Designing a Model for Service Delivery Processes in a Smart Government (Case of Iran)

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Abstract

Due to the novelty of the concept of Smart Government as the new generation of e-government, a comprehensive model for organizations to deliver services to users has not yet been presented. The aim of this research is to design a model for service delivery processes in a Smart Government. The research approach is qualitative. In this study, interviews were conducted with managers, academic experts, and specialists in the fields of e-government and Smart Government to identify the factors influencing Smart Government. After analyzing the data obtained from the interviews, approximately 102 codes were extracted. Based on the similarity and conceptual congruence of these codes, they were categorized into concepts, and in a broader stage, into 37 sub-themes, and finally, into 17 main themes. The 17 main themes identified for designing the Smart Government model are categorized into the following sections: Outcomes (smart interaction, access to smart services, increased smart informational stability, perceived usefulness), Contextual Factors (financial, legal, technological, and institutional factors), Causal Factors (organizational factors, extra-organizational factors), Intervening Factors (cost, social influence, public evaluation of the government, perceived risk), and Strategy (needs assessment, decision-making, and knowledge management).

Keywords: e-government, Smart Government, Smart Government model

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1. Introduction

The introduction of technology into human life has always aimed at simplifying tasks and improving their execution speed. However, today, technology is not limited to smartwatches and smartphones; rather, achieving smart cities and smart governments has become one of the most challenging areas of research. Some researchers even believe that in the near future, the wealthiest and most powerful countries will be those that have taken early steps in this direction. Given the continuous population growth in cities, traditional methods of managing cities and countries will no longer suffice [1]. How systems or governments will be able to govern people in the coming decades is one of the fundamental issues that must be addressed [2]. Moreover, with the advent of new technologies, governments must be able to utilize these technologies, adapt to new conditions, and innovate in the way they deliver government services, ensuring both speed and quality [3]. As a result, many experts have proposed solutions such as open government, smart government, smart governance, and smart cities to face these challenges and move toward technological change [4].

The concept of smart government has become a priority for many governments. This policy represents the adoption of a more open and participatory approach to public consultation and the acceleration of digital transformations through information and communication technologies in the public sector [5]. This policy encourages local governments to utilize smart technologies to increase the availability of government information and improve data management processes [6]. These efforts aim to enhance their ability to make public services more attractive and user-friendly. Therefore, it can be said that smart government encompasses organizational efforts to optimize the public sector's performance by extensively using technology and innovation in an attempt to increase efficiency, openness, and transparency [2]. What distinguishes smart government from previous generations of governance is its creative activities using emerging technologies, combined with innovative strategies, to move toward a more agile and flexible governmental structure [3].

However, for the success of such smart government initiatives, citizens must understand and accept government services. Thus, the successful implementation of smart government depends on the end-users' understanding of smart government services and their willingness to adopt these services [7].

Therefore, it can be said that smart government plays a significant role in providing high-quality services to achieve sustainable competitive advantages [8]. Governments that offer services beyond their citizens' expectations often receive higher satisfaction from them, and citizens' interest and loyalty toward using electronic services increase [9]. In general, it can be stated that smart services aim to enhance modern public services and make them more efficient. When an effective strategy is in place, organizations can reform their information systems. Several authors stated that a smart government system essentially aims to increase effectiveness, transparency, collaboration, and ease of carrying out governmental processes for all individuals involved, including citizens [2, 10, 11].

Therefore, given the importance of smart government in today's societies and the necessity to provide a platform for the growth of information and communication technologies, as well as the existing gaps in this field, the researcher was motivated to conduct a study on service delivery in smart government within Iran's public sector organizations.

2. Methodology

Since this research aims to design a model for service delivery processes in a smart government (for Iran), it is applied in terms of purpose and descriptive-survey in terms of data collection method. The study is qualitative and statistical population includes managers, university professors, and experts in the field of e-government and smart government, who play a key role in decision-making for the design and implementation of the service delivery model in smart government.

The sampling method used is snowball sampling, starting with a small group of individuals with specific characteristics or experiences. These individuals were then asked to recommend other candidates with similar characteristics and experiences. This process continued until reaching a sufficient sample size (saturation), which in this study involved 15 managers, university professors, and experts in this field. To ensure the reliability of the extracted codes, inter-coder reliability or intra-subject agreement between two coders was used. To ensure the validity and accuracy of the research findings, several interviewees were asked to review the final report of the initial coding and derived categories and provide their feedback.

