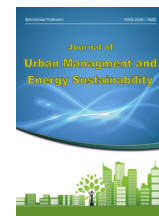


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Theoretical Analysis of the Politicized Institutional Analysis and Development (PIAD) framework with the approach of urban flood management

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ABSTRACT

Floods are one of the most complex natural disasters from the perspective of recognizing, understanding, managing, and controlling its consequences, and the manifestations of this phenomenon, are many times higher in the Asia continent, especially in Iran. Urban issues in countries like Iran have always been one of the most central issues of human life and civil decision-making. institutional approach is one of the newest scientific approaches to responding to major issues such as development, planning, and crisis. Until now, developed institutional evaluation frameworks, such as the development evaluation framework and Politicized Institutional Analysis and Development have not been introduced to the flood crisis in the Iran area. The main goal of the present study is the theoretical and methodological introduction of PIAD and its adaptation to the theoretical and practical context of the flood phenomenon and its management. This current study is qualitative research and relies on documentary research methods based on analysis of the evaluator-oriented institutional frameworks. The researcher identifies that PIAD has been explained by comparing the two frameworks of its underlying and superstructure dimensions, including two new components “politico-economic context” and “discourse” and also its useability on flood phenomenon has been described.

the findings of the research indicate the presence of a model on the adaptation of PIAD to the phenomenon of urban floods. In future studies, other kinds of institutional-based comprehensive framework analysis can be introduced theoretically and methodologically and PAID framework can be operationally implemented in one of the river cities of the country.

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1. Introduction

Urban planning is a field of knowledge in which most topics are planned and followed in interdisciplinary and Transdisciplinary ways (Despres et al., 2011). One main reason can be the necessity of a favorable and efficient response to urban issues, a significant part of which is complex (Zellner and Campbell, 2015: 457) (Sharp and Raven, 2021: 195, 202), and sometimes these issues can be in the form of the problems remain as “Wicked” or “unmet” (Rittle and Weber, 1973) (Mizrahi and Davis, 2008). The field of crisis management and natural disasters, as one of the required fields in every country’s planning system, has multiple dimensions of macro-scale, medium-scale, and micro-scale impact and effectiveness. The coordinates mentioned above are also applicable to urban issues in the field of natural disasters. Management and governance in natural disasters is not a simple, short-term, and one-dimensional thing, and needs a specific range of complexity and the need to involve a set of capacities of various engineering and behavioral sciences to respond and formulate policies and present correct policies (Asghar and et al., 2006) (Christensen and Ma, 2020).

Among the types of disasters, floods are one of the most complex natural disasters in terms of recognition, understanding, management, and control of their consequences, and numerous researchers have acknowledged this issue (Mostafazadeh and Mehri, 2017: 82). Floods on a global scale; are known as the most common natural disasters, accounting for 43% of all recorded events from 1995 to 2015 (United Nations International Strategy for Disaster Reduction, 2015), and floods are predicted to occur with greater frequency in the future (Winsemius et al., 2016). So the individual and administrative management of this phenomenon has not been associated with promising prospects in recent years (Radjivar et al., 2016: 12), and in this sense, despite the management efforts, the damages caused by floods have increased significantly, so regardless of the frequency of urban floods, this phenomenon has affected approximately 3.6 billion people and more than half of the world’s population during the years 2010 to 2020, and there are predictions of its

destructive increase until 2050 (Chan et al., 2022). These sensitivities, especially in the case of Iran and the Asian continent, are much higher than in other parts of the world due to the risk and vulnerability to disasters (National Flood Report, Crisis Management Group, 2018: 83) (Vaqefi et al., 2019).

Institutionalist approaches to knowledge are one of the new approaches to understanding and solving management problems that have entered footprint in many sciences and macro issues such as development and planning (Pike et al., 2016). Institutional approaches have higher advantages than process approaches in management knowledge. There are many weaknesses of process approaches, such as focusing on the existing situation, not paying attention to the challenges of establishing and functioning the system, and not paying full attention to the multiple possible layers of the presence of elements and actors in a system and non-payment cover the set of implicit and hidden variables (Koontz, 2003: 1-2) (Sabatier, 2007: 7). In this regard, the current tangible links between planning and neo-institutionalism have continued in the main dimensions of the body of urban planning knowledge (Beauregard, 2022: 15) and it is possible to expand its perspective in the fields of management and disasters to compensate for the gaps in the synergy of the capacities of these two categories.

Floods, as late containment natural disasters, are very close to the capabilities of neo-institutionalism. It is possible to use it as a qualitative method to analyze the event and explain “Institutional evaluation frameworks” as one of the well-known realms of institutionalism, using one or more of the institutional network of neo-institutionalist concepts such as “institutional matrix” or various components of “institutional capacities” like “institutional learning” and “arrangements.” “Institutional” exists on a case-by-case or group basis, and its high capabilities can be used to analyze and explain complex phenomena such as urban floods. From this place, the connection between the pillars of crisis management and the capacities of neo-institutionalism is also provided. It is possible to refer to various general institutional evaluation frameworks, such as the CLAIM, the IAD, the PIAD,

the SES, and the CIS, which can be used jointly to analyze natural disasters and other issues of behavioral sciences and engineering. In the CLAIM framework, external political and economic factors, agents, institutions, urban environment, physical processes, resources, and roots are key components (Abdeh et al., 201). In the context of IAD; Basic extrinsic factors, area of action, patterns of interactions, consequences, and evaluation (Ström et al., 1994), in the framework of PIAD; Basic external factors along with contexts and discourses, action area, patterns of interactions, consequences, and evaluation (Clement, 2010: 13), in the framework of SES; resource systems, resource units, action situations, governance system, actors and within the framework of CIS; Background conditions, consequences, and effects, the focal network of action situations (Kole et al., 2019) are the key and macro-analytical components of the institutional framework. One of these five introduced frameworks is Ostrom's Institutional Development and Analysis Framework (IAD), as the most well-known comprehensive institutional framework in this field and is also used in domestic texts by various researchers in theoretical forms (Motavaseli, Beigi Harchgani, Farmahini Farahani, 2019: 11) and applied (Taghadosi and Sharifzadegan, 2019: 51) have been introduced. One of Ostrom's framework's features is its application in various subjects, which has provided a basis for its criticism and updating for researchers. By reviewing the content five frameworks, we can say that the evaluative Framework for PIAD is the closest framework to the institutional development and analysis framework Ostrom. Although despite its significant capacities in analyzing and explaining various technical, natural, and human phenomena, it has not been introduced and described in domestic texts. The purpose of this article; Introducing the fields and the framework principle and adapt the academic and practical field of the flood phenomenon and its management. In this sense, there is a kind of gap among the scientific texts in the country. Introducing and applying the PIAD framework can help solve these shortcomings. Also, the research question is about the evaluation framework of PIAD and how to adapt it to the

flood phenomenon and its management elements in terms of methodology.

