







Designing a Model for Public Monitoring of Public Policies with a Crowdsourcing Approach in the Domain of Public Services

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Abstract

The primary aim of this article is to design a model for public monitoring of public policies using a crowdsourcing approach in the domain of public services. The research method employed is mixed (qualitative-quantitative). To conduct the study, in addition to document analysis, thematic analysis using MAXQDA12 software was applied to identify factors influencing the socialization of secondary school students. The statistical population includes all experts in the field of public policymaking, as well as managers and specialists in the domain of public services. A total of 16 interviews were conducted until theoretical saturation was achieved. Each semi-structured interview lasted between 45 and 75 minutes and was conducted with experts in 2023. The interviews were analyzed in terms of basic, organizing, and overarching themes. To assess data normality and sample size adequacy, the Kolmogorov-Smirnov test was utilized, and structural equation modeling was employed to design the model. Based on the semi-structured interviews, three dimensions (macro-level monitoring [external], internal monitoring [organizational], and international monitoring), 11 components (organizing themes), and 53 indicators (overarching themes) were extracted. The results of the Kolmogorov-Smirnov test revealed that the sample size was adequate, and the data were not normally distributed. Furthermore, the final model's findings indicated the effect of macro-level (external) monitoring with a coefficient of 0.758, compared to internal (organizational) monitoring with a coefficient of 0.703 and international monitoring with a coefficient of 0.701. Finally, to validate the model, five factors—philosophy and objectives, theoretical foundations, operational principles, and implementation mechanisms—were used, demonstrating that the model is sufficiently valid.

Keywords: *Public Monitoring, Public Policy, Crowdsourcing, Public Services.*

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1. Introduction

Governments, in addressing public issues and challenges, are inevitably compelled to formulate public policies. As the implementation of policies plays a crucial role in solving societal problems, the quality of public sector management can be assessed based on the success of public policy implementation [1]. Therefore, one of the primary duties of governments is the correct implementation of public policies. In recent years, scholars in the field of policymaking have

identified and categorized various factors as influential in the implementation of public policies, with differing interpretations and analyses. It is thus vital for public policy implementers to be aware of and consider these factors, striving to achieve them to enhance the chances of successful policy execution [2].

The key issue, however, is determining the relative importance and priority of these factors in policy implementation. In other words, should implementers assign equal significance to each set of influencing factors, or does their impact on successful policy implementation vary?



Accordingly, this study seeks to identify these factors and, using existing theoretical literature, examine their significance and prevalence in public policy oversight from the perspective of experts in the field.

Typically, judgments and opinions regarding a policy commence simultaneously with its implementation. The monitoring and evaluation of public policy gained prominence among policymakers and implementers in the late 1960s, notably following the efforts of Lyndon Johnson [3, 4]. An essential feature of any efficient and accountable administrative system is the existence of a monitoring and control subsystem [5]. Monitoring may be defined as a mission for an organization or voluntarily conducted for the public good. In the Islamic Republic of Iran, mutual oversight between citizens and the government is explicitly emphasized in Article 8 of the Constitution [6]. With the evolution of governance methods, monitoring approaches have also adapted to contemporary needs. Today, leveraging the full capacity of society to address challenges is a focus of policymakers. The concept of public oversight aligns with related concepts such as accountability, transparency, and responsibility, emphasizing the public's right to monitor government performance and its affiliated institutions. Public oversight serves as a common ground and prerequisite for other governance considerations and urban indicators [7].

Modern governments are continually confronted with complex issues characterized by multiple actors, diverse perspectives, conflicting interests, significant intangible variables, and substantial uncertainties [8, 9]. Consequently, no government can claim to possess all the tools or authority necessary to influence complex policy outcomes, despite being a critical actor. In this regard, the government's role is to set the agenda, invite appropriate stakeholders, and facilitate sustainable solutions to public problems [10]. This dispersion of power, combined with the potential of information technology to make public policy processes more accessible, underscores the necessity of governance discussions [11].

