



Research Paper
(Qualitative)

Presenting a Data-Based Model for Establishing Smart Governance

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Abstract

The aim of the present study is to provide a model for establishing smart governance using a data-based approach. This study was conducted within the framework of a qualitative approach and using the data-based theory method in three stages of open coding, axial coding, and selective coding. For this purpose, data were collected through in-depth and semi-structured interviews with 15 experts, including university professors, experts specializing in the field of Information and Communication Technology (ICT) in the Ministry of Interior, and managers of the South Khorasan Governorate. Sampling was also carried out theoretically, using purposeful (judgmental) and snowball (chain) methods, and based on theoretical saturation of the data. 130 primary codes, 36 concepts, and 11 categories were identified from the analysis of the interviews. "Smart governance" as a central phenomenon has been formed in the shape of "intra-organizational" and "extra-organizational" causal conditions, "needs assessment and capacity building" contextual factors, "intra-organizational" and "extra-organizational" intervening factors, "ICT governance" and "knowledge management governance" strategies, and "intra-organizational" and "extra-organizational" consequences. In this study, by analyzing the effective components, how to establish and implement smart governance in the country from the perspective of experts in the field of Information and Communication Technology (ICT) in the Ministry of Interior and managers of the South Khorasan Governorate has been examined and presented in the form of a model, and finally, solutions have been proposed based on the surveyed categories.

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Extended abstract

Introduction

The rapid growth of information and communication technology in the past two decades has created an unpredictable world for societies; in such a way that various aspects of life, business and governance have undergone fundamental changes and developments. Therefore, the concept of “smart governance” has become the only way for governments and administrations to face these extensive and rapid changes (Borna, 2016; Moghaddisi, 2016). Smart governance aims to provide a platform for integrated management of societies through the interaction and participation of citizens, the private sector and the government (Azkuna, 2017) by means of ICT and utilizing intelligent processes and information-based decision-making (Alawadhi et al., 2012). Smart governance aims to improve cooperation between people and the government by creating a participatory environment and with the help of information and communication technology, thereby increasing the level of people's participation in macro-decision-making and reducing urban management costs, improving efficiency and optimizing resource consumption, making officials more accountable, transparency of administrative processes, increasing people's trust in officials, decentralization, and ultimately advancing urban programs (Jalali, 2017; Flamki, 2014). Therefore, managers and government officials should be driven towards smartization in all dimensions and pillars of society. Our country, as a growing country in terms of population and economy, also needs to enter this important category by creating the necessary infrastructure for smartization and providing the necessary platform for the establishment and implementation of smart governance.

On the other hand, it should be acknowledged that development and underdevelopment are among the most important challenges and concerns of social scientists, political elites, and governments in contemporary history in developing countries (Yarahmadi & Almasifard, 2017). In this regard, international institutions proposed the development model of “good governance” (Alini, 2015). Good governance includes indicators such as the rule of law, accountability, transparency, responsibility, and anti-corruption (Deghati et al., 2019), which, with a normative and value-based approach in a correct manner, considers a new concept of the state and the process of governing society, and presents a new method for governing societies, which can ultimately lead to reform of the state sector, strengthening civil society, and accelerating private sector participation (Ayouzi & Marzban, 2016); however, evidence suggests that the state of good governance in our country is not desirable, assuming the impartiality of international organizations and their reports on the degree of compliance with good governance indicators in the country (Biginia et al., 2012).

Theoretical foundations of research

Smart governance

Smart governance aims to provide a platform for integrated management of urban affairs. This platform should provide services and interactions between different components of the city in order to achieve an effective and efficient city (Ghorbani Zadeh et al., 2013). Smart governance is the use of information and communication technology by the public sector with the aim of improving the provision of services and information to citizens, encouraging citizen participation in the decision-making process, making government actions more accountable and transparent, which can lead to a change in the way citizens communicate with the government and with each other through the use of new communication channels, including "e-government", and provide a suitable environment for involving, enabling, and empowering citizens (Piranejad et al., 2013). Communication patterns in smart governance include the government-to-citizen (G2C), government-to-business (G2B) and government-to-



government (G2G) communication patterns. In the government-to-citizen communication pattern, the government tries to share its policies and programs with citizens using mass media and receive the necessary feedback from them. Also, in the government-to-business communication pattern, the government strengthens its communications with companies and business institutions to facilitate economic growth, and companies also improve their knowledge and information in terms of laws and business facilities. Finally, in the government-to-government communication pattern, the communication model between government organizations is considered and an attempt is made to create a transparent and corruption-free environment with the help of technological tools (Kramers et al, 2016).

