

An institutional approach to analyze the multi-level policymaking system of online social networks: a case study of Iran

Leila Namdarian and Hamid Reza Khedmatgozar

Abstract

Purpose – This study aims to elucidate institutional analysis as an effective approach to investigating and designing the multilevel policymaking system of online social networks (OSN) for achieving a participatory model.

Design/methodology/approach – The institutional mapping approach has been used to analyze Iran's OSN multilevel policymaking system. A combination of two matrices, including institutions-institutions and institutions-functions, was used to perform the institutional mapping. Two main steps were taken to draw the mentioned matrices. First, a review of related studies in Iran's OSN policymaking system was conducted and the policy functions mentioned in these studies were identified and categorized using the meta-synthesis. Second, based on analyzing two policy documents of Iran's OSN, institutions and their interactions were identified and policy functions were allocated to institutions.

Findings – Based on the results, the most important policy functions in the current OSN policymaking system in Iran are support, regulatory, monitoring and evaluation, business environment development, culture building and promotion, organizing licenses and permissions, policymaking and legislation. Also, the results show that there are shortcomings in this system, some of the most important of which are lack of transparency in regulatory, little work in culture building and promotion, neglect of the training of specialized human resources and research and development, slow development of the business environment and neglecting the role of nongovernmental organizations in policymaking.

Originality/value – By examining and analyzing how different institutions operate within a multilevel policymaking system, the policymaking process and its overall effectiveness can be enhanced. This analysis helps identify any inconsistencies, overlaps or conflicts in the roles and policies of these institutions, leading to a better understanding of how a multilevel policymaking system is organized.

Keywords Online social networks (OSN), Institutional analysis, Institutional mapping, Policymaking, Iran

Paper type Research paper

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1. Introduction

Amid the proliferation of information and communication technologies (ICT), such as the internet and mobile phones, a distinct form of Web2 technology has emerged known as online social networks (OSN). This technological advancement serves as a platform facilitating both individual and group social interactions through the dynamic exchange of multimedia content (Sankar and Bouchard, 2009; Anderson and Wolff, 2010). OSN, by offering users a designated communication space, enables the creation of user accounts, friend listings, real-time messaging, comment writing and the sharing of diverse content formats, including text, photos, audio and videos (Boyd and Ellison, 2007; Farmer et al., 2009; Zahari and Pardede, 2012; Nobari et al., 2021).

These platforms, often referred to as channel platforms, play a pivotal role in allowing users to disseminate public messages to broad audiences (Nobari et al., 2021). OSN users

encompass a diverse spectrum, ranging from individual users seeking knowledge and entertainment to businesses using these platforms for marketing and customer relationship management. Additionally, governments leverage OSN predominantly for election campaigns and political engagement (Kim *et al.*, 2010). The multifaceted utility of OSN underscores its significance across various sectors, shaping new modes of communication, interaction and information dissemination in contemporary society.

OSN, including platforms like Facebook, Twitter, Google Plus, LinkedIn, YouTube and Instagram, serve as the pivotal arenas for organizing information and knowledge, exerting a profound impact on the future personal, social and business interactions of individuals. This influence has not gone unnoticed, sparking significant investment opportunities and doubling the imperative to comprehend and scrutinize their societal usage. Consequently, numerous studies and research endeavors have been conducted, exploring diverse applications of OSNs.

These investigations delve into the multifaceted roles of OSN, spanning income generation and value creation for users (Enders *et al.*, 2008), contributions to distance education (Usluel and Mazman, 2009), impact on higher education (Grosseck, 2009) and involvement in knowledge acquisition projects (Ras and Rech, 2009), among other domains. Beyond their applications, OSN has acquired such extensive influence that it has been instrumental in shaping collaborative communities, contributing to shifts in societal attitudes (Castells, 1996). These collaborative communities, emerging through OSN, elevate communication and the sharing of both material and nonmaterial capital. They play a crucial role in forging power relations and social capital, creating patterns and models of relationships among various actors – elements rich for analysis (Wasserman and Faust, 1994; Wellman and Berkowitz, 1988).

In contemporary times, OSN transcends its role merely as a source of entertainment; it has evolved into a pivotal platform for the sharing and dissemination of information. However, this transformative role is not without its challenges, particularly in the realms of information sharing and dissemination within OSN. The unfettered sharing of personal information by users raises significant concerns regarding data privacy and security (Jin, 2016). Concurrently, the proliferation of fake news, characterized by intentionally false or deceptive information disseminated through OSN, poses a substantial challenge to the integrity of information on these platforms (Himma-Kadakas, 2017; Tufekci, 2018).

OSN is progressively assuming a central role as a channel for daily news consumption, facilitating the sharing of values and interests and providing platforms for the formation and expression of political, social and religious opinions. However, this shift is accompanied by the perilous phenomenon known as the “filter bubble” (Grevet *et al.*, 2014). This refers to the selective consumption of information that aligns with individual beliefs, fostering an environment where conflicting perspectives are condemned. Additionally, OSNs contribute to “online homophily,” a sociological concept suggesting that people with similar demographic or political profiles are drawn to each other and tend to act in similar ways. Originating in 1954, the concept of homophily has seamlessly integrated into the realm of media technologies, manifesting as online homophily, wherein users with akin views predominantly engage with content and sources that reinforce their established perspectives (Khanam *et al.*, 2023).

In the face of inherent risks and consequences, the allure of OSN is undeniable, with its user base rapidly expanding globally and Iran is no exception. According to the latest survey conducted by the Iranian Students Polling Agency in 2022, involving citizens aged 18 and above, residing in urban and rural areas, a staggering 78.5% of Iran's population engages with at least one messenger or social network. Given this widespread usage, policymakers are tasked with formulating judicious policies in the OSN domain to positively influence public opinion, mitigate ideological polarization, safeguard the privacy and personal data,

curate OSN content and combat cybercrime (Moro Visconti, 2020; Wasserman and Faust, 1994), and enhance the business environment (Allen, 2008), design and user experience of OSNs (Kim *et al.*, 2010).

To address these imperatives, a participatory policymaking system characterized by a coordinated structure and a well-defined division of responsibilities among institutions is crucial (Larrue, 2021). Surprisingly, there is a dearth of studies focusing on the design of participatory models for the OSN policymaking system. This study uses the multilevel governance model of online social platforms, referred to as the OSN multilevel policymaking system model, as a framework for describing the OSN policymaking system (Halevy *et al.*, 2022). Policymakers bear the responsibility of designing this multilevel system, emphasizing a rational and evidence-based approach (Kyza *et al.*, 2020). The pursuit of evidence-based policymaking, grounded in scientific methods, is vital, presenting a departure from opinion-based policymaking. This approach considered a subset of policymaking analysis, pledges to use superior analytical techniques to enhance or reform policymaking systems (Howlett, 2009; Head, 2010; Makridakis, 2017). The institutional analysis approach stands out as one such analytical tool within evidence-based policymaking, offering the necessary insights into policymaking structures and systems (Heikkila and Andersson, 2018).

In this context, gaining insights into the OSN multilevel policymaking system and subjecting it to scrutiny through an institutional analysis approach yields a comprehensive understanding of its challenges across institutional, functional and communication dimensions. This analytical approach catalyzes refining the design of institutional arrangements within the OSN multilevel policymaking system. The present research, conducted within the Iranian context, endeavors to dissect Iran's OSN multilevel policymaking system using the institutional analysis approach.

The significance of this analysis is two-fold: first, it introduces the multilevel policymaking system as a collaborative and coordinated model for OSN policymaking; second, it underscores the efficacy of using institutional analysis in scrutinizing the OSN policymaking system. Furthermore, the analysis of Iran's OSN policymaking system through the institutional analysis approach offers a snapshot of the current state of this system to Iranian policymakers.