Public policy represents a government decision in response to a public issue, challenge, or problem. It may emerge as a reaction to an incident or a novel idea [12-14]. Once a policy is implemented, the process of monitoring begins, gathering feedback on its execution and capacity to resolve problems. Performance is measured, predetermined goals are compared, allocated resources are reviewed, and revisions are made. Monitoring and evaluation serve as the final opportunity to revise or reassess a policy to avoid its mismanagement, suboptimal outcomes, or outright failure [3, 15]. Without an effective monitoring system, organizations fail to fulfill their

missions or use resources efficiently [16]. Without monitoring and evaluation, policy credibility and the accountability of individuals and organizations responsible for policy execution remain uncertain. In such circumstances, monitoring and evaluation become even more critical, facilitating the identification of issues and their inclusion in the agenda-setting phase [17, 18].

The rapid advancement of science and information technology has significantly altered public policymaking, shifting from individualistic, untested approaches to collective wisdom and participation (Zolfaqarzadeh & Shahsavari, 2019). International scholars have examined public participation from various perspectives and approaches, proposing diverse models and frameworks. The outcomes of these studies often depend on cultural, social, local, political, legal, and governance structures, contributing to the diversity in this field of research [19]. Most studies aim to apply findings and utilize results in real-world contexts. Research on public oversight also exhibits a direct dependence on environmental characteristics such as governance structures, political systems, legal frameworks, and socio-cultural contexts [20]. Consequently, a localized perspective on public oversight is of heightened importance. Despite scholarly interest in public participation and oversight concepts, there is no consensus on their nature and purpose (Bidwell & Schweizer, 2021).

While numerous studies have explored public oversight and participation, few have focused on the effectiveness and practical success of public oversight in achieving goals such as enhancing democracy and public satisfaction [18]. Limitations and challenges in oversight processes, including the inability of responsible bodies and inappropriate tools and methods, further highlight the necessity of discovering practical approaches to monitoring. Domestically, limited attention has been paid to the concept of public services, with most studies addressing general principles and neglecting its specific role (Vaezi & Alborzi, 2017). Changing institutional and social conditions over time underscore the need to revise outdated methods and develop new approaches suited to current circumstances.

The literature highlights various perspectives on oversight, crowdsourcing, and public policy implementation in different contexts. Dehbalaei et al. (2023) emphasized the significance of evaluating public policy implementation processes, focusing on sustainable urban development policies within Iran's Sixth Development Plan. Their mixed-method research identified six critical factors and 52 indicators using interviews and confirmatory factor analysis, emphasizing the importance of standards, resources, executors, implementing organizations, external factors, and outcomes in policy implementation [15].

Tiglao et al. (2023) examined the integration of crowdsourcing and digital co-production for modernizing public transportation in General Santos City, Philippines. Through the SafeTravelPH platform, their research showcased the potential of participatory governance and real-time data analytics for improving transportation services during the COVID-19 pandemic, offering insights for other developing cities [21]. Yadin (2023) expanded the theoretical discourse on crowdsourced regulation, focusing on oversight and enforcement using digital platforms. He argued that crowdsourced regulatory practices enhance transparency, administrative efficiency, and public trust while addressing resource limitations and deterrence challenges. However, Yadin also highlighted new risks, such as legal and democratic failures, requiring careful consideration in policy design [22]. Collectively, these studies underscore the transformative potential of crowdsourcing and participatory approaches in policy oversight and implementation, while also addressing their contextual and structural challenges.

In this context, a public oversight model for policymaking with a crowdsourcing approach in public services can address gaps in theoretical literature and provide a localized model tailored to the characteristics of governmental organizations. The aforementioned considerations motivated the author to conduct this research, aiming to discover optimal public oversight strategies and propose a suitable model for public oversight in the domain of public services with an emphasis on crowdsourcing.

Additionally, this research's findings can aid policymakers, implementers, and managers of governmental organizations in better understanding barriers to public policy oversight and leveraging modern public participation methods to achieve objectives such as enhancing public services with minimal costs and maximum confidence. Students and researchers in public administration and policymaking can also benefit as potential users of this study. These factors prompted the researcher to address the primary question: What is the model of public oversight for policymaking with a crowdsourcing approach in the domain of public services, and what are its key indicators?