3. Findings

Grounded theory is a general, inductive, and interpretive research strategy. Grounded theory is considered one of the research strategies through which theory is formed based on key concepts derived from data. In this strategy, the process of theory formation moves from the specific to the general. Essentially, grounded theory is a strategy for gaining insight into the topic under study, particularly for subjects that have not yet been extensively researched, and where our knowledge is limited. Initially, the researcher reviewed and analyzed the interviews line by line to extract concepts and specific codes. Once the data and information were gathered, the researcher performed open coding of the relevant textual data. At this stage, by reviewing and reflecting on the text, initial labels and themes were extracted. Coding at this stage was centered around the researcher, who took on the primary responsibility for identifying phrases, keywords, attaching codes, and descriptors, which is considered the most critical and time-consuming part of thematic analysis. Following this, all extracted codes were discussed and reviewed. Through the analysis of the collected data, 102 initial concepts or base themes were identified in the first stage. The researcher then extracted the categories and organized them in Table 1.

Table 1. Future Banking Drivers with a Focus on Blockchain Technology

Type	Category	Concept	Indicator
Outcome	Smart Interaction	Collaboration	Inter-organizational collaboration, Work collaboration
		Sharing	Information sharing, Knowledge sharing, Resource sharing
		Integration	Information integration, System integration
		Participation	Citizen participation
	Access to Smart Services	Smart Service Delivery	Sustainable services, Smart business services, Accessible services
	Increasing Smart Informational Stability	Smart Environment	Equality and justice, Ethical orientation, Trust, Strengthening national identity
		Smart Security and Safety	Privacy protection, Information security
	Perceived Usefulness	Increasing Efficiency and Effectiveness	Speed of task completion, Reducing error rates, Ease of site use, Proper user guides
Contextual Factors	Financial	Availability of Necessary Resources	Allocating required resources for implementing plans, Utilizing investors
		Funding	Government funding, Private sector funding
	Legal	Individual Rights	Presence of laws to protect individuals
		Organizational Rights	Presence of laws to protect organizations
		Legal Framework	Presence of regulations, Standards
	Technological	Hardware	Establishing support units, Informatics department responsiveness, Use of up-to-date systems
		Software	Developing applicable software, Providing localized software, User-friendly software
		Network	Availability of a strong internet network, Strong intranet
Causal Factors	Organizational Factors	Organizational Structure	Decentralized organizational structure, Focus on competencies
		Organizational Culture	Organizational values, Norms
		Organizational Capabilities	Technology management, Data management, Cybersecurity, Change management, Worker experience, Innovation management
		Human Resources	Employing competent personnel, Continuous learning and training, Career paths
		Leadership	Clear leadership style
		Strategy	Establishing a shared understanding
Extra-organizational Factors	Smart Economy	Innovation	Entrepreneurship, Flexibility
		Smart Society	Knowledge and awareness, Information literacy, Perceived ease of use, Perceived usefulness, Trust, Social influence
		Compatibility	Perceived compatibility, Quality, Reliability
		Progress Factors	Societal advancement requirements, Citizen expectations, Competitive advantage
Intervening Factors	Cost	Affordability	Access costs, Pricing
	Social Influence	Influence	Influence from friends, Influence from media

	Public Evaluation of Government	Trust	Honesty and competence of political officials, Feeling secure providing information
	Perceived Risk	Risk Acceptance	Identity theft, Personal data theft, Hacking
Strategy	Needs Assessment	Needs Assessment and Planning	Stakeholder-based needs assessment, Geographical planning, Policy-based needs assessment
	Decision-Making	Smart Decision-Making	Decision-making by elites, Issue diagnosis by elites
	Knowledge Management	Organizational Learning	Focus on learning, Knowledge updating, Knowledge sharing