To fulfill the objectives of this research, the article is structured as follows: Section 2 encompasses a review of the research literature, followed by an explanation of the theoretical framework in Section 3. The research methodology is elucidated in Section 4, while Section 5 delves into the research findings. Finally, Section 6 unfolds the discussion and implications derived from the study.

2. Literature review

In contemporary society, the widespread accessibility of OSN has facilitated quick and easy public engagement. As a result, a substantial amount of time is dedicated to OSN usage, with millions of users actively participating on platforms like Facebook, Myspace and Orkut daily (Yeung *et al.*, 2023). Furthermore, OSN has gained significant relevance in various domains, such as business, strategic communication and electronic government (Van Dijck, 2020). The continuous expansion and evolution of OSN across diverse sectors have attracted a multitude of stakeholders to this realm, bringing about varied political and social consequences in societies.

Stimulating citizen participation, OSN has expanded citizens' influence on policy decisions and the policymaking system. Through citizen feedback on OSN, policymakers gain valuable insights into the strengths and weaknesses of proposed policies and initiatives before implementation, thereby mitigating the risk of policy failure. In the contemporary landscape, government institutions actively monitor OSN to comprehend complex issues and gauge citizen sentiments, leading to the emergence of crowdsourcing mechanisms for policy formulation (Loukis *et al.*, 2017; Androutsopoulou and Charalabidis, 2018).

OSN forge horizontal connections among actors, shaping a network society in cyberspace that generates “high-power flows,” surpassing official power channels. Numerous studies underscore the pivotal role of OSN in crisis news coverage, the policymaking process and the establishment of policy agendas (Babu *et al.*, 2017; Fiaz and Qureshi, 2018).

Simultaneously, the role of OSN in organizing the political and social disparities within societies is increasingly evident (Dong *et al.*, 2017; El tantawi *et al.*, 2018). Through OSN, individuals are subject to the influence of news waves, often generated by rival political factions, both domestically and internationally. Actions taken by individuals in this online environment can result in powerful currents, creating fertile ground for political surprises and policy developments within governments (Shirky, 2011). The globalization of OSN and their contribution to the production of critical concepts, dissemination of fake news and jeopardizing of the popularity of individuals, especially in election campaigns, affect the legitimacy and effectiveness of governments (Pedrazzi and Oehmer, 2020; Van Dijck, 2020). Consequently, addressing challenges related to the legitimacy crisis and managing opposition has become a significant concern for political systems regarding OSN (Tambini, 2018).

Addressing these violations, collectively termed the challenge of preserving integrity in OSN, has become a paramount priority for societies. The formulation of “policies” emerges as a crucial aspect in tackling the integrity preservation problem. Determining policies regarding acceptable content and behavior on OSN proves to be a contentious terrain, requiring a delicate balance between upholding free expression and removing objectionable content. Moreover, these policies must exhibit sensitivity to diverse cultures and political climates worldwide (Halevy *et al.*, 2022).

Consequently, the significance of OSN policymaking has escalated, capturing the attention of policymakers across different nations. In developing countries, the OSN policymaking system aligns with objectives aimed at creating conditions conducive to managing and directing the actions of social groups. Iran is among these nations, and its OSN policies encompass measures such as exclusion, control and monitoring, with content filtering standing out as an illustrative example. In contrast, developed countries adopt a distinct policymaking approach where, instead of direct filtering, they establish a framework for the indirect control of the communication space of citizen groups (Castells, 2015).

Within OSN, users assume the dual role of information consumers and producers simultaneously, wielding the potential to either support or impede activism (Pawley, 2003). In this context, formal structures and top-down approaches will have less power to control the hidden aspects of citizens’ social actions in OSN (Yan, 2021). Consequently, resorting to stringent and extreme controls to address the phenomena and challenges arising from cyberspace, especially OSN, proves to be neither logical nor practical. In the postmodern era and the contemporary landscape of competitiveness, OSN policies grounded in persuasion and active engagement of stakeholders exhibit greater efficacy and feasibility (George *et al.*, 1994; Hutchins and Mikosza, 2010).

Therefore, to align with the overarching policymaking goal of serving the public interest in society (Freedman, 2008), it becomes increasingly imperative to embrace participatory and democratic approaches within the OSN policymaking system (Simonofski *et al.*, 2021).

Participatory policymaking finds support in stakeholder theory, which, guided by the principle of affected interests, advocates for a participatory policymaking model. This model challenges positivist perspectives that result in top-down government regulations. Unlike traditional approaches, this participatory model embraces collaborative processes that incorporate diverse stakeholder perspectives, moving beyond the influence of elites. The outcome of such inclusive decision-making processes is the establishment of higher levels of legitimacy within policymaking systems (Kyza *et al.*, 2020).

Moreover, stakeholders exhibit varying competencies – such as independence, representativeness, expertise and operational capacity – at different stages of the policymaking process, spanning from agenda-setting and negotiations to policy implementation and monitoring. For instance, nongovernmental organizations (NGOs) demonstrate high levels of independence and representativeness, advocating for stringent standards, yet may lack the operational capacity for implementation and require collaboration with businesses. Conversely, companies, with their expertise and operational prowess, are profit-driven and may not consistently align with public interests due to their relative lack of independence and representativeness. Therefore, the sustained success of the OSN policymaking system hinges on forging a well-balanced combination of stakeholders' competencies (Gorwa, 2019).

3. Theoretical framework

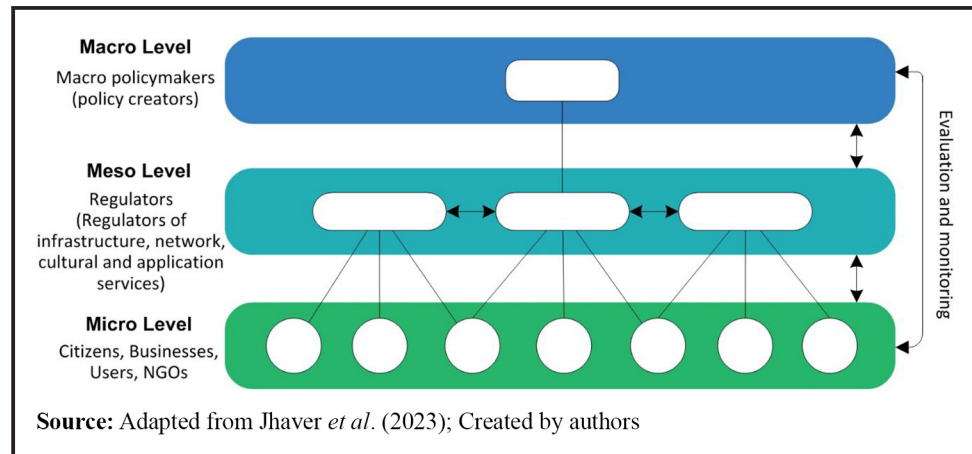
To maintain a democratic and open space for OSN, various stakeholders from government institutions, companies, NGOs and citizens should participate in policymaking (Van Dijk, 2020). Participatory policymaking (cooperation between the government and the people) is based on an institutional approach (Vargas-Hernández, 2023). Compromise in line with the public interests, improvement in public service delivery and public management are the important considerations of the institutional approach in policymaking (Khawaja and Khalid, 2022). The institutional approach is not only used by the schools of neo-institutionalism but also originates from the classical concepts of old institutionalism. While old institutionalism considers institutions from a legalistic perspective as a set of formal rules, neo-institutionalism uses a broader concept that includes formal and informal institutions, which also includes the organizational identity of institutions (Sager and Gofen, 2022).