2. Methodology

This study employed a mixed-method approach (quantitative and qualitative). In the qualitative phase, semi-structured interviews were used to identify the initial components through thematic analysis. The inclusion criteria for experts included experience in governmental organizations

and healthcare centers, academic and research backgrounds, interest in the research topic, and a field of study relevant to the research subject. The sampling method was snowball sampling (Tashakkori & Teddlie, 2003, p. 93), involving 16 experts in the qualitative phase. The qualitative thematic analysis aimed to identify dimensions and components affecting public oversight of public policies with a crowdsourcing approach in public services.

For the quantitative phase, data were collected using a researcher-developed questionnaire derived from the qualitative findings. The statistical population for this phase included managers and employees working in healthcare centers in Tehran Province. Based on the Morgan table, a sample size of 335 individuals was determined. The sampling method for the quantitative phase was multi-stage stratified random sampling.

The average duration of the interviews was 64 minutes. After transcribing the interviews, thematic analysis was conducted concurrently with data collection. The interviews were first transcribed, and a set of extracted codes was sent to the interviewees for validation. The data were reread multiple times for familiarization and immersion, allowing for the identification of initial codes. Similar initial themes were grouped into categories, forming the initial classifications. These categories were then integrated to form overarching themes. Prolonged and in-depth engagement with the data was maintained to ensure the accuracy of the collected data. Additionally, two independent researchers participated in the data analysis alongside the primary researchers, reviewing the transcripts for coding and categorization validation. To enhance confirmability, feedback was repeatedly sought from the participants. Maximum diversity in sampling and extended sessions were other measures used to increase data credibility. Initial codes and subcategories emerged from the first interviews, and data reduction continued across all analytical units (themes) until the themes crystallized. Interviews continued until theoretical data saturation was achieved.

Qualitative content analysis was performed using MAXQDA12 software. Structural equations were analyzed using SmartPLS4 software, and model validity was assessed using SPSS25 software. Ethical considerations included obtaining informed consent, maintaining the confidentiality of participants' information, and ensuring integrity in the transcription of interview content.

3. Findings and Results

Question 1: What are the factors influencing public oversight of public policies with a crowdsourcing approach in the domain of public services?

To answer this question, semi-structured interviews were designed and conducted with experts in the fields of philosophy of education and educational management. Among the 16 experts who participated in this study, 10 were faculty members, and 6 were executive managers. The qualitative

content analysis process was utilized to determine the most significant determinants of public oversight of public policies with a crowdsourcing approach in public services. Through this process, 53 initial themes were identified. Following multiple reviews and the merging of codes based on similarities, 11 components and 3 main dimensions were ultimately extracted for public oversight of public policies with a crowdsourcing approach in public services (as shown in Table 1).

Table 1. Dimensions, Components, and Indicators of Public Oversight of Public Policies with a Crowdsourcing Approach in Public Services