2. Literature review

Institutionalism is one of the new approaches to analyzing behavioral and management issues, especially at the level of "common goods." The history of the emergence of institutionalism goes back to the early 20th century. The origin of the birth and development of institutionalism lies in economics, the criticism of neoclassical approaches in the way of looking at human beings and human phenomena, and its proximity to areas outside the field of economics, namely philosophy, social sciences, and anthropology. (Motavaseli, 1400: 348-352). Unlike knowledge development, institutionalism is not limited to one branch of knowledge today. It constantly expands in various humanities fields and adjacent interdisciplinary sciences such as development and planning. From the perspective of its constructive approaches, institutionalism has shown its dimensions and appearances in three forms: historical, sociological, and rational choice, and in the field of its commonalities with planning, existing theoretical ideas can be divided into three types: cognitive, interventionist, and exchange-oriented (Sharifzadegan and Ghanooni, 2015: 5, 8).

In institutionalism, Phenomena and trending patterns consisting of collective or group behavior are emphasized, whose axis is "institutions" in general. Despite this importance, institutions have various shapes and forms and are not easily included in single, fixed theoretical definitions. From this point of view, the institution's definition from a theoretical point of view has areas of ease, abstinence, and elegance. One of the definitions of institutions is Douglas North's definition of institutions. North says Institutions are considered a set of laws, methods of obedience, and spiritual and moral behavioral norms formulated to maximize wealth or limit behavior (North, 1379: 129, 233). "Rules of the game" is another interpretation of North, which guarantees a set of constraints to regulate and shape relationships between people (North, 2015: 19). In this sense, institutions are the same rules that govern the behavioral relationships between

people (Motevaseli, 1400: 325) that the quantity and quality of human interactions are among them. Clearly, in this context, Commons believes that institutions; are tools for creating collective action to control or liberate the expansion of individual efforts. On the other hand, institutions are not formed easily and quickly; in this sense, the nature of institutions is complex (Asgari, 2019: 291). There are no quick and instantaneous changes; institutional changes are usually temporary and often gradual (North, 2005: 114).

One of the most fundamental coordinates of institutionalism is the type of explanatory logic in this intelligent system and the intellectual and analytical frameworks that oversee it, which have distinct theoretical characteristics, and knowledge of them is highly effective in determining how institutional mechanisms work. As mentioned, the process of formation and change, and transformation of institutions is not simple. From this point of view, the institutional analysis and explanation of the selected topics tend to be complex, holistic, and comprehensive (Hodgson, 2019-A: 419) (Asgari, 2019: 296). On the other hand, the new institutionalists have been searching for the possibility of using different types of knowledge together to explain what institutions are and how they are formed, changed, and reformed (Taghadosi and Sharifzadegan, 2019: 46) and from this point of view, the analyzes in the analytical and explanatory apparatus of the institutionalists are It is interdisciplinary, and in it, the discovery of insights from related or adjacent knowledge is accepted (Hodgson, 1389-A: 430-431) (Motevaseli, 1400: 372). Another critical point is that this type of view and logic of explanation, whether in case use or extensive use of institutional network concepts, the set of institutionalist analytical evaluation frameworks have the same characteristics and the type of reading and reading it. The frameworks should be done under the same set of traits and other factors, such as a search in recognition of the hidden and driving forces of the phenomena (Hamilton, 2009: 263-264) in the process of recognition, analysis, and explanation.

Flood is one of the complex phenomena that can be adapted to the institutional approach. Floods are multi-faceted and complex natural

phenomena that have a rich and ancient history during the historical course of human life. On the other hand, they have experienced changes in what it is and how it is perceived in the past hundred years. This phenomenon has distinctive features such as the frequency of scale from small to large scale and spatial interventions from neighborhood to regional. Flood is the most common and destructive global phenomenon compared to other natural disasters like earthquakes and tsunamis (Kundzewicz et al., 2017: 5) . Despite the floods occurrence in history and different interpretations of floods, the importance of this natural event is now the highest level, and the transboundary nature of the flood phenomenon (Vitale and Meijerink b2021: 597) also practically covers the concerns of risks in a range of different countries.

In standard classifications, floods can be divided into river floods, including slow-onset floods, rapid-onset floods, flash floods, coastal floods, urban floods, single-occurrence or multi-occurrence floods, seasonal floods, etc., which are essential terms in flood management (Kumari et al., 2022: 139). There is no single theoretical opinion on how flooding occurs, although all definitions have common elements. Based on different views, it can generally be concluded that a flood is a flow with several natural and human characteristics. Fundamentally, Floods are usually related to continuous heavy rainfall, rapid development, unplanned urbanization, poor drainage system, and environmental destruction (Obeid et al., 2021), which has a particular set of financial and human losses depending on the type of flood and the scale of its occurrence.

The occurrence and aggravation of the flood phenomenon have various micro and macro effective and constructive factors that should be taken into account in the analysis of the phenomenon. From a micro-engineering point, factors such as the components of the hydrological cycle and the physical conditions of the watershed, such as topography, the structure of waterways, the type of soil layers, and geological characteristics, are essential. From a macro perspective, various factors flood a riverbed or an artificial environment. Generally, the drivers of change in urban floods can be divided into two

direct and indirect groups. The direct ones include “habitat change (change of land use and physical modification of rivers or water withdrawal from rivers), over-exploitation, invasive alien species, pollution, and climate change.” Indirect drivers include population change, changes in economic activities, socio-political factors, cultural factors, and technological changes (Millennium Ecosystem Assessment, 2005: 4, 19). The more prominent role of phenomena such as climate change and the monsoon phenomenon is another factor that

has increased the impossibility of accurately predicting the occurrence of urban floods (Shot and McCree, 2001) (Vaqefii et al., 2019). On the other hand, flooding increases vulnerability and decreases resilience in watershed areas by influencing meteorological, hydrological, physical-environmental, economic-social, and infrastructural factors (Azizi, Mostafazadeh, Hazbavi, Esmaili Ouri, Mirzaei, 1401: 14).