The study of the relationship between institutions and policies has been the focus of policymaking researchers for a long time. According to Dye (2013), policies are adopted and implemented by institutions and any change in them causes changes in policies as well. Peters (2019) stated that institutions distribute decision-making power and are, therefore, powerful determinants of the policymaking process. Institutions determine the behavior of individuals and groups. Policies are also influenced by stable patterns of individual and group behavior. Therefore, policymaking is the result and the consequence of interactions among different Institutions (Ostrom, 2011; Imperial, 2021). So, the effective management of institutional arrangements in a policymaking system ultimately leads to the efficiency of the government's actions (Sager and Gofen, 2022). Furthermore, institutions play a key role in multilevel governance, which is a form of interaction that depends on the degree of federalism and decentralization of a system (Sager and Gofen, 2022).

Multilevel governance means cooperation and coordination between different levels of government and institutions, which seeks to manage complex problems and challenges of social systems, increase transparency and accountability and facilitate the policymaking process. This concept promotes the idea of participatory decision-making and policymaking (Piattoni, 2009). Therefore, in this study, the concept of multilevel governance is used to propose an effective model of OSN participatory policymaking. Based on the multilevel governance model of (Jhaver *et al.*, 2023), which is introduced for online social platforms, the policymaking system of OSN can be considered a multilevel system. In this system, decision-making authority is distributed vertically across multiple levels of jurisdiction and horizontally over many units (Figure 1).

Figure 1 shows a view of OSN multilevel policymaking system including macro, meso and micro levels and actors at each level. Micro level actors (indicated by circles) are governed by one or more meso level actors. Each actor at the meso level is also governed by the macro level. The features of the OSN multilevel policymaking system are as follows (Jhaver *et al.*, 2023):

Figure 1 Multilevel policymaking system for OSN



Overlap of Jurisdiction: it considers the degree of overlap between the meso and macro levels according to their areas of responsibility, which causes the redundancy of their governance actions and this is an important feature of polycentricity. If this overlap of jurisdictions is high in a policymaking system, it is referred to as a “highly federalized” policymaking system. In policymaking systems with little overlap, the macro level usually chooses to take few actions compared to the meso level and the meso level does not intervene in macro level evaluation and monitoring responsibilities:

- Cross-cutting membership: this feature shows that two actors at the meso level can manage one actor at the micro level.
- Degree of autonomy from above or below: this feature indicates the extent to which meso level actors can act independently or be accountable to another level.
- Degree of authority over levels above or below: it refers to the ability of meso level actors to regulate and sanction. Meso levels usually have significant authority over micro levels. Meso levels can also have formal authority over higher levels.
- Support by levels above or below: it refers to the extent to which the meso level is supported by the top or bottom level through various methods such as receiving technical assistance or access to resources. Relevant indicators of higher-level support can include receiving funding, human staff support or special access to developer tools from the higher level. Furthermore, the level of bottom-up support is determined by the extent to which the meso level has the means or culture to support the voluntary contributions of lower-level actors.

The OSN multilevel policymaking system requires the identification of all its components and the examination of their relationships and interactions. For this purpose, it is necessary to first list the functions and activities necessary for that system. Second, identify the active actors in each functional area, and third, draw the connections between them (Capron and Cincera, 1999). The analytical approach that provides such an understanding of the institutional arrangements of a policymaking system is called institutional mapping (Malerba, 2002). In this study, the institutional mapping approach, which has a systemic routine while taking the institutional view, is proposed for the analysis and design of the OSN multilevel policymaking system. By using an institutional mapping approach, policy programs’ inconsistencies, overlaps and conflicts can be observed (Aligica, 2006; Cooke and Morgan, 1995; Mohamadi *et al.*, 2010). Institutional mapping is a useful tool for policy learning that helps to coordinate policies and increase transparency (Busscher *et al.*, 2022).

4. Methodology

The institutional mapping approach has been used to achieve the purpose of the research. The literature has mentioned five analytical matrices for institutional mapping. First, it is a matrix that the organization for economic co-operation and development (OECD) has used in studies of the innovation system of member countries such as Japan. In this matrix, institutions are described through their functions in the innovation system and depicted in a plan (institutions-functions matrix) (OECD, 1999). The four other matrices (objectives-instruments, institutions-instruments, institutions-institutions and institutions-objectives) were developed by Bikar *et al.* (2006).

In general, it can be said that the analytical matrices for institutional mapping are as follows:

- *Institutions-functions matrix*: this matrix shows which institutions perform which functions in a system;
- *Objectives-instruments matrix*: in this matrix, the connections between the objectives of a system and the policy instruments used to realize them are specified;
- *Institutions-instruments matrix*: this matrix establishes a relationship between the institutions of a system and the policy instruments they have at their disposal, such as budgets and incentives;
- *Institutions-institutions matrix*: this matrix shows the relations and policy interactions of the institutions of a system; and
- *Institutions-objectives matrix*: this matrix establishes a relationship between the institutions of a system and their important objectives.

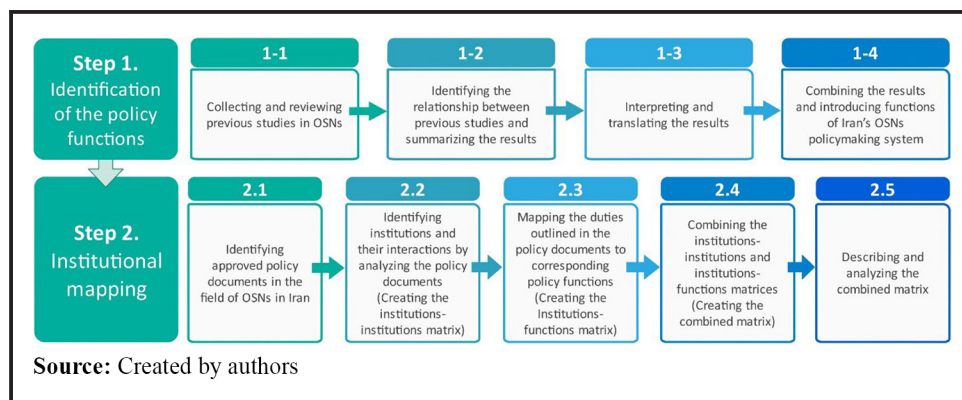
This study has used the combination of two matrices of institutions-functions and institutions-institutions to analyze Iran's OSN multilevel policymaking system from the perspective of functional and institutional interactions. The research process is depicted in Figure 2.

The details of each of Steps 1 and 2, specified in Figure 2, are as follows:

- Step#1. Identification of functions of Iran's OSN policymaking system.

The first step in the institutional mapping of Iran's OSN policymaking system is to recognize its policy functions. To understand these policy functions, first, an attempt was made to review the related studies that have been conducted with the institutional mapping approach in OSN and its policymaking in Iran. Then, using the qualitative method of meta-synthesis, the policy functions mentioned in these studies were identified and categorized.

Figure 2 Research process



Meta-synthesis is the systematic combination of interpretations of the original data of selected studies to discover new and more comprehensive themes and metaphors. This method improves the current knowledge and creates a broad view of the issues. Meta-synthesis requires that the researcher conduct a detailed and in-depth review of the findings of related qualitative research and combine them (Zimmer, 2006). One of the common methods of meta-synthesis is the seven-step method “Noblit and Hare” (1988) including Steps 1-starting, 2-deciding on the issues related to the study, 3-reading the studies, 4-determining the relationship of the studies with each other, 5-translation and conversion of studies to each other, 6-combination of translations and 7-expressing, explaining, compiling and combining. In the current research, the mentioned seven steps were implemented in the form of four sub-steps:

1. Collecting and reviewing previous studies in OSN. Based on the search conducted in this study, no research has been found in Iran about the institutional mapping of Iran’s OSN policymaking system. Therefore, in this study, an effort was made to discover the policy functions of institutions in Iran’s OSN policymaking system based on related studies in the field of institutional mapping and policymaking of Iran’s cyberspace content. OSN can be considered as one of the content containers and channels in cyberspace (Lambach, 2020; Khedmatgozar *et al.*, 2018). For this reason, studies related to the policymaking of Iran’s cyberspace content have also been examined in this study. The number of studies found and reviewed is 15.
2. Identifying the relationship between previous studies and summarizing the results;
3. Interpreting and translating the results; and
4. Combining the results and introducing functions of Iran’s OSN policymaking system.
5. Step#2. Institutional mapping of Iran’s OSN policymaking system.