Overarching Themes	Organizing Themes	Basic Themes
Macro-Level (External) Oversight	Public Monitoring and Political Participation	Individual and public interest conflict control (self-regulation), Media, Protests and marches, Demonstrations and sit-ins, Elections
	Parliamentary Oversight	Parliamentary Oversight Assistance, Court of Audit, Article 90 Commission, Parliamentary inquiries, Impeachment by representatives
	Executive Oversight	Planning and Budget Organization, Ministry of Intelligence, Regulatory organizations (e.g., consumer rights, disciplinary measures), Supreme Oversight Council, Presidential Special Inspection, Ministry of Finance Comptroller
	Judicial Oversight	National Inspection Organization, Prosecutor General's Office, Administrative Justice Court, Public and Disciplinary Prosecutor Offices
	Political and Governmental Structure Oversight	Expediency Discernment Council, Armed Forces Information Protection, Leader's Inspection Office, Competition Council, and National Competition Center, Guardian Council, Regulatory and Legislative Organizations
Internal (Organizational) Oversight	Civil Society and Non-Governmental Organizations Oversight	Social norms and values clarification, Enhancing policymakers' and implementers' accountability, Public service standards clarification, Policy process and objectives clarification, Oversight process and objectives clarification, Development of multi-skills in information technology
	Administrative Oversight	Organizational inspections and complaints, Organizational budget and financial resources, Public relations and customer affairs, Strategic planning, Performance evaluation, Direct observation, Periodic and real-time reports
	Public Suggestion System (Idea System)	Organizational objectives and mission clarification, Organizational roles and responsibilities explanation, Scope of organizational oversight explanation, Inspection and oversight principles clarification
International Oversight	Electronic (Online) Oversight	Development of management and human resources, Network systems establishment and development, IT infrastructure and equipment development, Administrative and educational infrastructure and equipment development, Data storage and database development
	Global Community Demands	International judicial and criminal bodies (e.g., international courts), International monitoring organizations, International cooperative organizations
	Global Monitoring Organizations and Institutions	International laws and regulations, Conventions, and agreements

Question 2: What is the normality and adequacy of the sample size for the dimensions and components of public oversight of public policies with a crowdsourcing approach in public services?

Based on the results of the normality test, since the significance level for all variables was greater than 0.05, the distribution was determined to be non-normal. Therefore, non-parametric tests and the SmartPLS software were used for data analysis.

The results of the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test indicate the suitability of the data for factor analysis. The KMO value is 0.743, suggesting a moderate to

high level of sampling adequacy. Bartlett's test of sphericity yielded a chi-square value of 21126.217 with a degree of freedom of 774, and the significance level is 0.000, indicating that the correlation matrix is not an identity matrix. These results confirm that the data is appropriate for conducting factor analysis.

Question 3: What is the model of public oversight of public policies with a crowdsourcing approach in public services?

To address this question, a questionnaire was distributed to a sample of 335 respondents, and the results were analyzed using structural equation modeling.

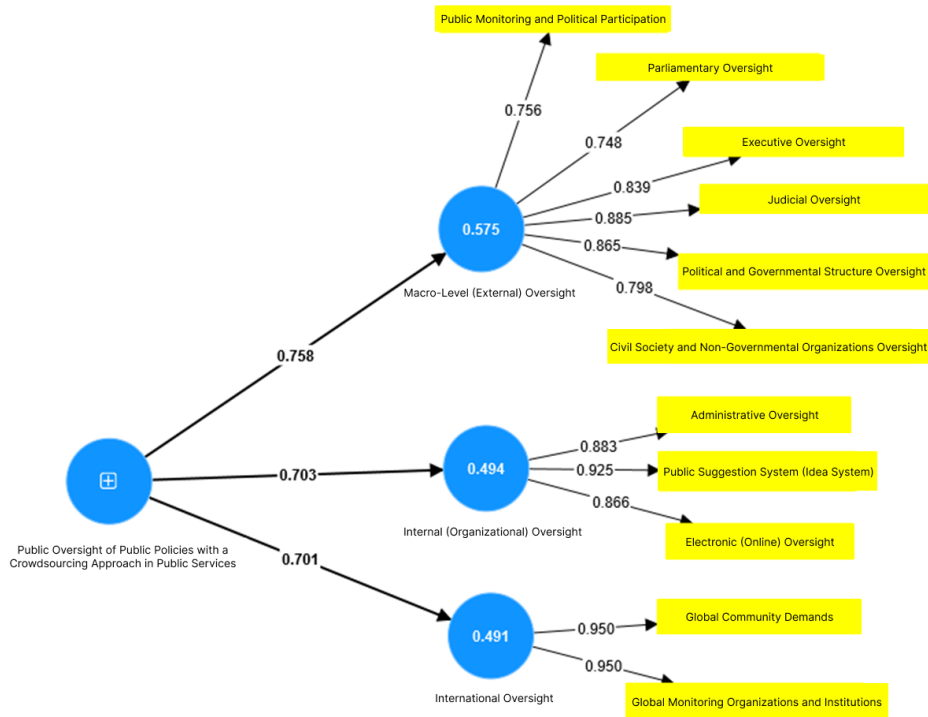


Figure 1. Results of the Test for Evaluating the Suitability of the Proposed Model for Final Framework Development

