutions and city councils to solve regional issues and encourage active citizen participation.