Developing a Comprehensive Systemic Framework for Public Housing in the Kingdom of Saudi Arabia

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Abstract- Housing is one of the essentials of life for which all countries strive to provide a basic solution. The increasing demand from inhabitants of the same region or people migrating from other places for a better quality of life demonstrates that people are looking for more than simply a place to live. This research aims to develop a Comprehensive Systemic Framework for Public Housing (CSFPH) in the Kingdom of Saudi Arabia. The research methodology followed three steps to achieve the research objectives. First, developing a theoretical conceptual framework, which relied on reviewing criteria and indicators of residential satisfaction, housing policies, and governance. Second, applying the conceptual framework through analyzing the recent gaps of housing policies in Saudi Arabia, and measuring the residential satisfaction of housing projects in the city of Riyadh using sampling and questionnaire techniques. Third: developing CSFPH in Saudi Arabia through building on the theoretical conceptual framework and responding to the results of the gap analysis of the recent status.

Keywords- Public housing, Residential satisfaction, Housing policy, Housing governance, Kingdom of Saudi Arabia.

I. INTRODUCTION

Governments around the world have implemented a range of public housing support projects to achieve their goals and objectives. To complement these initiatives, several policies have been introduced, such as providing safe housing for all people or increasing the number of homeowners over time through various programs that adapt to the socioeconomic conditions of those seeking housing. Examples of such countries include Australia, the United Kingdom, Canada, Malaysia, and China [1, 2, 3, 4]. These governmental structures also establish regulations and standards for public housing projects at the local government level, ensuring that real estate developers work under controls that align with the countries’ vision of providing adequate housing and creating an integrated environment that promotes the well-being of the population [5, 1, 6]. However, in some countries, efforts are directed towards short-term plans to increase individual homeownership through housing projects lacking a long-term vision and an integrated approach, which may not provide a quality of life (QoL) that meets inhabitants' desires.

Saudi Arabia has established various plans and ministries to improve public housing [7], but there is a lack of understanding of essential indicators such as services, infrastructure availability, delivery plans, and desired design standards. This lack of understanding emphasizes the need to recognize the factors that influence satisfaction with the residential environment and involve residents’ satisfaction with housing projects. Resident satisfaction has acquired consideration as a subjective indicator of housing quality in developed countries, but not in developing countries [8]. Few studies have been conducted in Saudi Arabia on housing projects, particularly on building materials, housing design and size to reduce housing prices while ensuring long-term sustainability [9, 10, 11]. Many public housing projects cannot meet residents' expectations due to the lack of an approved strategy for comprehensive national housing issues [12, 13, 14] to collaborate all stakeholders within defined national, regional, and local frameworks to provide appropriate housing for the most vulnerable residents [15, 16]. Furthermore, the implementation mechanisms need to be improved in terms of efficiency and the speed of adopting development initiatives to align with the country's and society's objectives [17]. This research contributes to improving housing policies by involving residents' satisfaction with planning and designing process of housing projects within Vision 2030 goal.

1.1 Research Problem

Saudi Arabia's government is planning to establish public housing projects at a rapid pace to address the supply and demand gap for suitable accommodation. However, the lack of QoL in existing housing projects has led to several issues, including gaps in supply and demand, issues with implementation and policies, defects in service delivery, transportation, and infrastructure, contradictions in the selection of housing project sites, and the absence of a measure to evaluate the satisfaction of project beneficiaries. To address these issues, research is targeted to develop a Comprehensive Systemic Framework for Public Housing (CSFPH) in Saudi Arabia to raise QoL in housing projects through enhancing the housing policies and governance of housing industry in the Kingdom.

1.2 Research Objectives

To accomplish the main research objective of developing CSFPH in the Kingdom of Saudi Arabia, the following specific objectives were investigated:

1. To investigate criteria and measures of residential satisfaction.
2. To evaluate gaps in policies, governance, and satisfaction of public housing in Saudi Arabia.

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3. To develop the Comprehensive Systemic Framework for Public Housing (CSFPH) in Saudi Arabia.

1.3 Research Methodology

The research methodology employed a structured approach consisting of three main steps to achieve the research objectives. These steps are outlined below:

Step 1: Theoretical Conceptual Framework

The first step involved developing a theoretical conceptual framework that encompassed three key components: criteria and indicators of residential satisfaction, housing policies, and housing governance. This framework served as a foundation for the research, providing a structured basis for analyzing the factors influencing residential satisfaction and the role of housing policies and governance in addressing housing challenges.

