

Presentation of a process and content model of the housing planning system and its measurement indicators

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Abstract

United Nations reports indicate that approximately one-third of the global population faces some form of housing shortage. Most existing solutions have been temporary rather than fundamental, leading to a lack of coordination across various planning levels and a lack of transparency regarding the roles of involved institutions. A primary cause of this global housing challenge is the absence of a cohesive framework comprising all sectors of the housing planning system—one that clearly defines the mechanisms of its components and provides a comprehensive view of the entire planning system.

This research aims to analyze the concept and identify indicators of a housing planning system and to propose a process and content-based model. Using an inductive part-to-whole approach, the study seeks to bring transparency to housing planning as a distinct component of urban policymaking. By leveraging credible articles from Scopus and Web of Science alongside global best practices, this work is categorized as applied and archival research.

The findings include a 72-indicator system for the housing planning system in its broad global sense (e.g., economic indicators like the housing-price-to-income ratio, or institutional indicators like the level of coordination from national to local levels). Additionally, it presents a process and content model consisting of three levels: the outer layer (macro theories and contextual factors), the planning process (legal structure, governance, finance, and demand-supply management), and the measurement and evaluation level (encompassing housing quality and process assessment), clearly defining the internal relationships between these components.

Keywords: Comparative Analysis, Conceptual Model, Housing Indicators, Housing Planning System, Housing Policies.

1.Introduction

Raising the issue in the world and Iran: In the current era, despite significant progress in various fields, various countries in the world still struggle with numerous issues in the field of housing (Gallent et al., 2024; Shama & Motlak, 2019). According to the Habitat report in 2023, 2.8 billion people in the world have some kind of housing shortage; in 2020, the total slum population reached 1.1 billion, and even in developed countries, we face at least 318 million homeless people (Silva et al., 2024; UN-Habitat, 2023). Therefore, access to housing is a major challenge not only in Iran, but also throughout the world, and it reflects the necessity of housing planning (Pastrana & Vols, 2024). In Iran, despite the establishment of numerous but fragmentary laws and policies in the field of housing and their implementation in different periods, the lack of a long-term perspective on how to solve the housing problem and the lack of accurate statistics on the effectiveness of programs, along with obstacles such as

lack of financial resources and an incomplete institutional system, have caused numerous gaps in housing programs and policies (Hezarjaribi & Emami Qafari, 2019).

Statement of the need for research: One of the most fundamental reasons for the emergence and continuation of such a major crisis is the lack of a specific framework for the housing planning system and the lack of integrated management of urban housing (Neto & Arreortua, 2020). Despite extensive studies on the right to adequate housing for all individuals and the experience of the results of various housing policies in the world, the housing planning system as a single and separate whole has not yet been examined in depth (Silva et al., 2024). In fact, various studies have addressed different aspects of this issue, but none of them have recognized this issue as a comprehensive area with internal mechanisms. Most solutions to address housing problems have also been piecemeal, leading to a lack of coordination at different levels and a lack of transparency in the roles of the institutions involved (UNDP, 2017). Given the current housing crisis in the world, if this trend continues, the situation will get worse than it already is. However, it is necessary to fundamentally solve this problem.

Research Objectives and Questions: The present study has two main objectives: The first objective is to conceptualize and identify the indicators for evaluating and measuring the housing planning system in a general sense in the world, and the second objective is to identify the different dimensions of housing planning and present a conceptual, process and content model of the housing planning system in the world. Therefore, at the end of this research, the questions corresponding to each research objective will be answered.

1- What is the concept of the housing planning system and what are its evaluation and measurement indicators in a general sense in the world?

2- What are the different dimensions of housing planning and how are they related to each other in a conceptual, process and content model?

In the stages of this research, first, the concept and analysis of the subject are discussed by identifying definitions of the housing planning system in the global literature, then the macro theories supporting the subject are examined, the historical evolution of housing planning is examined, and the conceptual models of the subject are examined. Finally, a review of global theoretical and empirical texts is conducted with the aim of thematic classification, comparative comparison of texts, and presentation of indicators of the global housing planning system in order to obtain a process and content model of the subject through the part-to-whole inductive method.

2. Research Background

By examining previous studies, it is observed that a significant number of them have been written with the aim of developing an index system in the literature on the subject of the housing planning system (Adabre & Chan, 2020; Baratta et al., 2023; Faraji et al., 2024; Gan et al., 2017; Nuuter et al., 2015; Yip et al., 2017). Another group of studies has presented stakeholder-oriented models in the housing system and has demonstrated the mechanism of the three sectors: government, private and public (Angel et al, 1993; Olanrewaju et al., 2017). Some researchers have presented key success criteria for housing planning (Beard, 2021; Orihuela et al., 2017) and how inter-institutional relations and participation in the housing system (Angel et al, 1993; Hofmann, 2022). Others have examined the vital indicators of the housing system from policy-making and needs assessment to planning, design and implementation (Adabre & Chan, 2018). Some studies have presented a model for assessing the quality of sustainable and affordable housing in design and implementation and have proposed design standards and the degree of compliance with various criteria (Orihuela et al., 2017; Scally & Koenig, 2012; Wei & Wang, 2021), while others have examined the planning constraints and management challenges of the housing system (Berglund et al., 2020; Bramley, 1998, 2013). Finally, some have described the significant differences in housing indicators between different countries and the economic and social conditions in dealing with the housing system and have compared the housing systems of countries (Bramley, 1998; Miao & MacLennan, 2017; Nuuter et al., 2015). Some domestic studies have also emphasized the dimensions and components affecting housing prices (Aras et al., 2024; Varahrami, 2025), proposed policies for investment and prosperity in housing markets (Sabermanesh et al., 2020; Piri et al., 2023), housing planning foresight (Salavati et al., 2023), and quantitative indicators of strategic planning for sustainable urban housing (Arian Kia et al., 2023). However, as can be seen, none of the previous studies has presented a comprehensive framework that considers all dimensions of the housing system in a comprehensive and unobstructed manner. This means that each of these studies has focused on a part of the overall housing planning system and has not seen the overall framework that includes the components and relationships of this system in relation to each other. Therefore, the present study seeks to fill this gap in studies of the housing planning system in the world by examining authoritative global texts.

3. Methodology

In this section, the research onion and the research method are explained based on the layers of the research onion. The research onion is a six-layer pattern that specifies the philosophy, approach, strategy, method selection, time period, and data collection and analysis method. The present study, in terms of philosophy and considering its nature and applicability in solving a practical problem in the real world, has an applied nature; therefore, it is classified as action-oriented research and its research method is analytical-explanatory. In the second layer, this research is classified as inductive research due to reaching from details to generalities. In the third layer of the research onion, this research is classified as archival research; because theoretical and empirical studies and documents are to be examined in order to achieve a comprehensive pattern from them. In the next layer, the method selection is single-method and in the fifth layer, the time horizon of the study is cross-sectional. On the other hand, this research is classified as a library study in terms of the way it collects data to identify the various components of the housing planning system and the current process among them. Because it has used the study of theoretical texts and empirical documents in the world. The main sources used are domestic and foreign authoritative documents and specialized articles that have been collected based on a systematic search in the Scopus and Web of Science databases with the keywords housing planning, urban planning and housing policy, as well as in the Google Scholar database. The present study does not have a specific case study, but in the section on examining global experiences, it has been analyzed the empirical documents of housing planning in 12 countries that have had very useful lessons and were somehow successful in this field. Singapore's public housing program, Vienna's social housing program in Austria, Denmark's Housing for All program, Japan's public housing program, Germany's social housing program and its sustainable and affordable housing plan, South Korea's public housing program and its long-term rental program, Australia's national housing program and its housing allowance program, England's national housing program and its sustainable communities program, the US public housing program, the US rental housing subsidy program for low-income households, China's social housing program including the affordable housing plan, public rental housing and shared housing in China, Brazil's My Home-My Life program and India's Affordable Housing for All program are among these empirical study examples. On the other hand, the type of the present study is research and examines the global housing planning system including theoretical literature and experiences of different countries in the field of housing planning. This research, using 7 stages: examining concepts, historical development, macro theories supporting the subject, conceptual models, and theoretical and empirical texts in this field, through comparative comparison and thematic classification of these 18 theoretical studies, will ultimately end with explaining a content and process model for the housing planning system and presenting 72 housing planning system indicators. In the process of reaching this model, as mentioned, with an inductive approach, from the various components of the housing planning system obtained from research sources, we will arrive at a whole that is a content and process model that both explains the content and components of the housing planning system and well displays the process that is underway between these components.