Research Methodology

The present study is a fundamental study in terms of its purpose, with an exploratory approach, and of qualitative type. The strategy used in this study is data-based theorizing (grounded theory) based on the perspective of Strauss and Corbin (1998), which includes three stages of open coding, axial coding, and selective coding. The statistical population of this study includes 9 experts and faculty members and 6 knowledgeable managers and specialists in the field of information and communication technology in the Ministry of Interior and managers of the South Khorasan Governorate who have sufficient experience or their main expertise in the field of smartization. In-depth interviews were conducted with 15 of these people using the theoretical sampling method in a purposeful manner until theoretical saturation. In this study, the data collection method was in-depth interviews, which were theoretically saturated from the eleventh interview onwards; however, for greater certainty, the researcher continued data collection until the fifteenth interview. In this regard, the interviewees were selected gradually. In other words, with the identification of ambiguous points or weaknesses in the pattern and categories after analyzing each interview, the next person was selected based on the expertise required to resolve and correct the points of ambiguity or weaknesses.

Research findings

Step One: Open Coding

Open coding is the analytical process of naming concepts, classifying them, and discovering their characteristics and dimensions in the data through continuous comparison (seesawing) in which the researcher examines and analyzes concepts from different angles, from the inside and outside, or in reverse, to gain a different perspective on the importance and position of the concepts (Mohebzadegan et al., 2013). In this step, the researcher attached codes to each of the text fragments by examining the interview texts line by line, and finally, after the initial coding of the interview texts, a total of 130 final codes were counted.

Step Two: Axial Coding

The purpose of axial coding is to create a relationship between the created categories. In this stage, a category from the open coding stage is selected and considered as the central category and the categories of causal conditions, strategies, contextual conditions, intervenors and consequences are linked to it. The axial phenomenon is an idea or phenomenon that is the basis and axis of the process to which all other main categories are linked and appears repeatedly in the data (Mehdibeigi et al., 2019). Therefore, "smart governance" was considered as the axial category. The pattern extracted from the MaxQDA software resulting from the research findings is presented in Figure 1.

Stage Three: Selective Coding

The final stage of coding in the grounded theory method is “selective coding”. This coding is used to integrate and refine the categories. At this stage, the main categories emerging from the research are linked together and a larger theoretical framework is presented so that the research findings take the form of a theory (Manouriyan et al., 2021).

At this stage, intra- and extra-organizational factors were extracted as causal factors; intra-organizational intervening factors such as promoting trust, commitment, and establishing justice; and extra-organizational factors such as forming smart governance. Needs assessment and capacity building were also identified as contextual factors, and finally, ICT governance and knowledge management were extracted as strategies and extra- and intra-organizational consequences.

Discussion and Conclusion

The present study aimed to deliver a comprehensive model for establishing smart governance in the country, relying on the data-based theorizing strategy and the paradigmatic model of Strauss and Corbin, and was placed in the form of axial coding by extracting a theory from the data. In the aforementioned model, the axial phenomenon is affected by causal conditions, and affects the strategies itself. The strategies, in turn, shape the consequences related to the phenomenon under study under the influence of the underlying conditions and intervening factors. The obtained pattern was expressed in the form of a narrative derived from the data in order to obtain an eloquent interpretation of it. For this purpose, in-depth and semi-structured interviews were conducted with 15 experts, including university professors, experts specializing in information and communication technology (ICT) in the Ministry of Interior, and managers of the South Khorasan Governorate selected through theoretical sampling; and ultimately, 130 initial codes, 36 concepts, and 11 categories were identified. Based on the identified concepts and categories, the establishment of smart governance in the country is directly influenced by internal and external causal factors, including the requirement to reform the administrative system, the necessity of proper resource management, the issuance of new laws and regulations, a paradigm shift in the role of the government, the people, and the private sector in governance, rapid environmental changes and developments, the emergence of new technologies, and the movement of societies toward intelligence. Along with the research results, it should be said that in addition to causal factors, background conditions including needs assessment and capacity building also provide a suitable platform for the establishment of smart governance. In this study, equipment and infrastructure, resources, information and communication technology, cybersecurity, and smart statistics and information should be needs-assessed, and along with that, appropriate capacity should be created through smart preparation, smart architecture, smart administration, and strategy development to establish smart governance. Other results of the study included the identification of two categories of internal and external intervening factors that could indirectly affect the establishment of smart governance in the country, which internal intervening factors included the promotion of commitment, trust-building, and establishing justice; and external intervening factors included the context for the formation of smart governance and the role of civil society and the private sector. Another part of the results of the study also showed that strategies that can be used to establish smart governance in the country as effectively as possible include: the strategy of information and communication technology governance, and the governance of knowledge management. Finally, the results of the present study showed that the consequences of establishing and implementing smart governance in the country will include increasing efficiency and effectiveness, debureaucracy, agility, increasing transparency, accountability, democracy, and improving services; which



were placed in two categories of internal and external outcomes. Therefore, it can be said that, compared to the results of previous research (Hosseini et al., 2022; Gholami Noorabad et al., 2022; Aminnejad et al., 2020; Anindra et al., 2018; Meijer & Bolívar, 2015; and Pereira et al., 2018) conducted in relation to smart governance, these studies have only either examined and identified a series of dimensions and components of smart governance from a specific and limited aspect, or have been limited to theoretically expressing the applications of this type of governance; however, the present study, using the qualitative method of data-based theory, has presented a comprehensive model in the field of establishing and implementing smart governance in the country.