Step 2: Gap Analysis

The second step focused on conducting a comprehensive gap analysis by comparing the theoretical framework with the current situation. This analysis was conducted at three levels:

- Level 1: Analysis of Housing Policies in the Kingdom of Saudi Arabia.
  This entailed a thorough examination of existing housing policies in Saudi Arabia. The purpose was on the way to evaluate the effectiveness of these policies in addressing housing issues and promoting residential satisfaction.

- Level 2: Analysis of Housing Projects in Riyadh City.
  A detailed analysis of housing projects in Riyadh City was conducted to assess their alignment with the theoretical framework. This involved examining the design, implementation, and management of these projects in relation to the identified criteria and indicators of residential satisfaction.

- Level 3: Measurement of Residents' Satisfaction.
  To gauge the level of residents' satisfaction with housing projects in Riyadh, a questionnaire survey was administered to a sample of residents residing in these projects. The questionnaire included relevant indicators from the theoretical framework, allowing for a quantitative assessment of satisfaction levels.

Step 3: Development of a Comprehensive Systemic Framework

The final step involved synthesizing the findings from the gap analysis and developing a comprehensive systemic framework for public housing (CSFPH) in the Kingdom of Saudi Arabia. This framework aimed to improve the efficiency of housing projects and address the identified obstacles and problems. It integrated the research findings with practical recommendations and strategies to enhance housing policies, governance, and the overall quality of housing projects in Riyadh.

II. Theoretical Conceptual Framework

2.1 Criteria and Indicators for Measuring Residential Satisfaction

In recent years, citizens have become increasingly participating in the policy-making and operation of public services from the first step of design to the final step of assessment. Managing satisfaction in this context requires more than simply evaluating satisfaction at the end of the process [18]. Housing affordability plays a crucial role in determining the level of satisfaction among residents in countries belonging to the Organization for Economic Cooperation and Development (OECD), as measured by the Gallup World Poll, which collects data on housing satisfaction and other neighborhood characteristics [19].

Various countries, including Australia, Scotland, and the United Kingdom, have implemented survey and performance data-gathering methods to improve their social housing systems and provide transparency and accountability to their residents. For example, Australian Institute of Health and Welfare collects key statistics on tenant outcomes, including tenant satisfaction indicators with the property's amenities, location, and housing provider [20].

The housing regulator in Scotland makes performance data for each provider of public housing, including statistics on tenant satisfaction and adherence to maintenance criteria [21]. For example, providers must demonstrate they have plans to ensure tenants receive the necessary support to keep their leases. In addition to property conditions – suppliers must show that properties are kept up-to-date and meet all relevant regulations [22]. Also, The Canadian Housing Survey provides timely and relevant data on how Canadians feel about their housing and how housing affects them. The data provided like core housing needs, housing characteristics and tenure, perceptions of financial hardship due to housing costs, satisfaction with one's home and neighborhood, perceptions of neighborhood problems and safety, plans to move, community involvement, life satisfaction, community satisfaction, home accessibility modifications, self-assessed health, experience with homelessness [23].

In the United States, Boston, conducted an initial tenant satisfaction survey of public housing residents on how renters evaluate their living environment. The survey results provide housing authorities with a picture of residents' perspectives on several topics relating to housing authority governance, operations, and physical conditions [24]. In addition, Ontario, California, people's participation on the quality of city services and the community's objectives by interviewer's residents to gather data on investments in neighborhood infrastructure and residential services [25].

In a previous study by the authors of this study, they concluded a theoretical conceptual framework for major criteria and indicators that affected residential satisfaction in public housing around the world, which consists of six criteria.
that include 43 indicators and their measurements. These criteria are demographic attributes, physical and social environment, housing characteristics, accessibility and efficiency of services [26]. For example, the study considered various demographic attributes, such as household age, education level, length of residency, employment status, employment sector, homeownership, household size, and automobile ownership. These attributes were measured using indicators like number of years stayed in housing, employment sector (government, private), tenure (owners, renters), and the number of family members living in the house.