4. Findings

In this section, the concepts of the housing planning system in the global literature, the historical evolution of housing planning, supporting macro theories and conceptual models of the subject, and a review of 18 theoretical studies and 12 empirical documents in the field of housing planning system will be examined.

4.1. Housing Planning System in World Literature

The concept of housing planning system has undergone many changes during political and social developments, and despite many similarities, there are also differences between these definitions. For example, some studies have seen the definition of housing planning system from a process perspective and have described the components of this process; for example, a group of authors believe that the housing planning system consists of a complex network of institutions and actors, both governmental and non-governmental, whose relationships between different institutions constitute all stages from demand management to supply within the framework of legal and financial relations (Arku, 2019; Robinson, 2003; Yan et al., 2021; X. Q. Zhang & Ball, 2016; Zhao & Zou, 2025). Others have proposed their definition from a managerial and content perspective and based on the role of stakeholders and beneficiaries and their relationship in the housing system; They believe that housing management includes governance practices with varying degrees of concentration, meaning a combination of administrative systems and market mechanisms and a housing delivery process that requires the simultaneous participation of

public and private institutions, based on complex patterns of interaction between them and the arrangement of tasks, institutions, and resources (Beer, 2011; Lin, 2018; McDermont, 2007; Olanrewaju et al., 2017; B. Zhang, 2020; Zhou, 2012). On the other hand, some studies have studied this area from a policy perspective and have defined the general concept of housing policy, which is very close to the concept of housing planning system, but they have used the term policy/policy instead of planning system. They believe that this concept is defined based on the dominant political ideology in each country's planning system and consists of planning and policy as a form of intervention in the market, as well as the rules and procedures by which different parties, in cooperation with each other, manage the housing sector using the tools available to them (Gurran & Whitehead, 2011; Kholodilin, 2022; Needham, 2011; Paris, 2007; Silva et al., 2024). Finally, by agreeing on all the definitions mentioned, we can arrive at a comprehensive and complete definition of the housing planning system, which is as follows: The housing planning system consists of an integrated institutional structure including specific relationships between stakeholders at all levels, with regard to the governance and participation of various sectors of housing demand assessment, financing, and supply, which pursues the goal of identifying and properly managing supply and demand through policy tools and framing laws and regulations.

4.2. Historical Evolution of Housing Planning

The historical development of housing planning can be divided into six general periods. The first period dates back to before the recognition of housing planning in the 1940s. Initially, the relationship between housing and urban planning was recognized in the English Housing and Town Planning Act 1910. However, in practice, until the 1930s, a deep gap remained between the two categories, especially between the demand and supply of housing in the post-war period (Gurran & Whitehead, 2011; Marcuse, 1980; Olcay, 2020). In the second period, after World War II, in the 1950s and 1960s, functional housing policy and the dominant industrial economic model led to the migration of workers to the outskirts of cities and increased urbanization, as well as illegal land acquisition and lack of services and infrastructure. With the help of local institutions and the provision of the necessary infrastructure, these settlements were formalized to become the primary method of housing production in developing countries. The establishment of housing ministries in the United States in 1959 and the World Bank's entry into direct housing financing in 1960 marked the entry of the formal sector into the housing sector (Leon, 2020; Ward, 2011). The third period dates back to the structuralist paradigms of the 1970s to the mid-1980s, when the independence and industrialization of less developed countries and the use of low-cost labor made informal settlements and self-supporting housing for workers an integral part of those cities. At the same time, in developed countries, the government was directly involved in the financing system and housing construction. In 1976, the Habitat I conference or the United Nations Human Settlements Programme was held, which became the background for the Habitat conferences that brought housing discussions to the attention of the scientific community and the political arena (Buckley & Kalarickal, 2005; Gurran & Whitehead, 2011; Olcay, 2020; Shucksmith & Sturzaker, 2011; Ward, 2011; Zhang & Ball, 2016). The fourth period coincided with the neoliberal paradigms from the mid-1980s to the 1990s, coinciding with the emergence of the World Bank, which reduced direct government intervention in housing and eliminated support schemes and housing subsidies, while reducing income and housing affordability. The resulting political unrest led to a sense of need for policies that guided the private sector and changed the role of the government to a facilitator in housing markets. Similarly, the withdrawal of the World Bank from direct interventions in housing led to a reduction in financial resources and the need for private financial institutions to enter the housing market. Also, the lack of information on housing demand led to the development of the 1989 World Bank Housing Indicators Program and the United Nations Human Settlements Programme to collect data from 53 cities as the first empirical basis for assessing the effects of global policies on housing supply. (Arku, 2019; Buckley & Kalarickal, 2005; Gurran & Whitehead, 2011; Shucksmith & Sturzaker, 2011; Ward, 2011; Zhang & Ball, 2016). In the fifth period, housing as a determinant of sustainable cities was in the late 1990s to 2010s, and statements by international development agencies, such as the Habitat II conference in 1996, initially had a purely equitable approach to housing and the provision of shelter for all, but gradually improved housing quality and social issues became more prominent (Arku, 2019; Baker & Evans, 2016; Leon, 2020; Olcay, 2020). The sixth period, the period of decentralization, institutional strengthening and good governance of housing, is from the 2010s to the present. In this period, participatory concepts in governance were seen in a more practical way. The emergence of new housing finance systems influenced by the complexity of economic systems, the discussion of housing policy as a coordinating institutional framework in the housing management and supply system, the introduction of rental policies alongside other tenure options, and issues such as sustainable housing and energy, preserving existing housing (urban regeneration and slum upgrading), preventing urban sprawl and protecting and revitalizing historical and cultural heritage, and finally, the application

of digital technologies in housing governance (one of the recent approaches in affordable housing management in China) have been raised since the 2010s (Arku, 2019; Buckley & Kalarickal, 2005; Leon & Leon, 2020; Olcay, 2020; Ward, 2011; Zhao & Zou, 2025).

4.3. The Macro Theories Supporting the Topic

There are many theories in urban planning, each of which is related to housing planning in some way. The following introduces 5 macro theories supporting the research topic, which include principles related to the housing system. The first theory is Sustainable Development, which is defined as development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. In the housing debate, ensuring access for all to adequate, safe and affordable housing with basic services, and upgrading slums while realizing all dimensions of sustainability in it; that is, socially acceptable, economically appropriate, technically and physically feasible, robust and environmentally compatible, and managerially and institutionally integrated (Aliu, 2022; Habitat for Humanity, 2021; Ibrahim, 2020; Meshkini, 2023; Silva et al., 2024; Thörn et al., 2018; Wang et al., 2021). The next theory is Participatory Planning. Participatory planning is a political practice in which state and non-state actors, together with the local community and all marginalized groups, reach a consensus on setting development goals and visions. In the participatory housing planning process, facilitated by planners, all involved groups reflect their priorities and combine expert and local knowledge to address issues such as participation in land use regulations, especially residential, urban renewal and redevelopment, conflicts of interest in neighborhood degradation and transformation interventions, interagency partnerships in financing and national housing subsidy models (Ahmadova & Yamacli, 2022; Ben-meir, 2017; Friendly, 2019; Kantemeridou et al., 2013; Legacy, 2017; Nae et al., 2019; Shapely, 2011; Zonke & Matsiliza, 2015). The third theory is Urban Governance. Good urban governance is a set of governance beyond the state and is a combination of horizontal networks of public, private and civil society actors to coordinate, implement and monitor policies, roles and responsibilities and resources within the framework of institutional capacity to respond to challenges through participatory processes. In discussions of governance in urban planning and development, the governance of the housing planning system or in other words housing governance means the analysis of demand, the system of production and financing, supply and management of housing and consists of various institutions that, in coordination with each other, shape the development process (Barakpou & Keivani, 2016; Beer, 2011; Brill, 2022; Deng, 2018; Flint, 2004; Galuszka, 2019; McCann, 2017; Noring et al., 2022; Olanrewaju et al., 2017; Zhou, 2012). The fourth theory, Urban Renewal, is defined as a process of slum clearance and physical reconstruction that considers other elements such as heritage conservation, revitalization of economically and socially deprived areas, infrastructure, urban design, as well as achieving the goals of housing sustainability, land value enhancement, and environmental quality improvement. Given the relationship between urban renewal and housing prices, as well as the role of the government in the governance structure of urban renewal and national housing loans, urban renewal is essential to maintain the economy and image of the city and promote the economic benefits of neighborhoods, while the role of markets in urban housing renewal, housing market prosperity, and attracting capital to deprived areas by restoring public and private services to them cannot be ignored (De Jong & Verkuyten, 1996; Du et al., 2020; Hyra, 2012; Liang et al., 2020; Pezzica et al., 2022; Smets & Watt, 2017; Webb, 2010; Zheng et al., 2014). The concept of The Right To The City theory is a socio-economic and legal-moral right that every citizen has by virtue of being part of the city and belonging to it, and it is manifested in various social, political and economic dimensions, including housing in the urban context and the right to urban life in general. This definition criticizes the privatization and commodification of housing and urban justice and emphasizes the priority of the use value of the city over its exchange value, the slogan “cities for people, not for profit”, to the extension of the right to residence to the right to participate in placemaking (Aalbers & Gibb, 2014; Atttoh, 2011; King, 2019; Pastrana & Vols, 2024; Pérez, 2017; Rolnik, 2014).