All these factors make managing urban floods more complex and sensitive. Therefore, flood

Table 1: Matching the common coordinates of institutionalism, flood, and flood management

row	Index name and characteristics of institutionalism	Supporting resources	The name of the indicator and the characteristics of the flood	Supporting resources
	Multi-criteria and multi-component	North, 2018: 42	Multi-element with multiple components	Elrich, 2007: 46
	Polygonal view	North, 2018: 247	Several actresses and multiple actors	Schuman and Nijssen, 2011: 249
	Complex axis	Hodgson, 1389-A: 419	Complex axis	Elrich, 2007: 46
	A set of formal and informal rules	North, 2018: 43	The organization is based on a set of rules and guidelines	Bergsma, 2019:16
	Institutions as "planning" and sharing with it	North, 1379: 129	It has commonalities with the field of a crisis management system	Elrich, 2007: 46
	Inclusion of obvious and hidden institutional dimensions in the analysis	Raeis Dana, 1383: 324	The presence of obvious and hidden components in the emergence and management of floods	Bigam et al., 2007: xii
	Ability to respond to trends in institutional analysis	Asgari, 2019: 296	It has repetitive and non-repetitive patterns	Wagner, 2018: v
	The ability to measure outcomes along with the type of relationship between institutions and outcomes	Hodgson, 1389-B: 503	It has tangible physical and human damage and needs to evaluate the consequences	De Bruin et al., 2007: 63-64
	Ability to provide comprehensive analytical devices	Ostrom, 2007: 23	It requires institutional concepts and analytical conceptual network	McFadden, 2007: 63-64
	Ability to respond to uncertainty	Raeis Dana, 1383: 322	Uncertainty and unpredictability	Bergsma, 2019: 1

Table 2: Research background

Researcher	Year	subject	method	result
Ghasemzadeh et al	2021	A framework for assessing urban flood resilience with an emphasis on institutional, economic and social dimensions: a qualitative study	Targeted sampling to select experts, semi-structured interviews, and coding of extractive categories. The validation of indicators and their usability based on the opinions of internal experts were used to calibrate the evaluation tool and ensure its context sensitivity.	- The analysis process led to identifying three social, economic, and organizational issues, 15 categories, 40 sub-categories, and 235 codes and sub-elements, including culture and education, participation, trust, attitude, solidarity, resources, empowerment, flexibility, credit, supervision, and Internal communication. , laws, expertise, and research.
Vitale et al	2021	The Resilience of urban floods, a discursive-institutional Analysis of planning practice in the City of Milan	Evaluative Framework of Political Institutional Analysis and Development (PIAD)	-They mentioned three key discourses of engineering resilience: ecological and socio-ecological resilience. Researchers in search of forming the dominant discourse of a river basin, A set of institutions (laws in use), and outcomes such as flood protection infrastructure or construction regulations were considered using the PIAD evaluative framework. - According to the results, engineering resilience discourse has been prioritized due to the strong presence of financial policies and budgets aligned with hard and physical infrastructure criteria.
Parastoo Emami	2021	Review of flood risk management	-Mixed approach - case research - a systematic review of 170 articles to identify drivers of change -interviews with key informants -observation and analysis of more than 230 documents including statutes, laws Judiciary, and reports from government agencies, the insurance industry, and other actors - using the DPSIR (stimulus, pressure, state, impact, response) framework, CIS (developing hybrid institutional analysis and socio-ecological systems (Cole et al. 2019), and the diagnostic approach developed by Di Lo and Peterson (2017a) are integrated.	-Drivers of change fall into five key categories: environment (ENV), politics (POL), technology (TEC), economy (ECO), and society (SOC). -The systematic review analysis also highlighted a gap in defining and classifying drivers of change or measuring their impact on flood risk and vulnerability. To address this gap, a conceptual framework was proposed that situates the selected FRM system within broader socio-ecological systems and explains the pre-existing conditions within the system.
Vitale, Mijerink	2021	Understanding conflicts between municipalities and participation in flood risk policies for Milan metropolitan area	The evaluation model for understanding the type of conflicts formed; The transboundary water interaction model and policy evaluation model and the decision-making processes are based on the framework of PIAD	The research results show the asymmetry in the institutional environment of the metropolis of Milan and the upstream municipalities, along with the presence of the dominant discourse of engineering resilience alongside each other to secure the series of incidents that occurred.

management is changing due to the awareness of experts, decision-makers, and people about climate change, increased flood risks and the complexity of social and environmental systems, and the inadequacy of engineering approaches for flood control in dealing with hydraulic factors. Hydrological, social, economic, and environmental have been proven, and due to the increase in flood damages, the increasing complexity of social-ecological systems, and the spread of uncertainties; The need for flexible responses are observed in the management of urban floods (Merz et al., 2007) (Pomeroy et al., 2016) (Hartman and Driesen, 2017). The answers can be one of them are institutional approaches and taking advantage of the standard capabilities of neo-institutionalism and the field of floods together and collectively. Table No. 2 shows a model of the possibility of matching the nature of institutions with urban floods.

2.1. Research Background

The research background shows a variety of research, although limited, in the common areas of floods and types of institutional and non-institutional analysis. In the institutional critique, both the use of Ostrom’s institutional analysis and development framework (IAD) can be seen. The PIAD evaluation framework has been used in the institutional analysis of the flood phenomenon.

It is reminded that most of the research in this field are in Latin, and qualitative study based on the Persian language are less visible among specialized literature. The following table mentions some essential research related to the research field. Table two says the types of analytical frameworks of the base institution.