2.2 Criteria and Indicators for Measuring Residential Satisfaction

Various nations have implemented different housing policies to improve QoL for their citizens, see table 1. There are two primary approaches to affordable housing: the universal approach, which aims to provide housing for the entire population, and the targeted approach, which focuses on meeting the needs of low-income individuals who are not adequately served by the market distribution scheme. Countries like Singapore, the Netherlands, and Denmark have adopted the universal approach, while the Malaysia, United States, and United Kingdom have pursued the targeted approach.

In some countries, providing housing for low-income people has led to problems such as concentrated densities in one place, social isolation between community groups, and limited access to the services required by the population. To address these challenges, housing policies now adopt a comprehensive view that provides low-income housing with various services such as health care, educational and social services, jobs, and the necessary access to those services. In addition, many policies emphasize not depleting natural resources in affordable housing construction. As a result, housing developments are now integrated into national housing master plans, rather than developed and pursued independently [27, 28].

In Hong Kong, the increased density is encouraged by tall residential buildings through zoning regulation [29], while in Malaysia, the government has established public-private partnerships to secure land for low-income housing [30]. In the United Kingdom, policies have been enacted to ensure that affordable housing is included in development requests involving five or more additional houses. Successful global programs have relied on effective coordination between central and local levels of government, along with appropriate legislation and incentives [31]. In the United States, public housing projects are established as part of city master plans, providing housing at rates from 20% to 30% of urban development areas. Incentives are provided for increasing housing densities to enhance the number of units assigned to low-income individuals, as alternative options for the national structural framework, given that each state in the United States has varied legislation and policies [32].

<table>
<thead>
<tr>
<th>References</th>
<th>Study Area</th>
<th>Policies</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>[29] Hong Kong, Singapore</td>
<td>Connecting public transport to high-density areas, containing commercial areas, and providing subsidies for low-income housing.</td>
<td>• Tall residential buildings with multiple floors to accommodate a larger number of housing units within a limited land area. • Accessibility through a well-connected public transportation system. • The inclusion of commercial spaces generates additional revenue streams, which can help offset the costs of constructing and maintaining affordable housing units.</td>
<td></td>
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<tr>
<td>[30] Malaysia</td>
<td>Developers who exceed 30% of the affordable housing get incentives.</td>
<td>• 30% of housing for low-income of any residential development project. • More than 30% get support from the government such as low land payments and funding for infrastructure. • Combined with the nearby community and having a mixture of uses</td>
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<tr>
<td>[33] City of Johannesburg, South Africa</td>
<td>The city requires developers to allocate a certain percentage of units in a development for low-income.</td>
<td>• With a project consisting of 20 units, the city may stipulate that 30% of the apartments must be designated for low-income households. • The developer relies on market forces to determine rental prices for these units. By offering housing at lower price points compared to market-rate units, developers aim to attract low-income who are seeking affordable housing options.</td>
<td></td>
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<tr>
<td>[28]</td>
<td></td>
<td>• Access to Parks and Open Spaces.</td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>Policy/Region</td>
<td>Description</td>
<td></td>
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<tr>
<td>Guangdong Province, China</td>
<td>Providing high-quality residences, efficient infrastructure, access to natural environments, attractive public places, and establishing residences within proximity (within 0.5 kilometers) to railway stations.</td>
<td>• Allocating 30% of the area within a district as open space enhances the livability of the district, providing residents with access to natural environments and promoting a sense of well-being.</td>
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<tr>
<td>Guangdong Province, China</td>
<td>• Neighborhoods create environments that are welcoming, vibrant, and promote social interaction.</td>
<td></td>
<td></td>
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<tr>
<td>Guangdong Province, China</td>
<td>• Living near railway stations encourages the use of public transit, reduces reliance on private vehicles.</td>
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<tr>
<td>London, UK</td>
<td>The H2 policy allows for the construction of up to 25 dwellings, while the H5 policy requires that 50% of the units be affordable, with rents set at 20% lower than the local market rentals, unit's diversity of spaces, accessibility by public transit.</td>
<td>• Allocating 30% of the area within a district as open space enhances the livability of the district, providing residents with access to natural environments and promoting a sense of well-being.</td>
<td></td>
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<tr>
<td>London, UK</td>
<td>• Accommodating different housing needs within the community.</td>
<td></td>
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<tr>
<td>London, UK</td>
<td>• Making it convenient for residents to commute and access essential services.</td>
<td></td>
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</tr>
<tr>
<td>London, UK</td>
<td>• Integrating different land uses within a single development, such as residential units, commercial spaces, offices, or community facilities.</td>
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</tr>
<tr>
<td>United States</td>
<td>Zoning</td>
<td>• 20% of all new housing units were created at low-income rates, between 30% and 60% of the location's median income, protecting low-income owners from growing estate taxes.</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>• Integrating affordable housing in the master plans as an essential element of zonings, cities can foster more inclusive and sustainable communities. This approach allows for comprehensive planning, strategic resource allocation, and the provision of necessary infrastructure and services to support affordable housing initiatives effectively.</td>
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2.3 The Housing Governance Worldwide