4.4. Conceptual Models of the Housing Planning System

This section briefly introduces 14 conceptual models in the field of housing planning system and explains their main components in order to provide a background for the comprehensive conceptual model of the housing planning system of the present study. The first model is the research of Silva et al., which considers different dimensions of the housing system, including technical and technological aspects, institutional aspects, economic and social and environmental factors (Silva et al., 2024). Raco et al., in the multi-center regulatory environment of housing institutions in England, show the role of each (Raco et al., 2024). The four main components of Erlwein et al.'s model are: actors, rules of the game, distribution of power and resources between the actors involved, and discourses and relationships of the stakeholders (Erlwein et al., 2023). Brill's model describes development actors and their relationships, the role of private institutions in the housing system, the impact of regulatory environments,

and how institutional investment in private rental housing is conducted (Brill, 2022). Yu and Xu's research proposes a process model for China's national low-income housing policies, which examines the alignment of local government policies with the central government and the balance between them (Yu & Xu, 2022). Zhang's model for Canada's multi-level housing finance system outlines the components of federal and provincial government partnerships in housing construction and management by the Canada Mortgage and Housing Corporation (Zhang, 2020). Ekpo's research provides a model that includes the concept of the context and policies of the housing system, interaction patterns such as land, capital, and labor, the scope of action, and actors and outputs (Ekpo, 2019). Lin presents a model for inter-institutional relations involved in the provision of social housing, which shows the structure of power relations and their mechanism in the provision of affordable housing and the extent of the role of the public and private sectors (Lin, 2018). Tsemberis' model includes the recognition of the characteristics of the demographic and environmental context, the context of intervention in the housing system, and the objectives and outputs of the housing system (Tsemberis & Asmussen, 2016). Ogunnaike et al.'s model consists of four main components and the relationships between them, including enablers (public and private sectors), drivers and organizations (regulatory and financing institutions), residents with different incomes, and housing tenure (Ogunnaike et al., 2013). Bramley's model, which illustrates institutional integration at all levels of housing, consists of needs assessment, supply, financing systems, development control, and land provision, taking into account environmental capacity (Bramley, 2013). Abramsson's model consists of a housing needs assessment to its supply, including household characteristics, income, capital and local housing market, institutional structure of planning and policy-making and choosing between opportunities while constraints for specific actions of the housing system (Abramsson, 2011). Johnson's model shows the position of each component, including the way of supply and financing of capital and the evaluation of the results of policies, the method and amount of production, housing development plans, type of ownership, income diversity and duration of development (Johnson, 2007). Yarwood's model is a process model derived from the experience of regional housing management and planning in England with the participation of the public, private and voluntary sectors and neighborhood councils from the development of the plan to the construction of housing (Yarwood, 2002).

Table 1: Conceptual models of the housing planning system,

Row	Author's Name	Publication Year	Model Introduction	Main components
1	Silva et al.	2024	Dividing thematic areas of affordable housing based on different dimensions of the housing system	1- Technical and technological aspects, 2- Institutional aspects, 3- Economic and social factors, 4- Environmental dimensions
2	Raco et al.	2024	Including the multi-center regulatory environment and housing system institutions and their duties	Regulation, financing, complaint handling, policy implementation, determining the location, nature and extent of residential development.
3	Erlwein	2023	Components of the housing system in interaction with each other, including actors, power and resources, laws and discourse	1- Housing planning actors, 2- Rules of the game, 3- Power and resources and their distribution among the actors involved, and 4- Discourses of the stakeholders.
4	Brill	2022	Actor relationships in the London housing system	1- The role of real estate developers and the private sector, 2- Supervision of investors, 3- Institutional investment in rental housing.
5	Yu & Xu	2020	Process model of China's national low-income housing policies	1- and institutional adaptation of housing policy at the local and central scales, 2- balancing local incentives and central government restrictions.
6	Zhang	2020	A model for a multi-level institutional and financial housing system in Canada.	1- Limited participation of the federal and provincial governments in housing investment and construction, 2- Management of the Canada Mortgage Corporation.
7	Ekpo	2019	The housing development framework and its	1- Context, including laws and policies. 2- Scope, including government officials and developers, 3-

Row	Author's Name	Publication Year	Model Introduction	Main components
			constituent institutional and non-institutional components	Interaction patterns such as land, capital, labor, 4- Production of desired outputs.
8	Lin	2018	Inter-institutional relations in housing provision and how they work	1- The role of institutions in providing housing, 2- The role of government and private sector in planning, policy-making, financial management, monitoring and implementation.
9	Tsemberis & Asmussen	2016	Housing system including context, intervention and outcome areas	1- Demographic characteristics and environmental context 2- Intervention section including presentation of a housing model with consumer preference, 3- Outputs and results.
10	Ogunnaike et al.	2013	The housing system includes 4 main components and an explanation of the relationships between these components.	1- Public and private enablers, 2- Regulatory framework and financing, 3- Income diversification, 4- Housing type and tenure.
11	Bramley	2013	Housing system stages and institutional integration up to the local housing level	1- Forecasting and needs assessment, 2- Supply, 3- Financing systems, 4- Land supply and capacity, 5- Household economics and demography.
12	Abramsson	2011	Housing system model including stages, choices, and limitations	1- Household characteristics, 2- Local housing market, 3- Institutional structure, 4- Laws and regulations, 5- Choices and constraints in housing actions.
13	Johnson	2007	Classification of the housing system structure by defining the position of each component	1- Characteristics: Type of enterprise and subsidy, 2- Production structure: Cost, method, environment, production rate, density, and scale, 3- Development type: Type of ownership, income diversity, compatibility in the vicinity, and development duration.
14	Yarwood	2002	A process model with participation between the public, private, and voluntary sectors in the housing system	1- Objectives and limitations, 2- Housing needs assessment and tenure and preferences, 3- Suitable site and verification of plan details, 4- Permit application, 5- Proposal of subsidy to housing and construction company

According to Table 1, by examining the main components of the conceptual models of the housing planning system, it was observed that some models achieve the desired goals and outcomes of the housing system in terms of thematic dimensions, others according to the division of tasks of the involved institutions, other types of models are a pyramid of the involved areas or a multi-level model based on the tasks of different levels of planning and financing, or by specifying the factors of the context and its characteristics and the actors of the field of action based on interaction and intervention patterns. In other types of conceptual models, the process of determining housing development policies and programs according to needs assessment and existing demand and providing the required material and non-material resources, up to the stage of implementing housing projects, has been seen as a process in the housing planning system. For this purpose, if we want to present a comprehensive conceptual model that is a combination of all these models, we must use all the aforementioned approaches, both in a process and in the form of examining the various components of the housing planning system, to explain the process and content conceptual model.

4.5.Theoretical and Empirical Texts and Identification of Housing Planning System Indicators

This section reviews global literature and reputable international articles as well as housing plans and programs in different countries around the world, and finally, after a comparative comparison of these two types of texts and a summary of this literature and studies, an index system for the housing planning system is presented. After an advanced search in the Scopus and Web of Science databases with the aim of having a thematic connection with housing planning, as well as searching in housing documents of various successful countries in the field of housing,

18 reputable international articles from 1993 to 2024 and 12 housing programs from 12 countries around the world from 2012 to 2023 were selected to be examined in this section.