3. Methodology

The methodological approach of this research is among the three quantitative, qualitative, and mixed approaches; The form is qualitative. The general method of gathering research resources is done with the help of library studies. The focus of the research is on theoretical and applied texts along with the use of interdisciplinary procedures to integrate those data in the two areas of neo-institutionalism and urban flood management. The specific data in the field of floods is the nature of floods, their primary factors and aggravating factors, and how to manage them. This has been tried to establish the most significant connection between the two categories of institutions and institution-building in urban floods, considering the multiple dimensions of the multi-faceted phenomenon of floods. The link between these two sides is the institutional evaluation frameworks. The article chose one of the available comprehensive frameworks PIAD as

Table 3: Coordinates of various comprehensive frameworks of institution-based analysis

row	type	abbreviation	Key and macro analytical components of the institutional framework	Support sources
1	comprehensive	CLAIM	External political and economic factors, agents, institutions, urban environment, physical processes, sources, and roots	Abebe, Ghorbani, Nikolic, Vojinovic, Sanchez, 2016
2	comprehensive	IAD	Essential external factors, area of action, patterns of interactions, consequences, and evaluation	Ostrom, Gardner, Walker, Walker, 1994
3	comprehensive	PIAD	Basic external factors along with contexts and discourses, areas of action, patterns of interactions, consequences, and evaluation	Clement, 2010:139
4	comprehensive	SES	Resource systems, resource units, action situations, governance systems, actors	Cole et al, 2019
5	comprehensive	CIS	Background conditions, consequences, and effects, a focal network of action situations	Cole et al. 2019

the target based on which the data is linked. The communication logic between the two-way data of the institution and the flood in the framework is based on the framework's introduction and the framework's elements' Adaptation to the flood. The special methodological techniques of the research also rely on the documentary research method and the analysis of available documents. We have used different sets of documents in the literature for broader evaluations or to present a larger and richer narrative of each document. Using this set and systematically using documentary data; The possibility of discovery, extraction, and classification (Sadeghi Fassaei and ErfanMenesh, 2014: 63, 69) while analysis and interpretation (Payne and Payne, 2004) are formed along with providing evaluation and narrative. The focus of the analyzed documents is the use of the neo-institutional approach in the field of urban disaster and flood management. Due to the analytical method of research compilation, analyzing the dimensions of institutionalism and available evaluation-oriented institutional frameworks is on the agenda. The outputs of the article are to provide a broader evaluation and a richer narrative than the previous findings in the field of knowledge and application of evaluation-

oriented institutional frameworks. For this purpose, the Political Institutional Assessment PIAD Framework was considered an unknown institutional analysis framework. Its theoretical nature and how to apply it were scrutinized in disaster management and urban flood management. The constituent elements of the framework were analyzed and interpreted from a qualitative perspective. The figure below shows the main components and the communication process of the key aspects of the research.

4. Results and Discussion

PIAD has six sections "Background and Origin," "framework infrastructure," "framework superstructure," "full framework," "Sides of new pillars of the Framework" and "Adaptation." Considering the analytical nature of the article.

In this section, we will introduce the framework and add supplementary references from other related research to recognize better and identify the presented framework, as well as the necessary Adaptation in the application section in urban floods. The context of delivering this framework is shaped by the development of "institutional rationality" and the involvement of institutional analysts with the complex external

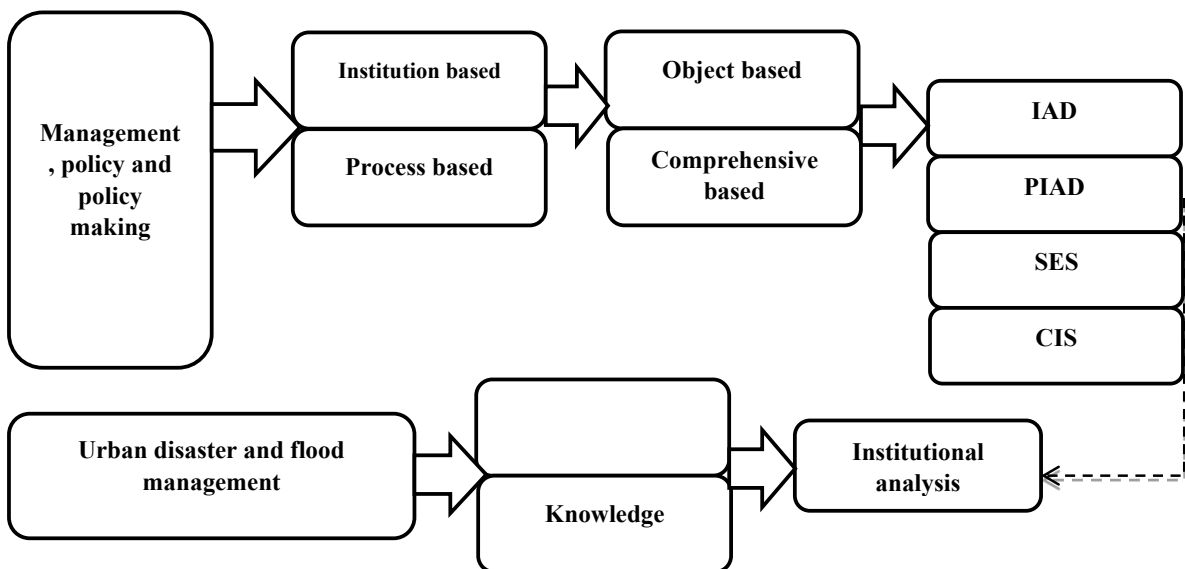


Figure 1: Communication process of key research elements

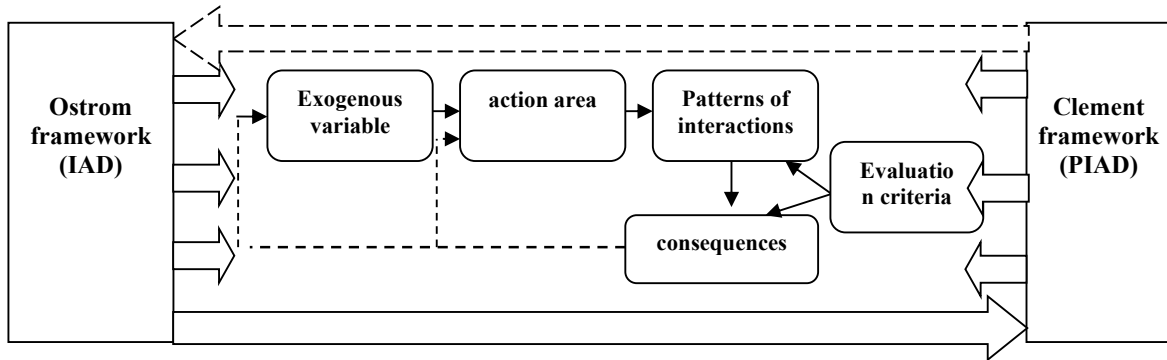


Figure 2: Common underpinnings of Ostrom and Clement's institutional analysis and development framework