The findings of this study suggest that public management scholars have long sought methods to increase efficiency in government service delivery processes. The phenomenon of reforming and improving public service delivery is a challenge faced by all governments and local authorities worldwide. This pursuit is even highly emphasized in developed countries. Governments have continually strived to reform public service delivery processes at various levels and in various ways, as these reforms yield several benefits, including correcting financial imbalances, reducing costs, reforming public services, improving human resource management systems, advancing e-government, leveraging IT services, enhancing policy-making efficiency and quality, and strengthening transparency and accountability. This study aimed to design a smart government service delivery model based on expert opinions and existing studies, which is illustrated in the model below.
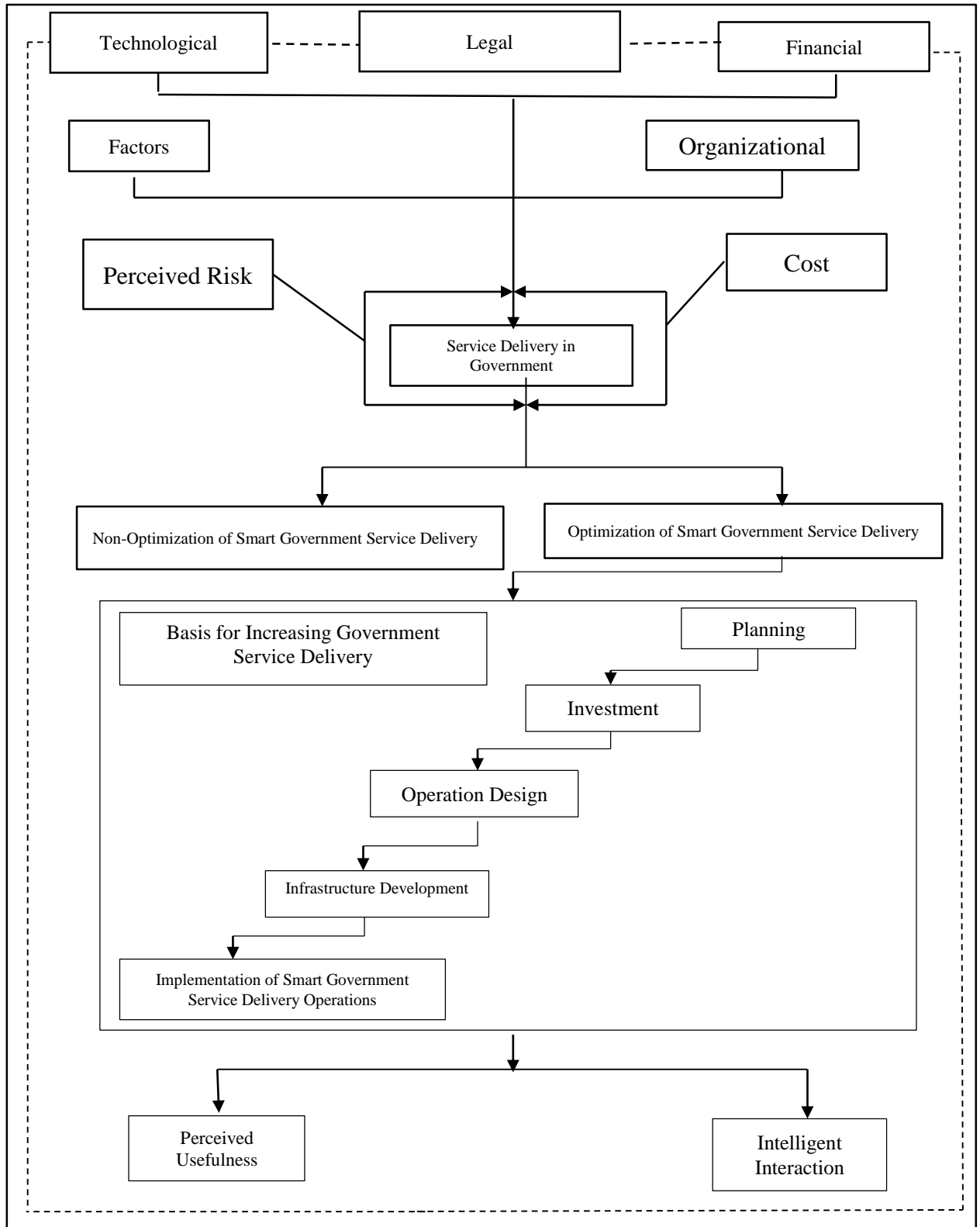
Figure 1. Smart Government Service Delivery Model

4. Discussion and Conclusion

One of the main strategies considered for the service delivery process in a smart government is needs assessment. Strategies are based on actions and reactions to control, manage, and address the phenomenon in question. Strategies are purposeful and intentional, undertaken for specific reasons. At the same time, they may serve purposes unrelated to the phenomenon but will still have consequences for it. In this research, the introduction of strategies involves examining needs and methods to fulfill and resolve them. This examines the extent to which the public in the country requires service delivery within the framework of smart government. The needs assessment can be adjusted based on the opinions of stakeholders, geographical planning, or the country's policies. In one interview, it was specifically stated that the type of societal needs can determine the method of service delivery in smart government, as follows:

"We need to see what the society needs... Sometimes traditional methods are no longer sufficient in the society... These days, families are so busy that they cannot follow up on tasks in person, or we see that society needs to be up-to-date... The internet came to make things easier for us... These gaps make people think about progress and create new conditions."