Providing affordable and decent housing is a global issue, and several countries have created regulations and policies to address the problem. Regulations have been created at different levels to protect the role of the resident as an end user and ensure that they have access to quality housing. These levels mostly proceeded from national to regional, then to city, and eventually to developer corporation. One of the national planning techniques is the right of residents who cannot secure housing through the real estate market to obtain homes sponsored by local government bodies concerned with public housing, as is the case in both Canada and Australia. Canada has enacted legislation to investigate the requirements of citizens who cannot afford housing to include them in the housing project system. Australia has also identified and produced a socioeconomic database for who is qualified for housing, as well as information on the present real estate market such as policies, housing programs, finance, population growth, and family size are considered and translated into planning and design to meet people's needs [3, 1].

Affordable housing was related to the national planning policy framework in the British experience as figure 1 shows. The housing system has been controlled by the central government, local government and local partners [5]. Regulations have been put in place to compel local governments to provide low-income people with homes, including the minimum rent for housing at least 20% cheaper than the local real estate market rentals, each residential project unit's diversity of spaces for selected locations, the city's future growth patterns, the accessibility by public transit are required [2].

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Figure 1. UK's National Framework for housing improvement, Source: [5].

In China, a structural framework for public housing provision has been implemented from several different sides as figure 2 shows. The National Committee for Reform and Development supervises the general planning of housing projects; the Ministry of Human Resources and Rural Development sets goals and develops initial rules, monitors development success at the district level; the Land Resources Ministry is responsible for allocating land resources to housing projects at the provincial level; The Finance Ministry supervising financing sharing and investment to housing projects; finally, as developers of public housing projects, the Chinese Banks develop rules to managing the budget for assets market financing [6]. In Malaysia's housing provision structure is either directly through the federal government or indirectly through concerned bodies to secure land-dwelling for low-income housing, regulating affordable housing projects through rent and sale by the state government [4].

III. ANALYZING POLICIES, GOVERNANCE, SATISFACTION OF PUBLIC HOUSING IN SAUDIA ARABIA

3.1 Housing Policy and Governance in Saudi Arabia

The Saudi Government has set three strategic goals to improve the housing situation in the country. The first is to enhance the sector of real estate's performance by increasing its involvement in GDP from 5% to 10%. This will be achieved by increasing the annual growth rate from 4% to 7% and reducing the time required for approving and issuing housing development certificates to 60 days instead of 730 days. The second goal is to stimulate real estate supply and increase productivity by reducing housing unit costs and increasing the number of units constructed by approved developers from 10% to 30% of housing. The
third goal is to increase homeownership rates among Saudis from 47% to 52% by reducing home loan waiting times from 15 to 5 years and raising non-oil GDP mortgage rates from 8% to 15% [36].

Saudi Arabia’s Ministry of Housing (MOH) is implementing plans to improve housing conditions for current and future generations, aligning with the 2030 Vision. One plan involves identifying low-income individuals through a database and collaborating with the private sector to activate local engagement in housing buildings. Applicants must demonstrate eligibility based on financial resources, and government authorities determine financial assistance for monthly payments over 20 years [37]. However, a noticeable disparity exists between policy formulation and the actual implementation of public housing development due to a lack of coordination and agreement on core values and priorities among government institutions. This results in delayed regulatory improvements, leading to unaffordable housing due to limited serviced land and fragmented zoning and building regulations [38]. The MOH (2020) report suggests addressing these difficulties by creating a comprehensive systemic framework, facilitating financing, increasing affordable housing availability, and improving market efficiency. Figure 3 illustrates the initial organizational structure for housing program governance [39] and the involvement of government agencies, developers, and financiers that play a significant role in housing regulation but lack explicit policies to protect residents from issues like project delays, unsatisfactory housing quality and services make the complaints process through the court is the only compensation technique available.