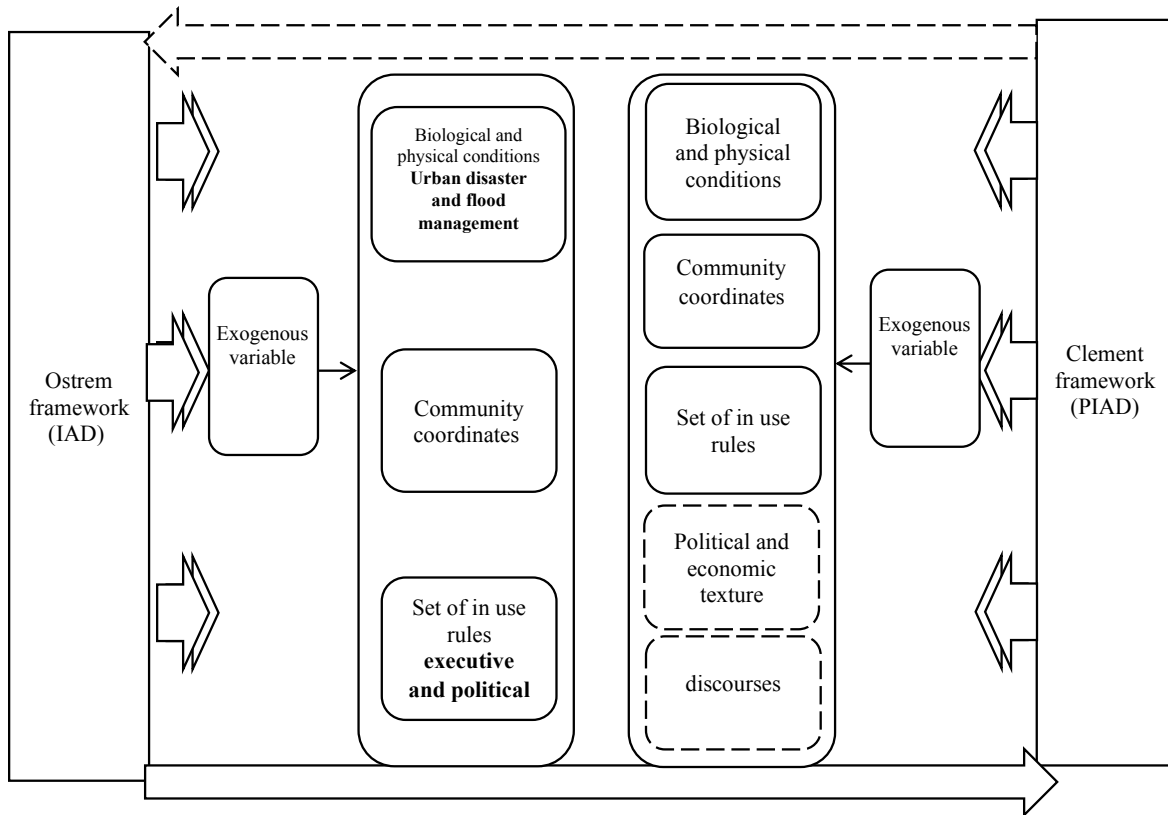


Figure 3: The non-shared superstructure of Ostrom and Clement's institutional analysis and development frameworks

reality in the form of giving general analytical frameworks.

These are theoretically simultaneous with the critiques on process approaches in management science (Sabatir, 2007: 8-10), and the pioneer's

efforts like Elinor Ostrom were formed in the same decade (Ostrom, 2015: 21). This framework was introduced by Florine Clement in 2010 in research entitled "Analysis of Decentralized Governance of Natural Resources: Proposing a Development

Framework and Political Institutional Analysis” and in “Political Science” publication. The PIAD framework has a common ground with institutional analysis. In this sense, institutional research and the analytical frameworks of the base institution have common points, and the analytical frameworks of the base institution have predefined regular structures. This new framework is an extension of similar frameworks of institutional analysis, such as the IAD framework and the elements of that framework. Nevertheless, the originality of Clement’s work is in providing a comprehensive analytical model for institutional evaluation. He believes that the framework not only facilitates the analysis of the shortcomings of existing policies but also supports the design and distribution of future policy recommendations (Clement, 2010: 129). In this analytical-institutional framework, the complex external reality can include a diverse range of common goods from an economic point of view. The truth can refer to a complex natural phenomenon such as a flood and its management, which this research emphasizes.

4.1. Framework foundation

The foundation of Clement’s framework or PIAD framework is based on the IAD framework and is fully compatible with it. In this framework, the five essential elements of the IAD framework have been considered as the foundation of the new framework. Figure 2 shows the five essential variables of these two frameworks.

A complex systems or phenomena dissection is established into “composite elements” set in both frameworks. The framework has four structural sides, including inputs or external variables and outputs. Inputs include three physical and biological conditions, social coordinates of society, and rules in use, and output includes consequences and evaluator actors as an evaluation criterion the black box is the action area and the two constituent elements in it are the actors and the action situation. The underlying elements of frameworks have been introduced in various international and local texts, so repeating the contents in this section is omitted.