Several pivotal substeps were encompassed by the process. Initially, the identification of official policy documents about OSN in Iran was delved into. The list of these policy documents is presented in [Table 1](#).

In the subsequent phase, information about institutions and their specified duties was meticulously extracted from the policy documents. A combined approach was used, and both the institutions-institutions matrix and the institutions-functions matrix were used for institutional mapping. The interconnections among institutions involved in shaping the OSN policymaking landscape were unraveled by the former, while the functions of each institution within this dynamic system were precisely outlined by the latter. To streamline analyses of institutions-functions relationships, the duties assigned to each institution in the policy documents were systematically aligned with their respective policy functions. In the concluding substep, a comprehensive description and analysis were undergone by the amalgamated matrix. Instances of function conflicts, overlaps and a proliferation of institutions associated with each OSN policy function were unearthed by this method.

To validate the first and second steps and all their substeps, the researcher triangulation method has been used, in such a way that the corresponding step is carried out by two researchers separately and then the results are shared in the presence of an external observer and finalized by the consensus of all of them.

Table 1 Iran’s OSN policy documents

Code	Name	Provider institution	Approval date
D1	Policies and organizational measures in social messengers	Supreme Council of Cyberspace, 2017	3.6.2017
D2	Instructions for organizing bots/robots in cyberspace	Supreme Council of Cyberspace, 2019	2.9.2019

Source: Created by authors

5. Findings

5.1 Policy functions of Iran's online social network policymaking system

The policy functions of Iran's OSN policymaking system, which was extracted from the first step of the study, can be seen in [Table 2](#). To facilitate future analysis, each of the policy functions mentioned in different studies has been assigned a code in the form of F_{ij} (i: policy function number and j: reference number). As [Table 2](#) shows, the policy functions mentioned in previous studies have similarities and differences with each other. In some cases, policy functions refer to the same concept in different studies, but different terms have been used for them. In this section, based on the interpretation of policy functions in different studies, an attempt has been made to categorize those that refer to relatively similar concepts in equivalent classes. As this table shows, policy functions are categorized into nine equivalent classes.

As [Table 2](#) shows, in the field of OSN, the identified policy functions can be defined as follows:

- *Polymaking*: refers to prioritizing OSN issues and topics, guiding and targeting, planning and formulating OSN policies in the country and their coordination and integration.
- *Development and strengthening of education and research*: refers to the role of policymakers in education and research and consulting for training human resources and using experts in the field of OSN.
- *Culture building and promotion*: refers to the role of policymakers in the cultivation and public education and organizing international interactions in the use of OSN.
- *Business environment development*: refers to the role of policymakers in developing and strengthening innovation, strengthening the value chain and business model, controlling supply and demand, setting tariffs, improving the OSN business environment and supporting the production of products in the OSN area.
- *Organizing licenses and permissions*: refers to the role of policymakers in preparing and developing standards and improving licensing practices to improve the technical infrastructure, content quality and security of OSN.
- *Monitoring and evaluation*: refers to the role of policymakers in monitoring content in OSN, developing and formulating metrics and criteria for measuring content, evaluating and monitoring OSN equipment and services and dealing with crimes.
- *Legislation*: refers to the role of policymakers in formulating, amending and revising laws and protecting intellectual property in the field of OSN.
- *Support*: It is a type of facilitation and refers to the role of policymakers in financing and investing, supporting local OSN, supporting private sector investment, supporting infrastructure services and protecting the rights of content producers and users in OSN.
- *Regulatory*: refers to the formulation of regulations and guidelines and the settlement of disputes and claims between institutions in the field of OSN. The main task of the regulatory institutions that have a commission structure includes identifying, clarifying and communicating the scope of activities and powers and demarcation between the institutions, revising and modifying them as necessary. The general principles of regulatory are determined based on the policies and laws of the country.

5.2 Institutional mapping results

[Table 3](#) shows the information related to the institutional analysis of document D1 (Policies and Organizational Measures in Social Messengers).

Table 2 Policy functions extracted from meta-synthesis

R	References	Policy functions	1. policymaking of education and research	2. Development and strengthening of education and research	3. Culture building and promotion	4. Business environment development
1	OECD (2006)	(F11) Developing, strengthening and encouraging innovation and technology; (F21) Strengthening the value chain and business model (strengthening the private sector); (F31) Improving the technical infrastructure; (F41) Monitoring and evaluation; (F51) Providing information and content to the public sector				(F11) (F21)
2	Bagheri (2011)	(F12) Organization of licenses; (F22) Monitoring and evaluation; (F32) Regulatory; (F42) Development of business environment; (F52) Development and improvement of technical infrastructure; (F62) Preparation and formulation of standards				(F42)
3	Tarbiat Modares University (2013)	(F13) Policymaking; (F23) Formal and informal knowledge flow; (F33) Education; (F43) Financing	(F13)	(F33)		
4	IIRB (2014)	(F14) Content monitoring; (F24) Support of native content; (F34) Support of content ownership; (F44) Tariff setting; (F54) Support of customer rights				(F44)
5	Aghaei <i>et al.</i> (2014)	(F15) Training; (F25) Consulting; (F35) Planning; (F45) Monitoring and Evaluation; (F55) Supporting Infrastructure Services; (F65) Financing	(F35)	(F15) (F25)		
6	Avani <i>et al.</i> (2014)	(F16) Regulating relationships in decision and action	(F16)			
7	Supreme Council of Cyberspace (2015)	(F17) Education and research; (F27) Culture building and general education; (F37) Business environment development; (F47) Organizing licenses; (F57) Support; (F67) Supervision; (F77) Amendment and correction of laws		(F17)	(F27)	(F37)
8	Avani <i>et al.</i> (2015)	(F18) Prioritization of issues and topics; (F28) Follow-up and monitoring of executive performance; (F38) Political research and reporting; (F48) Policymaking; (F58) Monitoring and follow-up; (F68) Implementation Policies	(F18) (F48) (F68)	(F38)		
9	National Virtual Space Center (2016)	(F19) Policymaking; (F29) Regulatory; (F39) Evaluation and Monitoring	(F19)			
10	Jamshidy borujerdy <i>et al.</i> (2018)	(F1,10) Regulatory				
11	Qazvinouri <i>et al.</i> (2018)	(F1,11) Guidance and targeting; (F2,11) Coordination and integration; (F3,11) Formulation of rules and regulations; (F4,11) Evaluation and monitoring; (F5,11) Networking; (F6,11) Intellectual property	(F1,11) (F2,11) (F5,11)			
12	Hosseini <i>et al.</i> (2019)	(F1,12) Policymaking; (F2,12) Monitoring and evaluation; (F3,12) Financing and investment development; (F4,12) Consulting; (F5,12) Education; (F6,12) Research; (F7,12) Infrastructure services; (F8,12) Organizing licenses; (F9,12) Supply and demand control; (F10,12) Business environment development	(F1,12)	(F4,12) (F5,12) (F6,12)		(F9,12) (F10,12)
13	Eslami and Tajiri (2020)	(F1,13) Policymaking; (F2,13) Planning; (F3,13) Culture building; (F4,13) Support for education and research; (F5,13) Evaluation; (F6,13) Monitoring; (F7,13) Promotion; (F8,13) Regulatory; (F9,13) Support; (F10,13) Organizing the production and supply process; (F11,13) Facilitation and legal and spiritual support	(F1,13) (F2,13)	(F4,13)	(F3,13) (F7,13)	(F10,13)
14	Supreme Council of Cyberspace (2020)	(F1,14) Regulatory; (F2,14) Support for private sector investment; (F3,14) Evaluation and monitoring; (F4,14) Improvement of the business environment; (F5,14) Provision of infrastructure and technical services; (F6,14) Establishing and maintaining security; (F7,14) Supporting product production; (F8,14) Organizing licenses and permits; (F9,14) Organizing international interactions; (F10,14) Activating cyber diplomacy; (F11,14) Support from the development of local equipment and infrastructure; (F12,14) Development of guidelines; (F13,14) Policymaking; (F14,14) Measurement and evaluation of equipment and services; (F15,14) Financing and budget allocation; (F16,14) Dealing with crimes	(F13,14)		(F9,14) (F10,14)	(F4,14) (F7,14)
15	Salavatani <i>et al.</i> (2020)	(F1,15) Financial support of the government; (F2,15) Facilitation of relations between actors; (F3,15) Training of human resources; (F4,15) Formulation of ideology-oriented laws; (F5,15) Use of experts for indigenous design; (F6,15) Economic consultation; (F7,15) Legal protections		(F3,15) (F5,15)		