In Table 2, 18 studies that were reviewed from theoretical texts in the global literature to find a system of global general indicators in the field of housing planning are identified based on the criteria of the expert, study title, year of publication, number of indicators, objective, method and findings. The time period of the studies was between 1993 and 2024, half of which are related to the 2010s (especially 2017 with 5 studies), and in the next category, the frequency of studies from the 2020s onwards constitutes more than a third. From these 18 studies, excluding overlaps, a total of 271 indicators were extracted, among which the article by Barata et al. (2023) and the article by Gan et al. (2017) have the highest number of indicators with 30 and 22 indicators, respectively.

This table shows that in terms of content, in these studies, the general trend from the past has been to examine housing indicators across different countries with different economic conditions, income levels, land and housing prices, and infrastructure costs, and the impact of regulatory frameworks and financial institutions on access to housing and its quality (Angel et al., 1993; Bramley, 2013; Nuuter et al., 2015; Yip, Ng et al., 2017). On the other hand, in some studies, housing planning constraints, including formal constraints and the impact of planning policies on land supply and housing prices, are evident in the studies. Improving housing policies to increase the stability of the housing market and emphasizing the importance of changes in political systems and their impact on the housing system have been considered in these theoretical studies. In recent decades, the prominent role of governance and stakeholders involved in improving the supply of affordable housing, the financing sector, and most importantly, coordination between the pillars of governance in housing have been emphasized. In this category, issues such as pre-planning and implementation assessments and indicators, such as appropriate location and consideration of services and employment for residents, criteria for selecting and prioritizing target groups, as well as integrated management of housing programs and diverse but dedicated funding and revenue streams, have also been raised (Beard, 2021; Bramley, 1998; Gan et al., 2017; Hofmann, 2022; Miao & MacLennan, 2017; Olanrewaju et al., 2017; Scally & Koenig, 2012). Another group of studies has focused on sustainability in the design and implementation of housing projects, focusing on its various dimensions in design standards, such as the degree to which the housing program or plan complies with technical, safety, climate, security, aesthetics, local culture, etc., and has emphasized the critical success indicators of sustainable affordable housing (Adabre & Chan, 2018, 2020; Faraji et al., 2024; Wei & Wang, 2021). Another group of researchers has focused more on decision-making methods and tools and fair and transparent allocation of resources in housing projects, as well as the lack of attention to social and welfare services and the lack of attention to the housing planning process as a political and ideological matter, not just a technical one (Baratta et al., 2023; Berglund et al., 2020; Orihuela et al., 2017).

Table 2: Summary of global theoretical literature studies in the field of housing planning system, .

Author	Study Name	Year	Number of Indicators	Purpose	Method	Findings
Faraji et al.	Affordable housing development criteria	2024	22	Identifying indicators that affect the success of mass housing projects	Delphi technique, AHP method and case study	Adhering to design principles that are compatible with optimal energy consumption, local materials and methods, and adapting the design to the local climate.
Baratta et al.	New housing policy tools	2023	30	Defining an indicator system for assessing housing quality	Document analysis and literature review	Possibility of evaluating and comparing projects with the designed index system and improving housing quality and reducing energy consumption
Hofmann & Zavare	Better reconstruction and long-term housing recovery	2022	5	Examining Housing Resilience and the Role of Insurance in Post-Disaster Recovery	Case study, interview and document analysis	Significant impact of insurance and governance systems on recovery speed

Author	Study Name	Year	Number of Indicators	Purpose	Method	Findings
Wei & Wang	Assessing the impact of public housing service quality	2021	15	Determining key factors of public housing service quality in Shanghai.	Hierarchical analysis of indicators	Government support and market drive, interaction between factors, focus on demand-side factors rather than just emphasizing supply
Beard	Housing trust funds at the city level	2021	9	Identifying success factors and lessons from successful examples	Comparative analysis of interviews and policy documents	Empirical data priority (housing needs, incomes), integrated management with other programs and dedicated revenue streams
Berglund et al.	Intersectoral planning for housing provision	2020	11	Examining the political dimensions of intersectoral housing planning processes	Multiple case study and interview	Technical rather than political perspective, lack of comprehensive housing policy, and priority of statistical knowledge over objective knowledge
Adabre & Chan	Sustainability assessment model for housing projects	2020	14	Developing a Sustainable Assessment Model for Affordable Housing Projects in Ghana	questionnaire and fuzzy hybrid assessment	Development of the final affordable housing assessment model including 5 main criteria along with 14 corresponding indicators
Adabre & Chan	Criteria for the success of affordable and sustainable housing	2018	17	Developing a conceptual framework to assess the success of these projects	Systematic review and analysis with VOSviewer	Identify 17 success indicators for sustainable affordable housing and provide a conceptual framework including product, project and project management success.
Yip et al.	Sustainable housing development indicators	2017	14	Providing a comprehensive conceptual framework for assessing sustainable housing development	Systematic review	Providing a conceptual framework in all dimensions of sustainability and emphasizing adapting indicators to the context
Orihuela et al.	Residential Design Performance Indicators	2017	13	Providing a structured control panel for the housing design phase	Literature review and comparative analysis of programs	Providing a control panel for housing project success criteria and improving monitoring of residential projects
Olanrewaju et al.	Developing a business framework for housing governance	2017	13	The impact of governance on ownership and identifying factors for supply success	Completing the questionnaire and factor analysis	The impact of governance on improving supply, the challenge of financing and shortage of raw materials, the need for a housing governance framework
Gan et al.	How can affordable housing become more sustainable?	2017	24	Identifying sustainability indicators for affordable housing development	Literature review, questionnaire and nonparametric test	Identifying 24 indicators, emphasizing incentive policies for developers to integrate housing sustainability

Author	Study Name	Year	Number of Indicators	Purpose	Method	Findings
Miao & MacLennan	Exploring the middle ground between government and market	2017	7	A categorized framework of changes in the contemporary housing system	Literature study and experiences review	Emphasis on changes in political systems and their impact on the housing system, along with the results and outputs of this system.
Nuuter et al.	Comparing the sustainability of the European housing market	2015	18	Assessing housing sustainability in Estonia and developing an assessment system for it	Multi-criteria proportional evaluation method	The impact of economic indicators and social rental housing policies on increasing the sustainability of the housing market
Bramley	Housing market models and planning	2013	11	Examining the impact of housing market economic models on planning in the UK	Econometric model analysis and comparative comparison	Land constraints reduce supply and increase prices, local policies lead to reduced supply in high-demand areas
Scally & Koenig	Redefining the outcomes of affordable rental housing development	2012	19	Providing a framework for evaluating the results of affordable rental housing development	Systematic review and presentation of a conceptual framework	The positive effects of affordable housing at the household, project, and community levels, the need for a comprehensive assessment of housing policy, and the lack of household-based data
Bramley	Planning restrictions and the impact on residential land supply	1998	11	Investigating the impact of land use planning on residential land supply, density, and the housing market	Cross-sectional statistical analysis, regression modeling, and factor analysis	Identifying the 4 main dimensions of planning constraints and the greater tendency of wealthy regions towards restrictions and poor regions towards policies facilitating construction
Angel et al.	Housing Indicators Program	1993	10	Developing new institutional frameworks for managing the housing sector	Questionnaire and secondary data analysis	Strong relationship between infrastructure costs and housing prices, impact of regulations and financial institutions on housing access and quality

In the next section, a brief review of the experiences studied in 12 countries around the world, including successful programs in various European, American, Asian, and Australian countries in the field of housing systems and the time of publication between 2012 and 2023, was conducted. In Table 3, each experience is reviewed, taking into account the goals, methods, and outputs and results of the program or plan. The oldest plans in the global experiences of the present study are related to one of the housing programs in the experience of Australia in 2012, and the newest plan is related to Denmark in 2023; but the share of experiences in the two decades of 2010 and 2020 is equal. The experiences in the housing field of Singapore, Austria, Denmark, Japan, Germany, South Korea, Brazil, and India were selected as successful examples with remarkable results in the field of housing planning, and the countries of Australia, England, the United States, and China were also selected and reviewed due to the detail of their plans and programs, as well as the presence of comprehensive and complete indicators for the success of housing programs. After extracting, reviewing, and analyzing the approaches, objectives, methods, and results and outputs of these experiences in Table 3, it was found that, in general, in Asian countries such as Singapore,