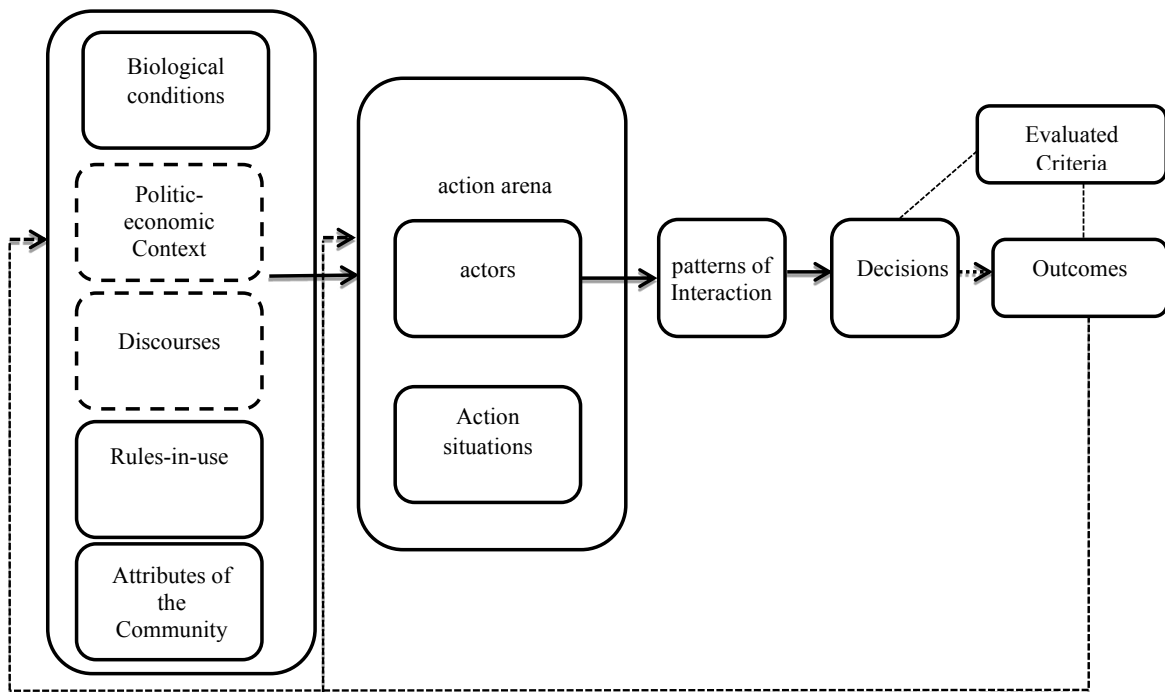


Figure 4: Complete PIAD framework (Clement, 2010: 139)

4.2. Framework Superstructure

In the superstructure part of the framework, two new critical elements have been added to Ostrom’s basic framework among the aspects of exogenous variables, differentiating this framework from Ostrom’s conventional and classical models among researchers. The logic of the framework and its contexts in analysis and explanation strengthens. This framework has two new elements, “Economic-Political Context” and “Discourses,” which are effective and influential in the “Area of Action” and “Situation of Action.”

4.3. Complete framework

In the complete political and institutional analysis development framework, the infrastructure and superstructure elements are completed with each other and form a complementary circle of the four elements of inputs, outputs, consequences, and

the evaluator and the black box of the action area. Figure 4 shows the complete layout of Clement’s Institutional Analysis and Development (PIAD).

4.4. The sides of the framework’s new pillars

4.4.1. Ontological dimensions of the new elements of the framework

Clement uses the critical approach paradigm and the famous ideas of Bhaskar and Harre instead of superficial realism in developing the methodological basis of his work. Understanding its comprehensive structures depends on the society’s political and social parts. The realist and structural twin emphasis of the “critical realism” ontology approach is a crucial guiding point in this field (Clement, 2010: 141-140). This ontological view, the foundation of the way of epistemology, is based on the new components that make up this framework.

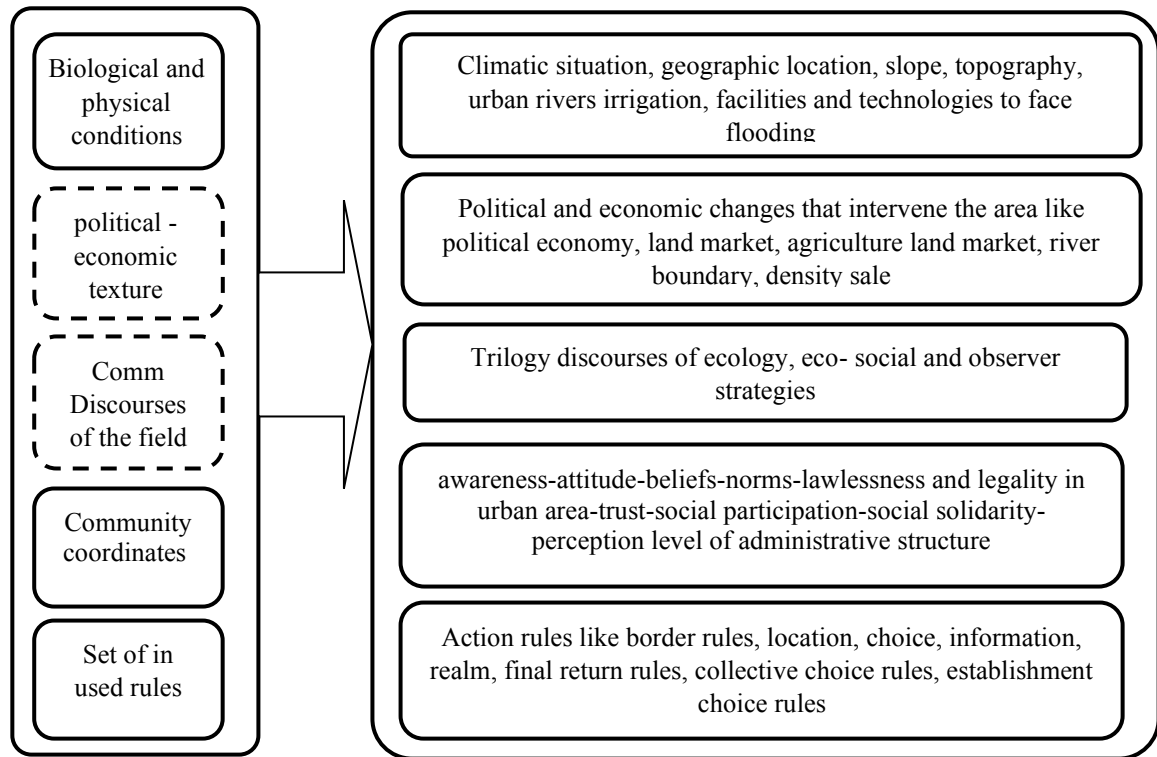


Figure 5: Establishment of the macro framework (PIAD) in the flood sector and appropriate indicators in exogenous variables