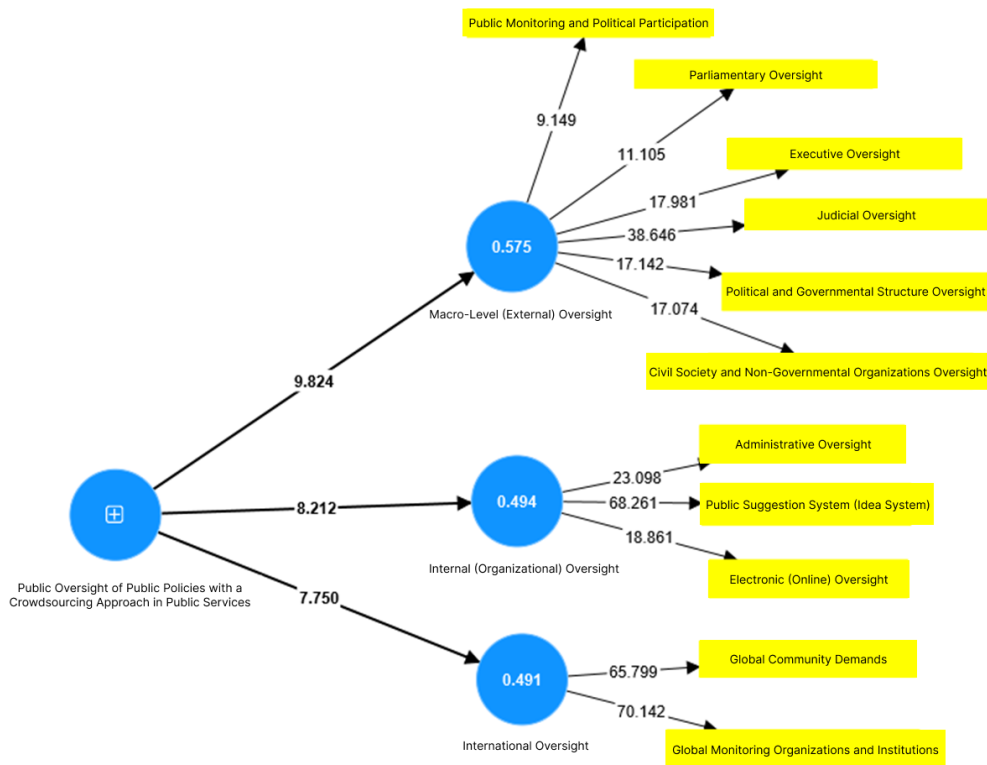


Figure 2. t-value Statistics of the Research Framework Using Bootstrapping Technique

The R² criterion connects the measurement model and the structural model in structural equation modeling. It represents the impact of an exogenous variable on an endogenous variable. It is important to note that R² is calculated only for endogenous

(dependent) constructs in the model, while its value for exogenous constructs is zero. A higher R² value for endogenous constructs indicates a better model fit. Chin (1998) defined

thresholds of 0.19, 0.33, and 0.67 as indicators of weak, moderate, and strong models, respectively.

The R^2 value for the construct was found to be 0.520, confirming the structural model's appropriateness based on these thresholds.

The GOF criterion measures the overall fit of structural equation models. Using this metric, researchers can assess the overall fit of the combined measurement and structural model of their research. The GOF metric was introduced by Tenenhaus et al. (2004), and Wetzels et al. (2009) proposed

thresholds of 0.01, 0.25, and 0.36 for weak, moderate, and strong GOF values, respectively.

With a calculated GOF value of 0.504, it can be concluded that the model exhibits good overall fit.

The results presented in above figures confirm the validity of all dimensions and components in relation to public oversight of public policies with a crowdsourcing approach in public services.