Japan, South Korea, China, and India, the dominant approaches in the field of housing planning have been to emphasize the role and duties of the government in providing affordable housing for the general public, especially low-income groups, and comprehensive planning and the development of a supportive but precise and strict legal framework in order to supply land and housing through long-term leasing and entrustment or increasing ownership, as well as controlling housing speculation (Keon et al., 2015; PMAY Guidelines, 2021; Ummah, 2019; Urban Renaissance Agency, 2021; Yu & Xu, 2022). On the other hand, in European countries, such as Austria, Denmark, Germany, and the United Kingdom, policies such as rent control, sustainable construction incentive policies, housing construction subsidies for private developers, increased government budgets for social housing, and the development of laws in accordance with energy efficiency requirements in housing, as well as financial support programs such as low-interest loans and rental subsidies, are on the agenda, and government relations are less visible in empirical studies of these countries (Ameo Chew, 2022; Bramley, 2016; Brill, 2022; Denmark Statistics, 2024; Droste & Knorr-Siedow, 2014; Raco et al., 2022; “German Social Housing,” 2017). In addition, in countries such as Brazil, the focus has been on policies to reduce the population living in informal settlements and improve the quality of housing construction and better location of projects near urban centers and services, and the impact of housing programs on poverty reduction and job creation has been considered (De Brito et al., 2020). In countries such as the United States, as well as some European countries and especially South America such as Brazil, policies to reduce homelessness and improve the quality of life are pursued through evaluating the impact of programs as well as distributing financial assistance and housing loans (Ameo Chew, 2022; De Brito et al., 2020; Olsen & Zabel, 2015). In Australia, however, to improve housing laws, state and local government executive guidelines, as well as support and financial programs such as low-interest loans and rental subsidies, have been put together, indicating a more comprehensive attention to different dimensions of the housing planning system, especially its institutional and governance dimensions, and multifaceted solutions to address the problems, dilemmas, and obstacles of this system (Davison et al., 2012; Gurran et al., 2018). The results of these studies, such as annual housing policy reports, controlling rents and housing prices, reducing inequality in housing allocation, constructing housing projects, etc., have been in line with achieving goals such as responding to potential housing demand and meeting its needs fairly and for all income groups, especially the low-income group, and reducing the gap between supply and demand, reducing homelessness, improving living conditions in deprived neighborhoods, and encouraging sustainable urban development and the participation of various institutions in housing planning. The total number of indicators mentioned in all 12 experiments was 277 indicators, excluding possible overlaps, with the Japanese housing program having 30 and Vienna, Austria having 27 indicators, having the largest number of indicators among these experiments.

Table 3: Summary of global experience studies in the field of housing planning system, .

Program Name	Organisation	Year	Number of Indicators	Purpose	Method	Outputs
Singapore Public Housing Program	Development Board of Singapore	2018	20	Providing housing for the general public, reducing housing shortages, strengthening ownership and ethnic diversity in neighborhoods	Housing data analysis, field and comparative studies	Designing a 99-year lease system for government lands and annual reports on housing market developments
Vienna Social Housing Program	Vienna Municipality and public housing development companies	2022	27	Providing quality housing for all citizens, maintaining social diversity, environmental sustainability, and strengthening public ownership	Demographic data analysis, comparative studies, economic evaluation	Construction of more than 220,000 social housing units, creation of mixed neighborhoods, reduction of housing inequality, and rent control in the project samples
Housing for All Denmark Program	Danish Ministry of Transport and Housing	2023	20	Providing affordable housing for all segments of society, sustainable urban development, and	Field studies, demographic data analysis, and public participation	Social housing development reports, land use maps and areas allocated to housing, and

Program Name	Organisation	Year	Number of Indicators	Purpose	Method	Outputs
				promoting social and cooperative housing		incentive policies for sustainable construction
Japan Public Housing Program	Housing Office of the Ministry of Land and Infrastructure of Japan	2020	30	Providing housing for low- and middle-income groups, sustainable urban development with urban compaction and density restrictions	Analyzing statistics and successful examples, simulating the effects of programs on the market	Construction of large residential complexes, development of earthquake-resistant housing construction standards, private sector incentive policies for social housing construction and renovation
Germany's social housing program and sustainable housing plan	German Federal Ministry of Housing and Urban Development	2014 & 2017	21	Providing housing for low-income groups in large cities, increasing social housing with controlled rents, promoting sustainability	Statistical analysis, economic modeling, and comparative comparison with other countries	Construction subsidies for private developers, energy efficiency requirements, increased government budget allocated annually to social housing, and implementation of pilot projects
South Korea's public housing program and long-term rental program	Ministry of Land, Infrastructure and Transport of South Korea	2015	25	Controlling the increase in housing prices and reducing speculation in the real estate market, sustainable development with a focus on renovating run-down neighborhoods and increasing the share of rental housing in the housing market	Secondary data analysis, field studies, economic modeling, and comparative studies	Increasing the construction of public housing with controlled rents, introducing a variety of tenancy models (such as rent with the right to buy), developing stricter laws to control housing speculation, and developing urban regeneration projects in large cities.
Australia's National Housing Program	Australian Department of Housing and Community Services	2012 & 2018	24	Increasing access to housing, reducing homelessness and improving housing security, diversifying housing types and reducing market pressure	Statistical and field studies, comparison with other countries, and economic simulation	Policy reports to improve housing laws, implementation guidance for state and local governments, financial support programs, and model social housing projects
England's National Housing Programme	UK Department for Housing and the Centre for Housing Studies	2021	22	Increasing housing supply, improving quality, reducing the gap between supply and demand, and supporting local communities and sustainable development	Quantitative and qualitative analysis and modeling to predict needs	Policy reports for the government, a database of housing prices and access, implementation plans for new housing construction, and socio-economic impact assessments of programs
America's public housing program	US Department of Housing	2015	20	Providing housing for low-income families and the homeless, improving conditions in deprived	Analyzing statistical and field data and	Annual reports on the number of housing units built or renovated, assessments of the impact

Program Name	Organisation	Year	Number of Indicators	Purpose	Method	Outputs
	and Urban Development			neighborhoods, and private participation in housing construction	assessing socio-economic impacts	of programs on reducing homelessness and improving quality of life, and mortgage data
China's social housing program	Ministry of Housing and Urban-Rural Development of China	2020	21	Reducing the class gap in access to housing, controlling the housing price bubble, and promoting sustainable urbanization	Big data analysis, qualitative and comparative studies, and economic simulation	Declining rental prices in second and third-tier cities, increasing home ownership rates in urban areas, and criticism of construction quality and unfair distribution in some provinces
My Home, My Life Brazil Program	The Brazilian government, in collaboration with the Ministry of Cities	2020	24	Creating jobs in the construction sector, improving access to housing with government subsidies, and reducing informal settlements	Statistical and field data, program impact assessment, comparison with global programs	Relative decrease in the population living in informal settlements, criticism of the quality of construction and location of some projects, impact on poverty reduction and job creation
Affordable Housing for All Program in India	Ministry of Housing and Urban Affairs, Government of India	2020	23	Providing housing for low-income groups, developing infrastructure along with housing, and using sustainable construction technologies	Statistical, field, and comparative analysis and economic modeling of housing financing	Development of rapid construction technologies and socio-economic impact assessment reports (such as reducing slums in some cities)

4.6. Comparative Comparison of Theoretical and Empirical Studies

A closer look at the theoretical and empirical literature reveals that the category that has been addressed more than others in both types of theoretical and empirical studies is housing demand management and access, with 27.7 percent, followed by the areas of finance and resource provision, as well as housing management and evaluation during and after supply, both in second place with about 18 percent, the legal and planning structure of housing with 15.2 percent in third place, and housing governance with 11.1 percent. The area of physical-spatial-environmental quality of housing also has the lowest percentage among the subject areas addressed in the theoretical and empirical literature reviewed, with about 9.7 percent, which indicates the need for further studies in the areas of planning, governance, and quality of housing supplied.

However, if we examine separately which areas each type of study has entered the most and then compare theoretical and empirical studies to determine which type of texts each area has been studied in, we can see that among theoretical texts, the subject area that has received the most attention is the field of finance and resource provision with 27.2 percent, and the lowest percentage is the category of governance in housing with 1.5 percent. Among them, after the financial field, the categories of physical-spatial-environmental quality are 24.4 percent, demand management and access to housing with 19.3 percent, legal and planning structure with 13.6 percent, and management and evaluation of housing during and after supply with 10.2 percent. In contrast, in empirical studies, we see the highest percentage of the category of demand management and access to housing with 26.9 percent and the lowest percentage of the category of legal and planning structure of housing with 1.9 percent. Meanwhile, in the second to fifth place, respectively, with 17.8%, are the category of housing management and evaluation during and after supply, the category of housing governance with about 17%, the financial and resource provision area with 16.1%, and the physical-spatial-environmental quality of housing with 12.8%.