Moreover, Kyriazis et al. (2018) highlights that administrative conflicts, sociocultural concerns, and technical issues affect housing projects in Saudi Arabia. Feasibility studies often neglect social contexts, such as local culture, lifestyle, community activities, public areas, and climate, resulting in housing projects that fail to meet the actual community needs. Technical information regarding the land’s features, terrain, orientation, views, and sustainability factors at the urban level is also ignored due to a lack of national housing policies. While broad design guidelines are considered such as dividing the land into equal parcels with equal accessibility, specific standards for all regions are not required. Properly engaging end users in the planning process and ensuring a speculative-free atmosphere for all primary actors are crucial for a publicly funded social housing program to succeed. Locality and tradition can also provide a solution when sustainability is a concern [40].

3.2 Assessment of the Current State of Public Housing Projects in Riyadh City

The researchers present in table 2 using Google Maps the estimated distance of nearby services for residents in Riyadh residential projects after being handed over to residents. Inadequate availability of essential services near residential projects in Riyadh after handover negatively impacts residents’ QoL and increases traffic congestion on roads. The lack of involvement of municipalities or sub-municipalities in decision-making or progress monitoring of housing projects has limited the effectiveness of the Ministry of Municipal Rural Affairs and Housing (MOMRAH) in improving housing conditions.
Table 2. The average distance to fundamental services

<table>
<thead>
<tr>
<th>Average distance to services by kilometres</th>
<th>Eastgate project</th>
<th>Al-Jawan Suburb project</th>
<th>Al-Zamil and Anan projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parks</td>
<td>14.7</td>
<td>11.9</td>
<td>5.7</td>
</tr>
<tr>
<td>Health centre</td>
<td>22.1</td>
<td>22.4</td>
<td>6.0</td>
</tr>
<tr>
<td>Glossary</td>
<td>18.2</td>
<td>12.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>17.3</td>
<td>11.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Bus stop</td>
<td>27.3</td>
<td>21.0</td>
<td>18.9</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>14.1</td>
<td>15.1</td>
<td>4.9</td>
</tr>
<tr>
<td>Mosque</td>
<td>8.5</td>
<td>2.3</td>
<td>0.25</td>
</tr>
<tr>
<td>Pre-intermediate school boy</td>
<td>26.8</td>
<td>13.6</td>
<td>4.6</td>
</tr>
<tr>
<td>Pre-intermediate school girls</td>
<td>20.8</td>
<td>12.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Intermediate school boy</td>
<td>18.7</td>
<td>13.4</td>
<td>5.2</td>
</tr>
<tr>
<td>Intermediate school girls</td>
<td>17.5</td>
<td>12.4</td>
<td>5.7</td>
</tr>
<tr>
<td>Secondary school boy</td>
<td>18.1</td>
<td>13.6</td>
<td>5.3</td>
</tr>
<tr>
<td>Secondary school girls</td>
<td>17.5</td>
<td>20.0</td>
<td>5.1</td>
</tr>
</tbody>
</table>

In the planning and development of housing projects, some of the key goals of Vision 2030 that are taken into account include creating attractive environments for investment, developing a lively atmosphere that promotes community interaction and social cohesion, providing healthy environments for all members of society to promote healthy living by providing access to green spaces, recreational facilities, and other amenities that promote physical and mental well-being [41]. The authorities need to ensure that the environment for housing projects meets Vision 2030 on improving the QoL at the city level, by providing full living amenities to raise the Kingdom’s cities level among the best in the world, as figure 4 shows.

![Figure 4. Quality of Life Program Strategy, Source: [41]](image)

To improve housing conditions in Riyadh, housing authorities must prioritize the well-being of residents and implement policies and regulations that hold developers accountable for delivering promised services and facilities. By evaluating developers' satisfaction, services, and investment direction, authorities can ensure that housing projects meet Vision 2030 requirements and comply with detailed protection regulations for residents. Communication between developers, project managers, and residents is crucial to ensuring that the services promised in a housing development are delivered as planned referred to the MOMAR's report [42]. If there are changes or delays, it is important to communicate them transparently and work with residents to find suitable solutions or alternatives.