Source: Created by authors

(continued)

Table 2						
R	References	5. Organizing licenses and permissions	6. Monitoring and evaluation	7. Legislation	8. Support	9. Regulatory
1	OECD (2006)		(F41)		(F51) (F31)	
2	Bagheri (2011)		(F22)		(F52)	(F32)
3	Tarbiat Modares University (2013)				(F23) (F43)	
4	IRIB (2014)	(F12) (F62)	(F14)		(F24) (F34) (F54)	
5	Aghaei <i>et al.</i> (2014)		(F45)		(F55) (F65)	
6	Alvani <i>et al.</i> (2014)					
7	Supreme Council of Cyberspace (2015)		(F67)	(F77)	(F57)	
8	Alvani <i>et al.</i> (2015)	(F47)	(F28) (F58)			
9	National Virtual Space Center (2016)		(F39)			(F29)
10	Jamshidy borujerdy <i>et al.</i> (2018)		(F4, 11)	(F3, 11) (F6, 11)		(F13)
11	Qazinoori <i>et al.</i> (2018)		(F2, 12)		(F3, 12) (F7, 12)	(F3, 11)
12	Hosseini <i>et al.</i> (2019)	(F8, 12)	(F5, 13) (F6, 13)		(F9, 13) (F11, 13)	(F8, 13)
13	Eslami and Taji (2020)		(F3, 14) (F14, 14) (F16, 14)		(F2, 14) (F5, 14) (F11, 14) (F15, 14)	(F1, 14) (F12, 14)
14	Supreme Council of Cyberspace (2020)	(F6, 14) (F8, 14)		(F4, 15)	(F1, 15) (F2, 15) (F6, 15) (F7, 15)	
15	Salavatian <i>et al.</i> (2020)					

Source: Created by authors

The results of the institutional analysis of document D2 (Instructions for organizing bots/ robots in cyberspace) are also presented in [Table 4](#).

5.3 Description of Iran's online social network policymaking system

As shown in [Table 5](#), various institutions play a role in Iran's OSN policymaking system. Based on this table, the Supreme Council of Cyberspace, as the main custodian of the policymaking of OSN in Iran, has compiled and approved the country's OSN policymaking documents. In addition, the Supreme Council of Cyberspace is one of the special legislative institutions in Iran's legal system, which was established through the decree of the leadership and based on responding to the daily needs of society regarding proper interaction with cyberspace.

Based on the institutional mapping done on policy documents in the OSN policymaking system, the results show:

- The most considered policy functions are “support” (48%), “regulatory” (13%) and “monitoring and evaluation” (13%).
- The institutions for which the most policy functions are considered are the Ministry of ICT (6), and the Ministry of Culture and Islamic Guidance (5).
- The policy function of “developing and strengthening education and research” has not been assigned to any institution.
- Institutions that have the policy function of “business environment development” include the Ministry of ICT, and the Ministry of Industry, Mining and Trade.
- Institutions that have the most “support” policy function are the Ministry of ICT, and Ministry of Culture and Islamic Guidance.
- IRIB and the management center of seminaries are in charge of the function of “culture building and promotion.”
- The Ministry of ICT, the Ministry of Culture and Islamic Guidance, the Ministry of Industry, Mining and Trade and the National Cyber Space Center are responsible for the function of monitoring and evaluation.
- The Ministry of Culture and Islamic Guidance has the most regulatory policy function. However, other institutions such as the Ministry of ICT, the Ministry of Industry, Mines and Trade and the Judiciary play a role in regulatory.

In summary, based on these results, the institutions of the OSN policymaking system can be shown in the form of a three-level pattern including the macro policymaking level, the meso policymaking level and the micro policymaking level as shown in [Figure 3](#):

- Macro policymaking level: these are the institutions that formulate, approve and communicate OSN's macro policies and are in charge of OSN's legislation. At this level, the Supreme Council of Cyber Space is in charge of OSN's macro policies in Iran.
- Meso policymaking level: those institutions are in charge of management, planning and regulatory based on OSN policies. Examples of these institutions are the Ministry of ICT, Ministry of Culture and Islamic Guidance, Ministry of Interior, Ministry of Science, Research and Technology, Ministry of Industry, Mining and Trade and Ministry of Education.
- Micro level: those institutions that implement OSN policies, laws and programs and are the executive body of OSN regulations. Examples of these stakeholders are the Islamic Development Organization and the Computer Research Center of Islamic Sciences.

Table 3 Institutional analysis of document D1 (policies and organizational measures in social messengers)

<i>Macro level actors</i>	<i>Meso level actors</i>	<i>Micro level actors</i>	<i>Assigned duties</i>	<i>Policy functions</i>
Supreme Council of Cyberspace	Ministry of Information and Communications Technology (ICT)	–	1- Management and organization of social messengers through 1–1-Preparing and compiling conditions for granting a license, 1–2- Monitoring the activity of license holders, 1–3- Creating a single window for issuing licenses, 2- Infrastructural, technical and facility support and providing information about internal social messengers 3- publishing a list of social messengers with more than one million active users, 4- supporting content based on Islamic-Iranian culture	1- Organizing licenses and permissions 2- Support 3- Business environment development
	Ministry of Culture and Islamic Guidance	–	1- Preparation and compilation of the rules and conditions of publishing content, 2- Monitoring the publishing of content, 3- Supporting the production of content based on Islamic-Iranian culture Supporting the production of content based on Islamic-Iranian culture	1- Regulatory 2- Support
	Ministry of Science, Research and Technology Ministry of Education	–	Supporting the production of content based on Islamic-Iranian culture	Support
	Management Center of Iranian Seminaries	–	Supporting the production of content based on Islamic-Iranian culture 1- Facing violations, anomalies and cultural invasion, 2- Supporting the production of content based on Islamic-Iranian culture Supporting the production of content based on Islamic-Iranian culture	Support 1- Culture building and promotion 2- Support Support
	Islamic Development Organization Computer Research Center of Islamic Sciences	–	Supporting the production of content based on Islamic-Iranian culture Supporting the production of content based on Islamic-Iranian culture	Support Support
	Presidential Deputy for Science and Technology Islamic Republic of Iran Broadcasting	–	1- Education and development of awareness and skills in the use of internal social messengers, 2- Support for the production of content based on Islamic-Iranian culture Compilation and implementation of regulations for legal protection of the business continuity of internal social messengers	1- Culture building and promotion 2- Support Regulatory
	Judiciary	–		Support
		–		(continued)