These studies indicate that the most and least topics that theoretical and empirical texts have addressed are different, and theoretical texts have mostly addressed the areas of financing and resource provision in the housing

system and the physical quality of housing, and have very little addressed the areas of housing governance and management during and after supply, as well as the legal and planning structure of housing. On the other hand, empirical and practical studies of housing planning show that they have focused most on managing demand and access to housing and have addressed issues such as governance, financial and resource provision, housing quality, and legal structure and planning in the housing system, much less.

5. Discussion

In this section, after categorizing the material by subject and presenting the indicators mentioned in theoretical and empirical studies, as well as finding points of commonality and difference between them, a process and content model of the housing planning system is presented.

5.1. Subject Classification of Studies

Based on the review of these studies, in order to break down the issue of the housing planning system into its constituent areas, this area can be divided into 6 subject categories, which are given in Table 4, along with explanations and theoretical and empirical sources for each of them. As is clear in Table 4, the first category, titled **Demand Management and Access to Housing**, examines socio-economic areas such as the income level of the target household, the level of equitable access of people and low-income groups to housing, and calculating the affordability of housing prices relative to annual income, the level of housing shortage, the level of adequate, unauthorized or dilapidated and vacant housing stock, homelessness, and the level of housing ownership. **The Legal and Planning Structure of Housing** is the second subject category. This category describes the functions of housing programs, from determining the location of housing projects to the number of units planned for different income groups, the program schedule, the waiting time for applicants, the approval rate and the time required to issue permits, and the impact of policies on housing prices. Also, the flexibility and reviewability and the degree of compliance of housing programs with superior programs are all in this category. In the third category, called **The Area of Finance and Land and Resource Provision**, the amount and diversity of income sources in financing housing construction, the financial sustainability of housing institutions and programs, the amount of government subsidies for the housing sector, housing loans and their interest rates and repayment terms, calculating the operating costs of implementing a housing construction project, the return on private investment in housing, and the correct forecasting of housing budget allocation in relation to implementation costs are examined. Also, in the issue of land and resources, issues such as the share of land for housing development, land use efficiency in terms of optimizing housing density per hectare, human resource provision, and optimal use of local resources and forces have been examined. The fourth category, **Housing Management and Evaluation During and After Supply**, is a category that deals with the number of residential units built annually, the rate of progress and completion of housing projects, the ratio of supply to potential housing demand, and the use of new technologies and methods in housing construction. This category also measures the satisfaction of residents and beneficiaries with housing, the impact of new housing on the value of surrounding properties and the health of residents, assessing the legal impact on the housing project, assessing social impacts, examining the level of construction violations, and in general, the efficiency of housing management after construction. The fifth category, called **Physical-Spatial-Environmental Quality of Housing**, examines the quality of housing construction, meaning the compliance of the housing project with various standards in design, as well as the design of housing in accordance with human scale and with sufficient space, and emphasizes the use of environmentally friendly materials and energy efficiency in residential units. Also, attention to proper access to various infrastructures and facilities is worth mentioning. In addition, the average life of buildings and the rate of reconstruction of dilapidated housing are among the important physical criteria in this category that are used to measure the quality of existing housing. Finally, the last category is **Governance in the Housing System**, which fully describes the type of governance and innovative management model in the housing system, mentioning issues such as coordination between national and local institutions to reduce differences and duplication of roles in the housing system, the existence of oversight committees in the planning process to the implementation of housing projects, the diversity of stakeholders involved in decision-making and their level of participation, transparency at all levels, especially in housing allocation, as well as public access to housing information, the level of efficiency and responsiveness of the responsible institutions to residents' complaints, and finally, the level of public presence and influence in housing planning and policy-making meetings.

Table 4: Thematic classification of the housing planning system, .

Row	Category Title	Description	Resources
1	Demand Management and Access to Housing	Examining the economic-demographic areas of demand management, access to housing for low-income groups, affordability of housing prices, housing supply and shortage, and homelessness, and the impact of population growth and inflation on demand.	(Alleviation, 2022; Amee Chew, 2022; Bramley, 2016; Brill, 2022; Davison et al., 2012; De Brito et al., 2020; Denmark, 2024; Droste & Knorr-Siedow, 2014; Gurran et al., 2018; Keon et al., 2015; Olsen & Zabel, 2015; PMAY Guidelines, 2021; Raco et al., 2022; “Social Housing,” 2017; <i>Urban Renaissance Agency</i> , 2021; Ummah, 2019; Yu & Xu, 2022) (Adabre & Chan, 2018, 2020; Angel, S., Mayo, S. K., & Stephens, 1993; Baratta et al., 2023; Beard, 2021; Berglund-Snodgrass et al., 2020; Bramley, 1998, 2013; Faraji et al., 2024; Gan et al., 2017; Miao & Macleannan, 2017; Nuuter et al., 2015; Olanrewaju et al., 2017; Scally & Koenig, 2012; Wei & Wang, 2021; Yip, Ng et al., 2017)
2	Legal and planning structure of housing	Housing plans and their functions include determining housing locations, the number of planned units, the time from planning to implementation, approval of building permits, the impact of financial and planning constraints on supply, the ability to review policies, and the degree to which housing plans are consistent with higher-level plans.	(Adabre & Chan, 2018; Baratta et al., 2023; Beard, 2021; Bramley, 1998, 2013; Faraji et al., 2024; Hofmann, 2022; Nuuter et al., 2015; Olanrewaju et al., 2017; Orihuela et al., 2017; Scally & Koenig, 2012; Wei & Wang, 2021; Yip, Ng et al., 2017) (Alleviation, 2022; Amee Chew, 2022; Bramley, 2016; Brill, 2022; Davison et al., 2012; De Brito et al., 2020; Droste & Knorr-Siedow, 2014; Gurran et al., 2018; Keon et al., 2015; Olsen & Zabel, 2015; PMAY Guidelines, 2021; Raco et al., 2022; “Social Housing,” 2017; <i>Urban Renaissance Agency</i> , 2021; Ummah, 2019; Yu & Xu, 2022)
3	The Area of Finance and Land and Resource Provision	Financing implementation costs and diversifying its revenue sources, financial sustainability of institutions, government subsidies and loans, and private investment in housing, proportional allocation of budget to implementation, land provision and efficiency of its use, and provision of human resources and resources.	(Adabre & Chan, 2018, 2020; Angel, S., Mayo, S. K., & Stephens, 1993; Baratta et al., 2023; Beard, 2021; Bramley, 1998, 2013; Faraji et al., 2024; Gan et al., 2017; Hofmann, 2022; Miao & Macleannan, 2017; Nuuter et al., 2015; Olanrewaju et al., 2017; Orihuela et al., 2017; Scally & Koenig, 2012; Wei & Wang, 2021; Yip, Ng et al., 2017) (Alleviation, 2022; Amee Chew, 2022; Bramley, 2016; Brill, 2022; Davison et al., 2012; De Brito et al., 2020; Denmark, 2024; Droste & Knorr-Siedow, 2014; Gurran et al., 2018; Keon et al., 2015; Olsen & Zabel, 2015; PMAY Guidelines, 2021; Raco et al., 2022; “Social Housing,” 2017; <i>Urban Renaissance Agency</i> , 2021; Ummah, 2019; Yu & Xu, 2022)