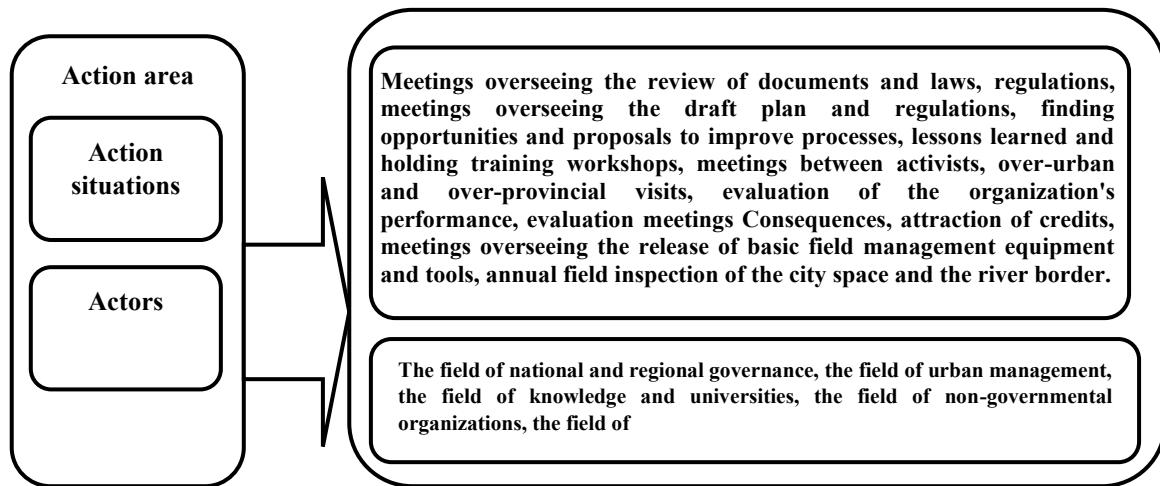


Figure 6: Deployment of the PIAD macro framework in the flood sector and appropriate indicators in the action area

4.4.2. Power and economic-political context

In general, “power” is one of the key concepts in the “body of knowledge,” especially the “general body of social science knowledge.” “Power” and how to interpret its production, reproduction, and distribution are central concepts and issues in political science and human-social science. Power, as well as other interdisciplinary knowledge, is one of the essential topics for analysis and policy-making. Due to its multiple hidden and apparent effects and the broad scope of influence of power, it is always one of the topics of attention. One of the assumptions of Clement’s framework from the institutional perspective is that institutions are not exclusively in the Still, their formation originates from a place called “power” (Vitale et al., 2020: 2). Clement quotes Ribot that institutions are affected by the distribution of power arising from collective choices and institutional levels while being influenced by individual rational decisions based on motivations (Ribot, 2006) (Clement, 2010:140). These collective choices and institutional levels are dimensions of the rules Ostrom cited in vertical levels (Ostrom, 2015: 344). Clement used the well-known French thinker “Michel Foucault” in this context. Foucault considers power not only a tool of the dominant state; Rather, he considers it to be reinforced by the set of daily social and political actions, and therefore there is a kind of interaction between

the two elements of “institution” and “power.” The institutions are effective in the distribution of power and the action of their supervisor.

On the other hand, the distribution of power is effective on the type of organization and design of institutions, especially at the level of rules, which determines and regulates the type of participants in the action area. Therefore, the new “political-economic context” element applies to the essential element of exogenous variables in Ostrom’s framework. For instance, “rules in use” are effective in the distribution of power, while a set of actors’ decisions depends on the historical and social context, in return (Clement, 2010:135). In explaining how authority is established, Clement has used the term “contextualized decisions” and the structures that make up macro and political, and economic wisdom effective in power distribution to analyze power mechanisms (Clement, 2010:140).

4.4.3. Discourses

“Discourse” is one of the essential topics in knowledge, like the concept of “power,” especially in the social sciences body of knowledge. It has a high mix of political knowledge, and its use is prevalent in other interdisciplinary sciences, such as urban and regional planning and the analytical-explanatory dimensions of planning. Hajar believes that discourse is the specific and unique

general effect composed of ideas, concepts, and classifications produced, reproduced, and transformed within a series of particular actions that give meaning to physical and social realities (Hajar, 1995: 60).

Based on this, the second and new element of the political framework of institutional development and analysis are “discourses,” Conversely, discourses are related and connected with the aspect of the “rules in use” collection from two perspectives. From the first perspective; The existing dominant lessons of projects and their establishment are practical, and from the second perspective; The emergence and resistance of discourses are also affected by the economic-political and institutional context (Clement, 2010:140). Based on this, considering the variable of discourses helps to understand the reasons for the superiority of each particular policy regarding different phenomena over each other (Vitale et al., 2020: 3).

4.5. Adaptation of the framework in the field of floods

Exogenous variables in the PIAD framework include five elements of biological, physical, and material conditions, political-economic context, field discourses, community coordinates, and the set of rules in use. The framework adaptation for any phenomenon should follow the coordinates of the purity and how that phenomenon works. As explained in the theoretical foundation’s section, a series of natural and human factors are involved in the flood. Comprehensive institutional evaluation frameworks cover the possibility of reading or group reading of this set of variables. At the time of application, this set of factors must align with the coordinates of institutional frameworks. Figure No. 5 has a comprehensive look at some effective indicators in the flood phenomenon formation and management from exogenous variables in the PIAD framework, presented as a list to avoid the research text length limit.