Table 3

<i>Macro level actors</i>	<i>Meso level actors</i>	<i>Micro level actors</i>	<i>Assigned duties</i>	<i>Policy functions</i>
	Central Bank of the I.R Iran		Making it possible to pay online for businesses based on internal social messengers	
	National Cyberspace Center	–	Examining the discrepancies of the terms and conditions prepared based on the policies and approvals of the Supreme Council of Cyberspace	Monitoring and evaluation
	Ministry of Sport and Youth	–	Supporting the production of content based on Islamic-Iranian culture	Support
	Vice Presidency of Women and Family Affairs	–	Supporting the production of content based on Islamic-Iranian culture	Support

Source: Created by authors

Table 4 Institutional analysis of document D2 (instructions for organizing bots/robots in cyberspace)

<i>Macro level actors</i>	<i>Meso level actors</i>	<i>Micro level actors</i>	<i>Assigned duties</i>	<i>Policy functions</i>
Supreme Council of Cyberspace	Ministry of Information and Communications Technology (ICT)	–	1- First type bots (bots that publish content) 1-1- Mass SMS publisher ■ Compilation of rules for monitoring and evaluating the performance of operators ■ Publication of operators' performance report ■ Announcing the penalties for violating the established requirements ■ Providing online services ■ Publication of the declaration of responsibility and accountability 1-2- Mass e-mail publisher ■ Evaluating the performance of e-mail service providers ■ Drafting and announcing the responsibility and accountability mechanism 2- Second type bots (content collecting bots) 2-1- Crawlers of different platforms ■ Compilation and publication of technical specifications for foreign crawlers in the country's internet cloud ■ Compilation and notification of instructions for the organization of internal crawlers ■ Providing periodic reports on the performance of platform crawlers 3- Third type bots (bots providing noncontent services) ■ Announcing prohibitions and rules against the production and use of bots that operate without the consent of users in the field of forced membership.	1- Regulatory 2- Support 3- Monitoring and evaluation
	Ministry of Culture and Islamic Guidance	–	1- First type bots (bots that publish content) 1-3- Mass content publisher in social messengers ■ Compilation and announcement of the mechanism of recognition and registration of bots ■ Compilation of rules related to banning the use of anonymizing bots to publish content ■ Platform performance evaluation ■ Compilation and announcement of rules related to the responsibility of users, developers, businesses and platforms in case of crimes ■ Developing a mechanism to prevent foreign institutions or hostile groups from influencing public opinion by using bots ■ Determining and announcing the platforms' incentives and punitive measures	1- Regulation 2- Support 3- Monitoring and evaluation

(continued)

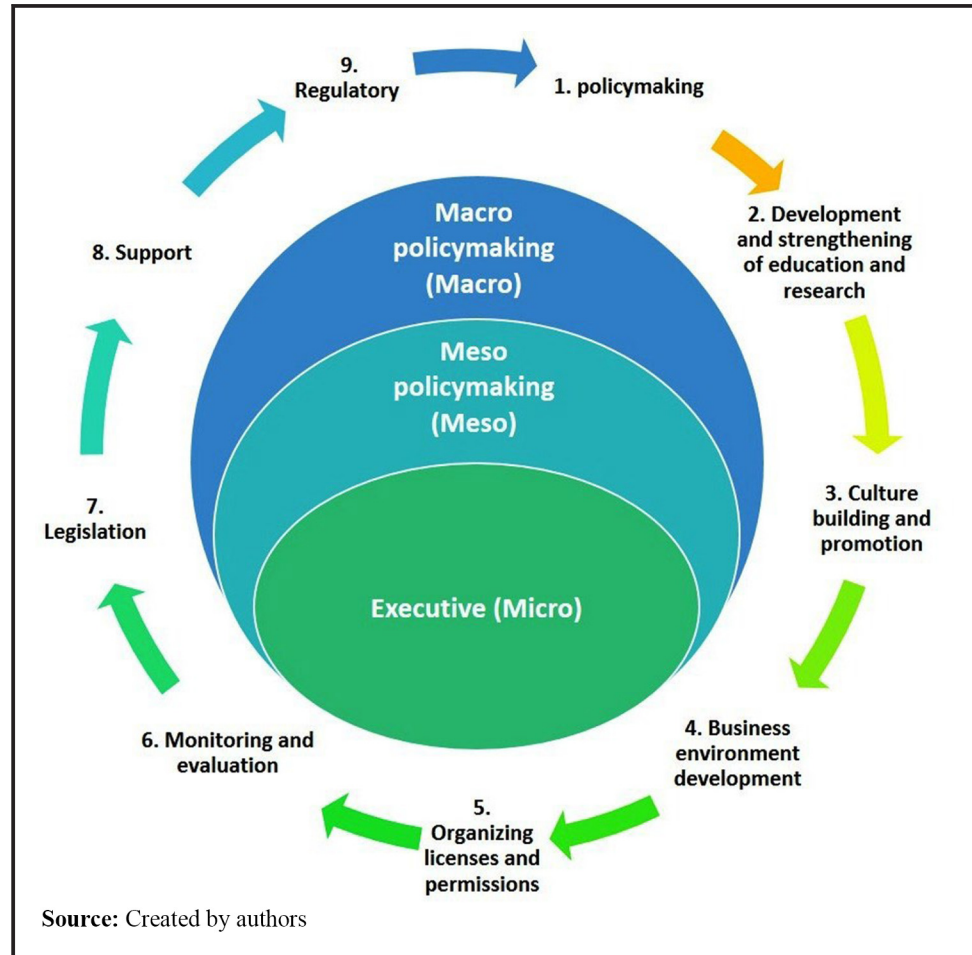
Table 4			
Macro level actors	Meso level actors	Micro level actors	Policy functions
		Assigned duties	
		■ Determining and announcing punitive measures regarding users ■ Providing informative instructions to users	
		1-4 - Publishers of short notices	
		■ Formulating and announcing rules related to the activity of short-notice service providers	
		3- Third type bots (bots that provide noncontent services)	
		3-1- Bots providing noncontent services	
		■ Announcing cases of banning the use of bots in manipulating and directing public opinion ■ Compilation and announcement of rules related to the responsibility of users, developers, businesses and platforms in case of crimes ■ Formulation of regulations related to the support of business awareness bots ■ Creating a system for dealing with complaints regarding the activity of chatbots	
Ministry of Interior	-	Formulating and announcing rules related to banning the use of bots in political advertisements and election processes	Support
Ministry of Industry, Mine and Trade	-	4- Fourth type bots (bulk purchase bots)	1- Regulatory
		4-1- Bots providing commercial services	2- Business environment development
		■ Compiling and announcing the rules for using bots for e-commerce activities ■ Developing procedures to prevent the use of bulk purchase bots ■ Establishing a complaint handling system regarding the activity of bulk purchase bots	3- Monitoring and evaluation

Source: Created by authors

Table 5 Frequency of policy functions of institutions in Iran's OSN policymaking system

Institutions	Policy functions								
	1. Policymaking	2. Development and strengthening of education and research	3. Culture building and promotion	4. Business environment development	5. Organizing licenses and permissions	6. Monitoring and evaluation	7. Legislation	8. Support	9. Regulatory
Ministry of ICT				2	1	1		2	
Ministry of Culture and Islamic Guidance						1		2	
Ministry of Industry, Mine and Trade				1		1			1
Islamic Republic of Iran Broadcasting (IRIB)			1					1	
Management Center of Iranian Seminaries			1						
Supreme Council of Cyberspace	1						1		
Central Bank of the IR Iran									
Computer Research Center of Islamic Sciences								1	
Islamic Development Organization									
Judiciary									1
Ministry of Education								1	
Ministry of Interior								1	
Ministry of Science, Research and Technology								1	
Ministry of Sport and Youth								1	
National Cyberspace Center						1			
Presidential Deputy for Science and Technology								1	
Vice Presidency of Women and Family Affairs								1	
Total	1 3%	0 0%	2 6%	3 10%	1 3%	4 13%	1 3%	15 48%	4 13%
Source: Created by authors									31 100%

Figure 3 Iran's OSN three-level policymaking system



Based on the results, Iran's OSN policymaking system is very different from the multilevel policymaking model. Therefore, the distribution of decision-making authority vertically across multiple levels of jurisdiction and horizontally over different units is unclear and not well-organized. Therefore, Iran's OSN policymaking system is shown in the form of overlapping circles in Figure 3. Also, the results showed that Iran's OSN policymaking system is a top-down and nonparticipatory policy system. The degree of overlap between the meso and macro levels is very high, considering their areas of responsibility. This is the reason for the redundancy of governance measures in this policymaking system. On the other hand, at the meso level, good specialized separation between regulatory institutions has not been done, and this level is not well-organized in terms of interinstitutional interactions. The results also show that the meso level has limited autonomy due to the obligation to answer to the macro level and also to answer directly to the users. The meso level has significant authority over the micro level and does not have much formal authority over the macro level. Also, the meso level does not receive much support from macro level actors, on the other hand, there is no mechanism in the meso level to participate and receive voluntary support from micro level actors.