Row	Category Title	Description	Resources
4	Housing management and evaluation during and after supply	Number of units built annually and the ratio of supply to potential demand, progress and completion rate of housing projects, new construction methods, measuring resident satisfaction, impact of housing on surrounding property values and residents' health, assessment of legal and social impacts of housing projects, rate of construction violations	(Alleviation, 2022; Amee Chew, 2022; Bramley, 2016; Brill, 2022; Davison et al., 2012; De Brito et al., 2020; Denmark, 2024; Droste & Knorr-Siedow, 2014; Gurran et al., 2018; Keon et al., 2015; Olsen & Zabel, 2015; PMAY Guidelines, 2021; Raco et al., 2022; "Social Housing," 2017; <i>Urban Renaissance Agency</i> , 2021; Ummah, 2019; Yu & Xu, 2022) (Adabre & Chan, 2018, 2020; Angel, S., Mayo, S. K., & Stephens, 1993; Baratta et al., 2023; Berglund-Snodgrass et al., 2020; Faraji et al., 2024; Gan et al., 2017; Miao & Maclellannan, 2017; Nuuter et al., 2015; Olanrewaju et al., 2017; Orihuela et al., 2017; Scally & Koenig, 2012; Wei & Wang, 2021)
5	Physical-Spatial-Environmental Quality of Housing	Housing construction quality, compliance of the housing project with safety, environmental, aesthetic and local standards, design appropriate to human scale and per capita, use of environmentally friendly materials and energy efficiency, appropriate access to facilities and infrastructure, average life of buildings and renovation rate of dilapidated housing	(Alleviation, 2022; Amee Chew, 2022; Bramley, 2016; Brill, 2022; Davison et al., 2012; De Brito et al., 2020; Denmark, 2024; Droste & Knorr-Siedow, 2014; Gurran et al., 2018; Keon et al., 2015; PMAY Guidelines, 2021; Raco et al., 2022; "Social Housing," 2017; <i>Urban Renaissance Agency</i> , 2021; Ummah, 2019; Yu & Xu, 2022) (Adabre & Chan, 2018, 2020; Angel, S., Mayo, S. K., & Stephens, 1993; Baratta et al., 2023; Berglund-Snodgrass et al., 2020; Bramley, 1998; Faraji et al., 2024; Gan et al., 2017; Hofmann, 2022; Nuuter et al., 2015; Olanrewaju et al., 2017; Orihuela et al., 2017; Scally & Koenig, 2012; Wei & Wang, 2021; Yip, Ng et al., 2017)
6	Governance in the Housing System	The type of governance and innovative management model, coordination between national and local institutions and prevention of conflicts and duplication of roles, the existence of oversight in the planning process from implementation to implementation, the level of participation among diverse stakeholders involved in decision-making, transparency in housing allocation, efficiency and responsiveness of institutions to residents' complaints.	(Adabre & Chan, 2020; Baratta et al., 2023; Beard, 2021; Berglund-Snodgrass et al., 2020; Hofmann, 2022; Wei & Wang, 2021) (Alleviation, 2022; Amee Chew, 2022; Bramley, 2016; Brill, 2022; Davison et al., 2012; De Brito et al., 2020; Denmark, 2024; Droste & Knorr-Siedow, 2014; Gurran et al., 2018; Keon et al., 2015; Olsen & Zabel, 2015; PMAY Guidelines, 2021; Raco et al., 2022; "Social Housing," 2017; <i>Urban Renaissance Agency</i> , 2021; Ummah, 2019; Yu & Xu, 2022)

5.2. Providing Indicators for Measuring the Housing Planning System

In this section, the indicators examined in the 30 sources mentioned in the theoretical and empirical texts in the global literature that were discussed in the previous sections are marked with a solid black circle in Table 5, along with the studies in which these indicators are mentioned. Based on this table, in the last column, the total repetition of each indicator in these theoretical and practical sources is indicated. In total, 54 distinct indicators have been extracted from theoretical studies and 61 distinct indicators have been extracted from empirical studies. The

highest repetition was related to an indicator in the supply area entitled Access to infrastructure and facilities in the housing program/project (education, work, shopping, health and treatment, recreation and culture, and green and transportation) with 20 repetitions in theoretical and empirical texts, followed by two indicators: the ratio of average housing price to average annual household income and housing construction quality inspection (the degree to which the housing project complies with safety, environmental, social, indigenous, aesthetic, etc.) standards with 18 repetitions. It can be inferred from this table that more than half of the indicators, i.e. about 60 percent of them, are mentioned in both types of studies; that is, in both theoretical and empirical studies. However, the amount of attention paid to some indicators and their subject categories in theoretical or empirical studies has been greater than the other. For example, more theoretical studies have been included in the field of finance and resource provision, with indicators such as the amount and diversity of sources of financing income, land use efficiency (optimization of housing density per hectare), and optimal use of local resources and forces, as well as the issue of housing construction quality with indicators such as appropriate access to infrastructure and facilities (such as education, employment, shopping, treatment, recreation, and transportation), design of housing space in proportion to human scale and per capita, and inspection of housing construction quality. In contrast, empirical literature, referring to many indicators such as the ratio of housing price to household income, the rate of home ownership and the diversity of income levels of target households, the use of new technologies and methods in design and construction, the ratio of supply to potential housing demand, and measuring the satisfaction of residents and beneficiaries with the housing project, has addressed other issues such as demand management and access to housing, and housing management and evaluation during and after supply. In this regard, it can be concluded that in the field of housing planning system, in general, practical experiences in this field have suggested a more pragmatic index system and the main approach of this type of empirical studies has been to focus solely on the issue of housing planning and delivery from the process of measuring demand to housing supply. On the other hand, theoretical literature in this field has sought to solve potential challenges in the practical experiences of the housing planning system by raising more issues such as financing and resources and construction quality and focusing more on them.

Finally, among other issues that have received less attention in empirical and theoretical studies, we can mention the indicators of the governance area in housing and its legal and planning structure. Together, these two areas, with 19 indicators, meaning about 26 percent of the total global indicators of the housing planning system, have a smaller share among other areas. While the field of maneuver in the housing system should be the structure of housing programs, policies and laws, as well as its driving engines, namely institutions and the governance system in the housing sector. Among the indicators of these two areas, we can mention the degree of coordination between national and local institutions to reduce differences and duplication of roles, the existence of housing program oversight committees, the diversity and extent of participatory meetings of stakeholders involved in decision-making, transparency in housing allocation, the timing of planning, approval and implementation of the housing program, the impact of financial and planning constraints on housing supply, and the degree of compliance with other higher-level programs. Therefore, it can be concluded that given the low share and lack of repetition of indicators in the area of governance and legal and planning structure of housing in theoretical and empirical studies, these two sectors should be more practically included in the literature on the governance system and housing planning, and the housing planning system should not only include policymaking, planning, and measuring demand and supply.

5.3. Presenting a Process and Content Model for the Housing Planning System

In this section, after integrating the various parts of this study, a final process and content model for the subject of the housing planning system in a general sense in the world was developed by showing the overall internal relationships of the components. This model consists of three levels: the outer layer (including the macro theories supporting the subject and the effective factors of the context), the housing planning system process (including the legal and planning structure, governance and institutional management, demand management, financial and resource procurement, and supply management), and the measurement and evaluation level (including the measurement of the physical-spatial quality of the housing provided and the evaluation of the process and policy review). As Figure 1 shows, at the first level of the process and content model of the subject, which is located in the outer layer of the housing system and indirectly affects it, the macro theories supporting the housing planning system are examined. In sustainable development, ensuring the application of social, technical and physical, environmental and economic principles in housing planning, in urban renewal, emphasis on factors such as physical reconstruction of housing while protecting heritage and revitalizing deprived areas, the theory of the right to the city, principles such as the right to housing as a primary right of all individuals and the right to participate in the social, economic and political process of place-making, the theory of participatory planning, factors such as participation in the regulation of land use regulations, urban renewal and housing financing, and finally, urban governance by explaining dimensions such as institutional capacity and inter-institutional planning at all levels of demand to supply measurement, enter the housing system. The effective factors of the context are another part of the first level that is located in the outer layer of the model and show the impact of economic and social constraints and factors on the potential demand for housing by the people, as well as the effect of financial and planning constraints on the supply and affordability of housing. These factors generally do not have the ability to directly intervene in the housing system, but they can change the planning conditions, the financial sector, the legal structure and policy-making, and the level of demand and supply, and should be considered in the housing planning system. At the second level of the model, the legal and planning structure, which, along with the governance and institutional management sectors, has become the motivating and executive engine for the housing system, includes the preparation of housing programs and national to local policy-making in accordance with the superior plans, the development of land use regulations and financial regulations, construction regulations and affordable pricing, in addition to planning the number of units, scheduling the program, and considering facilities and infrastructure in housing programs, and the flexibility of policies for review and amendment. The governance and institutional management section includes the type of governance and innovative management mechanism to reduce duplication of roles and organizes inter-institutional cooperation from national to local levels with the participation of all stakeholders involved, along with the existence of oversight committees throughout the process alongside government, public and private institutions, to improve the efficiency and accountability of the responsible institutions and to achieve transparency in housing allocation and openness of information in the housing system. The demand management section examines demographic changes and household economy, measures access to housing for low-income groups, the extent of housing shortages, the rate of homelessness, and the share of inadequate and informal housing, along with predicting future housing needs and calculating the affordability of housing costs. The financial and resource provision area, taking into account the diversity of income sources of housing institutions and their financial sustainability, granting housing subsidies to applicants, applying tax regulations, providing construction and implementation capital in a public and private manner, allocating budget proportionally to implementation costs, and providing human resources, constitutes an important part of the housing system process. Finally, in the area of supply management, factors such as determining tenure and type of housing ownership, determining the completion time and project horizon, adopting new methods and tools for mass production and renovation of dilapidated housing, examining the amount of production per year, the level of demand response, and the ratio of supply to potential demand are examined. The third level, namely measurement and evaluation, is in mutual relation with the previous sections and is continuously being evaluated during planning and implementation and after implementation. In the section on measuring the physical-spatial quality of the supplied housing, it assesses the appropriate access of residents to facilities and infrastructure and the degree of compliance with standards, minimum per capita, technical, safety, climate, security, and aesthetics, in addition to measuring and evaluating the average life of buildings and their physical quality, the use of environmentally friendly materials, and the efficiency of energy consumption in the units. In the final section, which is the process evaluation and policy review, the entire process is reviewed and monitored, and by examining the rate of progress and completion of housing projects, measuring residents' satisfaction by the responsible institutions, examining the level of construction violations in implementation, the impact of new housing on the