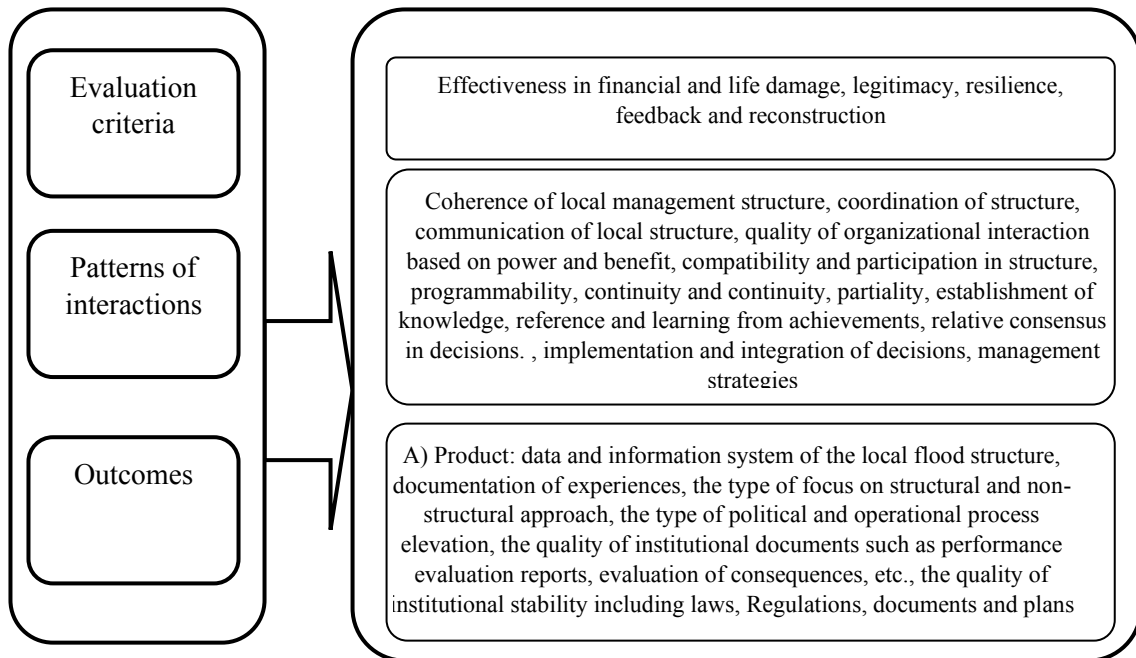


Figure 7: Establishment of the PIAD macro framework in the flood section and appropriate indicators in the complementary sides of the framework.

The middle part of the PIAD framework is the same as the IAD framework and is dedicated to the description of the “action area” and “action position.” According to the underlying nature of both frameworks and the nature of the performance of these two parts, a wide set of actors and action situations can be present in disaster management, including urban flood management. This is usually related to the interdisciplinary nature of flood management, which interferes with the planning system and its main building blocks in the crisis management system and structure. On the other hand, generally, in the management of disasters and natural crises, a diverse range of organizations, groups, and people are involved and responsible, and this diversity of actors can also play a role in the variety of “action situations” that make up the “action area.” Figure No.6 has an overview of this set of actors and examples of action situations in managing a phenomenon such as urban floods.

In the third part of the PIAD macro framework, there are elements of the common infrastructure of institutional development and analysis frameworks, including evaluation criteria, patterns of interactions, and consequences. In the section on evaluation criteria in the field of a flood, key and important components such as the change in the amount of flood damage or resilience can be cited. In the section on interaction patterns, the organizational nature of crisis management plays a key role. We can talk about managerial qualities and values, such as the degree of cohesion, the type of corporate communication, and its quantity and quality. In the consequences section, which directly relates to interaction patterns, it is possible to focus on the quantity and quality of crisis management organizational outputs to form multiple flood management strategies. Figure number summarizes and describes the appropriate sub-components and indicators in Ibn Bakhsh of the PIAD framework.

5. Conclusion

Natural disasters are considered one of the basic axes in the planning system of different societies, which have political-institutional and executive dimensions. Disasters such as urban floods are also considered one of the most deadly and complex disasters in human life history.

Complex and unresolved issues, including the dimensions of issues and The problems of the urban area, are considered parallel to these complexities; New approaches have also been formed to deal with them. One of the complex and complicated urban issues, Natural disasters, is floods, which understanding and response in the body of knowledge have gradually been formed with the help of quantitative and qualitative and mixed techniques and methods. The institutional approach is one of the alternative approaches to conventional approaches, which has entered into major issues such as development and planning systems. In addition to criticizing those approaches, it has brought new capacities for this purpose. One of the important sub-branches of neo-institutionalism is; It is possible to evaluate existing phenomena from an institutional perspective, which is done by a set of models, patterns, and comprehensive frameworks. One of these newly developed institutional evaluation frameworks is the PIAD evaluation framework, which has a common foundation with Ostrom's framework (IAD). This framework has not yet been introduced in the theoretical literature of neo-institutionalism and planning in Iran. From this point of view, a kind of deficiency is observed among institutional studies in Iran. A look at the background of research in this field shows that most of the scientific texts in this specialized field, including the issues of development, planning, participation, water, etc., are focused on Ostrom's framework (IAD), and in a way, there is a gap in the lack of introduction and non-adaptation of the development framework And there is PIAD with the topics and issues of the city, including the field of natural crisis management and planning systems in this field. The research has used a hexagonal pattern introducing the framework, including the origin, the foundation framework, the superstructure of the framework, the complete framework, the sides of the new elements of the framework, and Adaptation in the field of floods. The introduction has two general structures to introduce the elements and structure of the framework. This part has similarities in the basic dimensions with the IAD framework. It has differences in the superstructure dimensions with the IAD framework as a framework for measuring

criteria in this field. Among the primary points of the PIAD framework is having a common foundation with the IAD framework to include a similar range of institutional evaluation mechanisms of external reality or complex natural and human phenomena. The secondary points of this model also refer to the establishment of two auxiliary components, “political-economic context” and “discourse,” as exogenous and effective variables in the action area of the framework. This approach puts the model’s explanatory power many times higher than the IAD framework and has fixed the gaps in that general framework. However, this framework has limitations compared to the other five frameworks introduced, including maintaining the basic structure of the IAD framework and not integrating the components of other frameworks with each other, and emphasizing the linear relationship between the components instead of the network relationships between them like some other comprehensive frameworks. Identified is the same as the (CIS) framework. In addition, the research’s descriptive findings show that using “Clement’s new framework” can adapt to the city’s problems and sub-topics, such as the flood phenomenon as a complex natural phenomenon. The complementary and new components of the PIAD framework, such as “political-economic context” and “discourse,” have a high alignment with interdisciplinary knowledge capacities such as urban planning and crisis management. The analysis of discourses and understanding of the political-economic context in a field such as a flood can also complement the previous basic understandings in similar frameworks such as the IAD framework. From this point of view, in understanding the composition of the political-economic context, the capacities of the political economy of space can also be used in describing the situation of different case examples. Analyzing the quality and quantity of unauthorized constructions in the city and the amount of encroachment on natural resources such as urban rivers is an important part of the capabilities of this new component of the PIAD framework in the institutional analysis of exogenous variables in the occurrence and management of urban floods as a complex phenomenon arising from the interaction of various forces. with each other

In total, this research introduces a new framework from the set of new frameworks for institutional analysis and compensates for some of the existing research gaps; It has also provided the possibility of its application in complex phenomena such as urban floods.

6. suggestions for Future Studies

- Knowledge and theoretical introduction of the five comprehensive frameworks of institution-based analysis
- Practical implementation of the developed evaluation framework and institutional political analysis in high-potential cities such as river cities in North and South Iran.
- Comparative study of the five types of comprehensive frameworks of institution-based analysis in terms of effectiveness in returns and feedback.

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