6. Discussion and implications

The most important goals of OSN policymakers are the protection of the security and interests of the government (Bekkers *et al.*, 2013), the protection of the people's data and

privacy (Bekkers *et al.*, 2013; Grubmüller *et al.*, 2013), the protection of the intellectual property (McNeill, 2012) and controlling children and teenagers and protecting them from possible dangers (Madden *et al.*, 2013). However, managing OSN is a more important goal. OSN cannot be managed through filtering. Policies of strict control and monitoring in OSN where users are both producers and consumers of information are associated with many complications and are not efficient (Castells, 2015). People are always resistant to strict monitoring and control policies. An example of this resistance was formed in Iran against the legal proposal “Protection of the Rights of Cyberspace Users.” This proposal, which was put on the agenda of the Islamic Consultative Assembly (ICA-Iranian Parliament) in 2021, although it was formulated to organize social messengers and eliminate legal gaps in the rights of cyberspace users as well as supporting domestic productions, due to the inclusion of strict filtering and control policies, was met with many negative reactions at the community level. This issue caused this proposal to be removed from the agenda of ICA by a revised proposal entitled “Supporting the rights of users and basic services of cyberspace.” Another version of this proposal, titled “Regulatory System of Cyberspace Services” is now awaiting review and approval in ICA. The atmosphere of the OSN can only be controlled through education, discourse building, culture building, supporting the development of indigenous messengers and social networks. Also, the OSN policies should be formulated in a participatory system (government cooperation with the public and the private sector).

In this regard, from the theoretical aspect, this research defines an OSN participatory policymaking system based on the multilevel governance model of online social platforms presented by Jhaver *et al.* (2023), as a multilevel system in which decision-making authority is distributed vertically across different levels of jurisdiction and horizontally over different units. At its highest level, which is called the macro level, there are the main and powerful actors, but they do not monopolize the policymaking and decision-making authority; instead, decision-making authority is shared by various actors at different administrative levels. At the meso level, many interactions play out with actors at the micro level of the multilevel policymaking system and with centers of power, authority or ownership that comprise the macro level. So, they are the main arena for micro level actors to collectively organize with or against each other, with or against macro level actors. This study proposes one of the approaches of institutional analysis called the institutional mapping approach to analyze and draw the OSN multilevel policymaking system. The institutional mapping approach organizes the policy functions and shows how to divide the tasks and responsibilities of OSN actors, in this way, it can help to improve the OSN multilevel policymaking system and facilitate and strengthen inter institutional interactions including policymaking, formal and informal knowledge flows, education and financing (Orstavik and Nås, 1998; Dye, 2013; Niosi, 2002; Edquist, 2001).

From a practical point of view, this study creates added value in two ways. First, it shows policymakers and researchers how to use the institutional mapping approach in analyzing the OSN multilevel policymaking system, by examining a real case in Iran. For this purpose, two Iranian policy documents in the field of OSN have been analyzed using the institutional mapping approach from the perspective of functions and institutions.

Second, the analysis of Iran's OSN multilevel policymaking system informs the Iranian policymakers about the problems and weaknesses of this system and provides guidelines for its improvement. Based on the results of this study, in Iran, the Supreme Council of Virtual Space is one of the main policymakers of OSN, whose position is at the macro policymaking level. One of the most important features of the Supreme Council of Cyber Space is having the highest power in OSN policymaking. The examination of Iran's OSN policymaking system has unearthed five significant challenges that warrant attention.

First, as delineated in Table 5, the regulatory landscape lacks transparency, posing a challenge to effective oversight. Multiple entities, including the Ministry of Culture and

Islamic Guidance, the Ministry of ICT, the Ministry of Industry, Mining and Trade, the Judiciary and the Ministry of Interior, actively partake in shaping the regulatory framework governing OSN of the country. The pivotal issue, however, stems from the absence of a cohesive and integrated structure at the meso level of Iran's OSN policymaking system. This organizational gap stands out as the primary culprit behind the deficiency in regulatory transparency, pointing toward a crucial area for systemic enhancement.

Second, within Iran's current policy landscape, the efforts invested in cultural building and promotion within the realm of OSN are notably limited. Macro policymakers must broaden their perspective beyond the realms of security and politics. Adopting a holistic approach that incorporates scientific, cultural and social dimensions is crucial. Research, such as that by Pérez-Escoda *et al.* (2021), underscores the profound impact of media and internet literacy training on users' choices regarding networks and content. To effectively address this, macro policymakers must engage in proactive planning for media and internet literacy education. This entails fostering collaboration and coordination with key institutions, including universities, schools, mosques and official media channels. In recognizing the diverse influences on OSN users, the strategic involvement of educational, religious and media institutions becomes pivotal. The goal is to instill not only a comprehensive understanding of the digital landscape but also to empower users to make informed choices. This collaborative approach aligns with the multifaceted nature of OSN, where cultural sensitivity and awareness play a paramount role in shaping a healthy and informed digital society.

Third, a critical deficiency emerges in the training of specialized human resources and the emphasis on research and development (R&D) within the realm of Iran's OSN. As illustrated in Table 5, the crucial function of supporting R&D, along with the training of expert human resources, has been regrettably neglected, with no specific institution being allocated this responsibility. Presently, Iran's universities and research institutes provide limited training for human resources specializing in the nuanced field of OSN. This inadequacy has led to a shortage of professionals equipped with the necessary expertise in OSN. To address this challenge, macro policymakers must formulate a strategic approach. This involves guiding universities and related research institutes to not only enhance training programs for OSN specialists but also to prioritize future research and scenario planning within the domain of R&D for OSN. By instilling a forward-thinking perspective, policymakers can align academic and research initiatives with the evolving landscape of OSN. This strategic shift not only addresses the immediate shortage of skilled personnel but also ensures the continuous development of professionals capable of navigating the dynamic and ever-changing nature of OSNs.

Fourth, the progression of the business environment within Iran's OSN is facing a notable deceleration. OSN serves as a hub for millions of internet users, facilitating interactions and information exchange on a vast scale (Pempek *et al.*, 2009). The structural dynamics of social networks, particularly size (number of members) and density (number of real and potential links), play a pivotal role in user engagement (Marlow, 2006). A dense network, driven by a higher user base, results in more active participation. The appeal of OSN platform design is a key factor in cultivating a dense network (Koranteng *et al.*, 2022). Crafting native platforms that are both compelling and attractive holds the potential to draw users, intensify their engagement and mitigate the influence of foreign social networks in Iran. Unfortunately, the lack of support from policymakers for local platforms has prompted numerous Iranian businesses to operate on foreign counterparts. This shift has encountered severe challenges, ranging from security issues to the filtering of foreign platforms within the country since 2022. To invigorate local platforms, macro policymakers must devise incentive measures to encourage financiers to invest in their development. This strategic approach not only bolsters the domestic business ecosystem but also fosters a resilient and secure OSN landscape, aligning with both national interests and global standards.