Question 4: What is the validity of the model for public oversight of public policies with a crowdsourcing approach in public services?

Table 2. Results of the Test for Evaluating the Suitability of the Proposed Model for Final Framework Development

Component	Mean Difference	Standard Deviation	t	Df	Sig
Adaptability	1.17	0.909	4.96	29	0.000
Comprehensibility	1.23	0.857	5.23	29	0.000
Generalizability	1.13	0.784	4.00	29	0.000
Control	0.76	0.546	5.03	29	0.000

As shown in Table 2, all criteria were validated with means greater than 3 and t-values exceeding 1.96. Consequently, the model's validity is confirmed across all sub-indicators.

4. Discussion and Conclusion

Despite advancements in recent decades regarding "oversight" in policymaking, its significance has only partially been clarified for policy analysts. However, it has yet to achieve its rightful place in policymaking processes. As a result, oversight in policymaking is still referred to as the "missing link" [23]. In the legal, administrative, and managerial structures of the Islamic Republic of Iran, healthcare holds a particularly significant status, serving as a central pillar for health outcomes and fostering hope for life among the populace. Previous studies indicate that oversight in policymaking is a key issue in healthcare policy processes, though research has primarily focused on policy formulation and implementation, with less attention given to public oversight of public policies with a crowdsourcing approach.

For example, Daneshfard (2014) explored how public oversight of public policies is conducted in Iran, proposing a conceptual framework that aligns with the model suggested in this research [4]. Tiglao et al. (2023) highlighted the role of crowdsourcing in public policies [21]. It is posited that managerial behavior influences the type of public oversight of public policies, and this behavior change is affected by various factors that must be investigated. The Ministry of Health and Medical Education, as a key body in training the required workforce and overseeing healthcare facilities, must develop a foundational understanding of public oversight of public policies with a crowdsourcing approach. This is essential for effective oversight to control and prevent unexpected events. Numerous models and theories have been proposed to explain public oversight of public policies, yet most lack comprehensiveness. Therefore, to develop a model for public oversight of public policies with a crowdsourcing approach in public services, particularly in healthcare, it is crucial to identify

the dimensions and components of public oversight tailored to healthcare needs and aligned with societal goals.

One reason this issue has not been adequately addressed in recent studies is the quantitative nature of much of the research, often rooted in positivist paradigms. Most recent investigations rely on this paradigm, which has become the dominant scientific approach. This study argues that qualitative research involving leading experts in the humanities, health, and sociology can make the concept of public oversight of public policies with a crowdsourcing approach in public services measurable and tangible, ultimately contributing to theory development.

One innovative aspect of this research lies in its methodology for extracting meanings and concepts related to public oversight of public policies with a crowdsourcing approach in public services. While most studies rely on quantitative methods, this research utilized semi-structured interviews with health sector experts and managers. Technologies such as MAXQDA and Excel were employed, showcasing the use of modern tools in theory construction. Additionally, the research identified practical dimensions and components for implementing public oversight of public policies with a crowdsourcing approach in healthcare.

A significant challenge in the humanities, particularly in non-Western societies such as Iran, is the lack of indigenous theories based on the societal management system. One contributing factor is the predominant reliance on quantitative research methods. In contrast, qualitative research that enables an in-depth understanding of phenomena and individuals can facilitate theory development for researchers and the broader academic community. The innovative aspect of this study lies in its qualitative approach and the use of grounded theory, diverging from the trend of quantitative-centric models.

This study recognizes and respects Western findings and models while adapting and supplementing these frameworks to reflect the specific characteristics of oversight in public policies. In the first phase, semi-structured interviews identified 3 dimensions, 11 components, and 53 indicators of public

oversight of public policies with a crowdsourcing approach in public services. In the second phase, structural equation modeling quantified the impact of each dimension and component. The results showed that macro-level oversight (0.758), internal oversight (0.703), and international oversight (0.701) were the most influential dimensions of public oversight of public policies with a crowdsourcing approach in public services, in descending order of impact. These findings align with prior research [15, 21, 24].

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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