value of surrounding properties, and the mental and physical health of residents, the results of the housing project are monitored. By conducting an assessment of the legal impacts of housing policies and an assessment of the social impacts of the housing project, more accurate results can be obtained on the status of laws and policies in the field of housing and the social situation of residents of new housing. By constantly returning to the housing system process section from the beginning, regular monitoring and evaluation of all stages are carried out so that, if necessary, changes can be made in different parts of the housing system and their mechanisms can be improved.

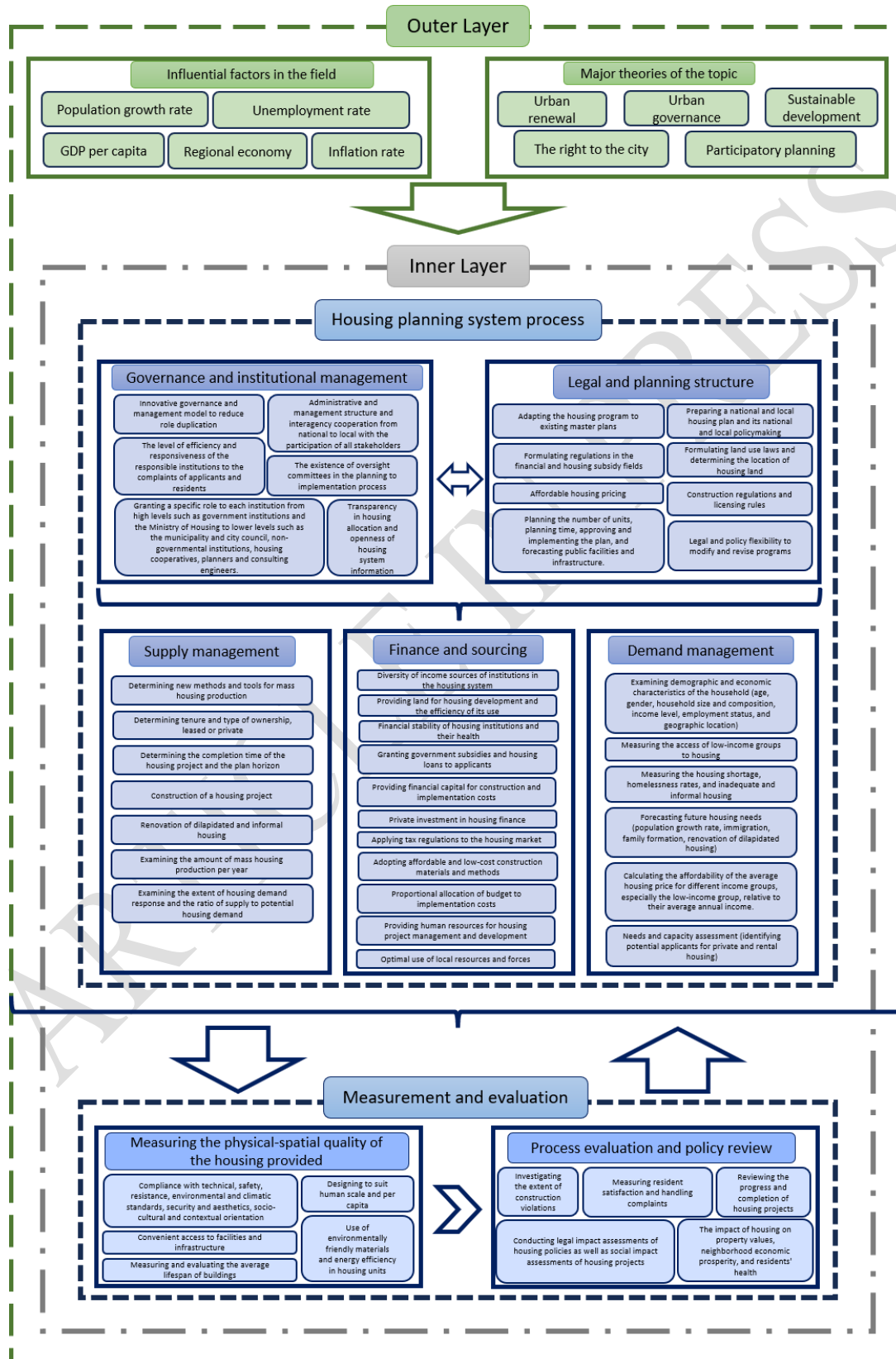


Figure 1: Process and content model of the housing planning system in a general sense in the world.

6. Conclusion

In this research, world-reputable studies in the field of housing planning system were reviewed in various sections such as definitions and concepts of housing planning system, historical development of the subject, macro theories supporting the subject, conceptual models of the subject in the world literature, extraction of indicators from theoretical texts and experimental documents, with the aim of analyzing the subject of housing planning system and presenting its evaluation index system as well as its process and content model. These surveys showed that the various studies of this field do not provide a comprehensive view of the housing planning system and its components due to the multidimensionality of this issue, and this requires the integration of various aspects of this issue in various studies of the housing system, which this research pursues this goal by providing a comprehensive model of the housing planning system. By reviewing the mentioned definitions and concepts of the housing planning system in global researches, various aspects of the subject were clarified and a comprehensive definition was presented. Then, by examining the historical evolution of the subject in different periods from the past to the present, it was found that the housing planning in the world initially focused on the aspect of construction and supply of housing in post-war reconstruction and then on self-help workers' housing in a purely functional manner and neglected other dimensions. Then, the political and economic developments in the world pushed the housing planning system to a more participatory direction, and as a result, the correct measurement of the demand was done by formulating different programs. This made the social and environmental aspects of this issue more prominent with the United Nations Habitat Conferences, and finally, in recent decades, good governance of housing and decentralization of central power in the housing system, along with appropriate financing methods in the housing system and their main challenges, have been seen. This course shows the evolution of the housing planning system in the world and states that the main challenge in this field is not supply or demand; Rather, there should be a model of governance appropriate to the political and economic context of each country in the field of housing, so that it can lead the programs and policies of this field to success and increase their effectiveness in providing housing to the people with the various methods it adopts. Examining the conceptual models of the subject showed that researchers define the housing system from different points of view such as process, content, stakeholder-oriented, etc. and again, these models alone cannot be used as criteria for the actions of housing planners. Further, the examination of 30 theoretical texts and experimental documents in this research led to more accurate identification of the evaluation and measurement indicators of the housing planning system in the world and made the research results more comprehensive. Finally, after classifying the studies into 6 thematic categories and comparing the theoretical studies and empirical documents in the amount paid to each thematic category, 72 indicators of the housing planning system in the world were introduced along with their sources, and finally, the process and content model of the research, which consists of three levels of the outer layer, the process of the housing planning system, and the measurement and evaluation level, was presented. In this model, the general relationships between the components indicate how the system works and can be the benchmark for housing planners in any country. In such a way that the governance department and the housing legal and planning structure department, as the two driving engines of the housing planning system, simultaneously develop and implement the process including supply and demand management, financing and measurement and evaluation.

Authors' Contributions

The percentage of author collaboration was the same.

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Conflict of Interest

The authors did not declare any conflicts of interest.

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