Fifth, a critical oversight lies in neglecting the pivotal role of NGOs in shaping Iran's OSN policymaking. The analysis underscores a complete disregard for the valuable contributions that NGOs can offer. Serving as representatives of the private sector, NGOs possess the unique ability to articulate the concerns of both the people and private enterprises to macro policymakers regarding OSN. This advocacy lays the groundwork for fostering a participatory policymaking environment, where stakeholder input becomes integral. Strengthening government-people relations is paramount, and active NGO involvement acts as a conduit for achieving this synergy. Beyond fostering collaboration, NGOs provide essential resources to investors, as highlighted by [Pavlovic et al. \(2014\)](#). Acknowledging this, the macro-policymaker must play a proactive role in providing comprehensive support to these influential NGOs. This encompasses technical, legal and financial assistance, particularly for those deeply engaged in hardware, software and content production within the OSN landscape. The undeniable reality is that the development and widespread success of robust local services in OSN hinge on the collaborative efforts of policymakers and active NGOs. Ignoring this symbiotic relationship risks the failure of initiatives aimed at cultivating a thriving OSN ecosystem that aligns with both national objectives and global standards.

Derived from the discoveries unearthed in this study, the subsequent sections unfold a tapestry of theoretical, managerial and policy implications, accompanied by candid reflections on the limitations and astute suggestions for future research endeavors. This multidimensional exploration not only illuminates the present landscape but also lays the groundwork for navigating the uncharted territories that beckon in the realm of knowledge and inquiry.

6.1 Theoretical implications

This research unfolds significant theoretical implications that contribute novel perspectives to the realm of OSN governance.

At the forefront of theoretical contributions is the introduction of a groundbreaking multilevel policymaking model tailored for OSN. This innovative model accentuates the nuanced distribution of decision-making authority, both vertically across different administrative echelons and horizontally over diverse units. By establishing a comprehensive theoretical framework, the study lays the groundwork for systematically analyzing and delineating the intricate dynamics inherent in the OSN multilevel policymaking system. This model not only serves as a conceptual guide but also offers a structured lens through which policymakers and scholars can decipher the complexities of OSN governance.

A second theoretical cornerstone advanced by the study is the advocacy for the institutional mapping approach. Recognizing the potential of this approach in unraveling the intricate layers of the OSN multilevel policymaking system, the research posits it as an invaluable tool for policymakers and scholars alike. This approach systematically organizes policy functions, fostering an environment conducive to improved interinstitutional interactions, streamlined knowledge flows and effective collaboration in areas such as education and financing. The institutional mapping approach emerges as a theoretical compass, guiding the refinement and fortification of the OSN policymaking system by facilitating a more nuanced understanding of the intricate relationships between various institutions.

In essence, these theoretical implications not only enrich the existing scholarly discourse on OSN governance but also provide a conceptual foundation for future research endeavors in the dynamic landscape of OSNs.

6.2 Managerial implications

This study unfolds strategic insights with substantial implications for effective OSN policymaking, spotlighting the dynamic realm of Iran's digital governance.

First, the research underscores a pivotal paradigm shift toward participatory policymaking. Involving users in the decision-making process emerges as a potent strategy to mitigate violations. The Iranian context is a vivid illustration, illuminating the community's steadfast resistance to stringent control policies. This resistance, notably witnessed in the reevaluation of the "Protection of the Rights of Cyberspace Users" Iran's proposal, accentuates the need to heed the collective voice in shaping OSN policies.

Second, a call for a coordinated and integrated meso level structure resonates throughout the study. The efficiency of the OSN policymaking system hinges on establishing such a structure. The identified deficiency in regulatory transparency within Iran's OSN policymaking apparatus is explicitly tied to the absence of this critical organizational framework. This insight accentuates the imperative of strategic organization to enhance the overall effectiveness of policymaking endeavors.

Furthermore, the study brings to light a significant oversight – the underutilization of NGOs in Iran's OSN policymaking. Advocating for their active involvement, particularly as private sector representatives, the research posits that NGOs can serve as crucial conduits for conveying public concerns. Their inclusion is not just a recommendation; it is a strategic move to foster a participatory policymaking environment, aligning policies more closely with the needs and sentiments of the populace.

Finally, the sluggish growth of Iran's OSN business environment finds its roots in the lack of support for local platforms. Policymakers are urged to explore incentive measures, creating a conducive atmosphere for investment in the development of indigenous OSN platforms. The study contends that such incentives would not only invigorate local businesses but also mitigate reliance on foreign platforms, addressing security concerns and ushering in a new era of robust digital entrepreneurship. In essence, these managerial implications chart a course toward a more inclusive, transparent and vibrant OSN landscape in Iran.

6.3 Policy implications

This research unravels key policy implications, providing a strategic compass for navigating the complexities of Iran's OSN policymaking landscape.

Foremost, the study underscores the imperative of enhancing regulatory transparency within Iran's OSN policymaking system. By pinpointing the existing lack of transparency in regulatory processes, the research advocates for the establishment of a coordinated meso level structure. This structural enhancement is envisioned as a critical step toward fostering transparency, ensuring that regulatory decisions align with the broader interests of the community.

Moreover, a nuanced approach to policymaking emerges as a core recommendation. Policymakers are urged to strike a delicate balance, weighing security considerations alongside cultural and social dimensions. The study underscores the need for a more comprehensive focus on culture building and promotion, as evidenced by the limited attention given to these aspects in Iran's existing policy documents. This balanced approach aligns policies more closely with the intricate sociocultural fabric of the nation.

The study also addresses a critical oversight in the realm of R&D. It highlights the neglect of support for R&D within Iran's OSN policymaking framework. Policymakers are urged to design and implement strategies that not only address the shortage of specialized personnel but also foster future research endeavors in the dynamic field of OSNs. This forward-looking perspective is deemed crucial for staying abreast of technological advancements and evolving user needs.

Finally, the research underscores the pivotal role of supporting the local business environment. Policymakers are implored to champion the development of indigenous platforms, mitigating the reliance on foreign counterparts. The sluggish growth of Iran's

OSN business environment is intricately tied to the lack of robust support for native platforms, resulting in challenges faced by Iranian businesses. Encouraging local platforms not only nurtures entrepreneurship but also bolsters national cybersecurity by reducing dependence on external networks.

In essence, these policy implications offer a roadmap for policymakers, urging a multifaceted, transparent and forward-looking approach to OSN governance in Iran.

6.4 Limitations and suggestions for future research

The institutional mapping approach has proven to be a formidable tool for dissecting the complex multilevel policymaking system of Iran's OSN. However, a nuanced understanding of the research's scope requires acknowledging inherent limitations. First, the study's focus primarily centered on two critical matrices – the institutions-functions matrix and the institutions-institutions matrix. Expanding the scope to include additional matrices like objectives-instruments, institutions-instruments and institutions-objectives could potentially offer a more comprehensive view of the OSN policymaking system.

The reliance on available data posed a significant constraint, as the absence of prior institutional mapping research on Iran's OSN policymaking system limited the depth of analysis. Future research endeavors could significantly benefit from increased data availability and extensive investigations to capture a more detailed picture.

Moreover, the study's employment of meta-synthesis, while valuable, is contingent on the quality and breadth of the original studies. The accuracy and comprehensiveness of the synthesized data depend on the rigor and scope of the primary research conducted.

In conclusion, while this study has provided valuable insights into Iran's OSN multilevel policymaking system, avenues for future research are evident. Exploring the institutional analysis approach to understand the intricacies of OSN policymaking systems in other countries could offer deeper insights. Additionally, future research could delve into the dimensions and components of an integrated model for OSN multilevel policymaking, contributing to the ongoing advancement of knowledge in this critical area. These recommendations are poised to guide and inspire future research endeavors, fostering continual progress in this dynamic field.

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Further reading

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