Decision-making is another factor in the service delivery process strategy in smart government. In this strategy, the elite community plays an effective role in service delivery because, with regard to the society's progress, the elite community often identifies many societal needs. In a way, they help guide society toward demanding services through smart systems. However, these factors alone cannot fully explain service delivery through smart systems. One of the crucial factors in this matter is contextual or background factors. In this research, three key contextual factors were presented: financial, legal, and technological conditions. Financial conditions are one of the critical factors in creating a smart government. The analysis has shown that organizations with better financial conditions have been more successful in delivering smart services and are relatively ahead of other organizations. In the interviews, it was stated:

"Some organizations generate income. For instance, you can consider the electricity department as an income-generating organization. Although they have high costs, they can allocate part of their income to smartening their

activities and offer an application where clients can submit their requests, make payments, and track the progress of their requests. It's not just about creating a website or app; these need to be fully monitored, feedback needs to be gathered, and steps should be taken for further improvement of the programs."

However, financial resources should not only rely on organizational income, and the necessary costs and budget for delivering smart services nationwide should be anticipated. In continuing the discussion of contextual factors, legal conditions can also be mentioned. Service delivery within a smart system should not infringe upon individual or social rights, nor should it result in incomplete or deficient service delivery. In some cases, it has been observed that legal gaps have hindered service delivery through smart systems. For example, are the necessary laws in place to support individuals' legal follow-ups? If an individual encounters a problem while receiving a service, can they claim their rights? In the prvious research [12, 13], this issue was confirmed. It was also more apparent in the interviews conducted in this study. For example:

"Indeed, we are at the beginning of the smartening process, but we need to bear in mind that we should not always blame the organization. If a problem arises, and someone files a complaint against the organization, there must be laws and regulations allowing the organization to defend itself."

Another important factor in the foundation or context of service delivery is the type of technology. Organizations must be able to create both hardware and software capabilities, such as establishing support units, providing necessary responsiveness, using up-to-date software, and developing user-friendly software to encourage people to use smart services. One interviewee stated:

"Hardware means that our subsystems are up-to-date and capable of running the program well, providing access for all users. If our systems are outdated, we won't be able to meet user needs through our programs and platforms because the system will crash, program speed will drop, and information will not be easily transferred... Now, as a user, when you encounter such a system, are you interested in using it? Definitely not."

Or:

"These systems need a support unit available at all times, knowledgeable, and capable of quickly resolving issues. Otherwise, a user who wanted to track their work from the

office or home will find themselves wasting hours, only to achieve nothing in the end."

Up to this point, most of the discussion has focused on how organizations deliver services. It can be said that this is one part of service delivery, while the other side of the coin is institutional factors. These factors indicate whether citizens are eager to use smart services or if other mechanisms are needed to drive people toward this direction. Factors such as social awareness, citizen participation, and public readiness to accept these services are crucial and vital in this regard.

Another important factor in service delivery is causal conditions. Causal conditions for delivering services within a smart government can be divided into organizational and extra-organizational conditions, derived from expert interviews. In the organizational context, factors such as organizational capabilities, human resources, management systems, or leadership and strategy were mentioned, which together represent the organization's conditions for service delivery. Weakness in any of these areas will prevent the organization from delivering services properly. Extra-organizational conditions refer to factors such as the smart economy, smart society, and compatibility, a concept also supported by previous studies [2, 14].

One of the other key topics is the intervening factors in the model. Intervening conditions are structural conditions that belong to the phenomenon in question and influence action and reaction strategies. They either facilitate or limit strategies within a specific context. These conditions include cost, social influence, and perceived risk. The cost examines the expenses a citizen must bear to receive a service. Social influence evaluates the impact of media, other social networks, or even trusted individuals such as family and friends. These factors can either accelerate or hinder service delivery; for example, if the media aligns with government and organizational policies, people's willingness to use smart services will increase. However, the dark side of technology use must also be considered. The potential for identity exposure or data theft is an issue that has become more evident in recent years in our country, necessitating the protection of individuals' identities. Repeated incidents could harm service delivery processes in a smart government.

The culmination of all these factors leads to smart interaction, as emphasized in the in prior research [4, 15-17]. As a result, the dimensions presented in this research can lead to growth and maturity. It is recommended that the country's executive agencies base their work on the proposed model for smart service delivery and begin moving toward it. Additionally, executive agencies that have implemented smart service delivery should continue to improve service provision and define its requirements. The proposed model offers a suitable framework for delivering services within a smart government. It is also suggested that future research develop a maturity evaluation model to assess governments and determine their progress in delivering smart services. This model can visualize the steps needed to elevate countries from their current status, as determined in evaluations, to higher levels and provide a roadmap for future planning.

Authors' Contributions

Authors equally contributed to this article.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

All procedures performed in this study were under the ethical standards.

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