3.3 Assessment of Residents’ Satisfaction in Housing Projects in Riyadh City

A survey was conducted among residents of housing projects in Riyadh to measure their satisfaction levels with the projects. The survey covered various aspects of the housing projects, including socioeconomic profiles of residents, housing indicators, accessibility and efficiency of services, physical and social environment indicators. The survey was carried out via the Internet through a Google Forms interface and was posted via the Telegram®
Messenger App to four different housing projects. The frame of the study sample was 3568, we got 350 responses, 8 of them were excluded, and the sample size was 342. The statistical analysis was performed using the SPSS program and the questionnaire used the 3-points Likert Scale ranging from 1 to 3 where 1 refers to “unsatisfied” and 3 refers to “satisfied”.

More than 57.3% of the respondents' houses are located in the Eastgate project, 28.1% on the Al-Jawan Suburb project's north side, and 13.2% on the east side of BlyutAlzamel and MaeliAnan projects, 1.5% are located west and south projects. The survey results show that while 49.6% of the residents were satisfied with their social relationships with neighbors, friends, and family, 59.4% of respondents were unsatisfied with the sense of safety and security within the projects, 78.7% were dissatisfied with housing project management, 68.8% with the physical environment, and 76.9% with accessing of the public facilities like mosques, schools, commercial and health centers, workplaces, relatives' homes, and the efficiency of housing project services was dissatisfied rated at 77.5%. Overall, satisfaction with housing projects in Riyadh was unsatisfied by 52% and only 15.8% were satisfied as places to live.

Prioritizing residents' satisfaction in housing projects is a crucial policy that ensures that the final product meets the needs and expectations of the residents. Australia, Canada, the UK, and the US have implemented policies that prioritize residents' satisfaction in housing projects. This involves evaluating the real estate developer and the residential project in terms of quality and ensuring that the final product meets the residents' hopes and requirements. However, because of a lack of coordination and agreement on basic principles and goals across authorities' entities, the quality of the end product was not always addressed in the development of housing projects. This requires collaboration between the real estate developer and other government entities to ensure effective implementation and monitoring of the project. To address this issue, some countries have implemented measures to monitor the delivery of the project by the local government and gather feedback from the residents through questionnaires. This feedback focuses on the quality of the housing project, the existing services, and the developer's responsiveness to addressing population issues in the project.

IV. THE COMPREHENSIVE SYSTEMIC FRAMEWORK FOR THE PUBLIC HOUSING IN SAUDI ARABIA

Developing a CSFPH in Saudi Arabia would require a multi-faceted approach that takes into account various elements and procedures. Here is a 7-step model as the key elements and procedures that could be considered as figure 5 shows:

Figure 5. key elements and procedures of the model

4.1 Assessment of the current state of public housing in Saudi Arabia:

This would involve a comprehensive analysis of the existing state of public housing in the country, including the number of units available, the stock housing condition, and the demand for housing.

The assessment of the recent state of public housing is crucial for identifying the gaps in the housing scheme's progress and determining the necessary measures to bridge those gaps. The housing policies and regulations must be evaluated to ensure that they are effective in improving the QoL and responding to the needs of the population. The policies must also be in line with Vision 2030's objectives, which include building a prosperous economy, a dynamic society, and an aspirational country. The recommendations of the 2030 Vision did not reflect

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the housing situations and there are no indicators that may provide information on the QoL housing projects.

To evaluate the dimensions that affect housing projects, the QoL and residents' satisfaction must be analyzed. This includes assessing the socio-economic aspects of the population, such as income, education, and employment opportunities. It also involves evaluating the physical and social built environment, such as the availability of green spaces, recreational facilities, and amenities that promote physical and mental well-being. The housing aspects features such as type of the size preferred, design, and quality, must also be assessed.

Furthermore, the efficiency of services and access to services must be evaluated. This includes assessing the availability and quality of transportation, healthcare, education, and other essential services. The opinions of the residents must be considered on the way to assess the efficiency of housing projects in delivering their wants and improving their QoL.

Decision makers must identify the gap between policy and implementation and take action to bridge it. This involves improving the implementation of housing policies to ensure that they are effective in responding to the needs of the population. Enhancing the quality of services and ensuring that the needs of different population categories are adequately addressed are also essential measures to bridge the gap.

In conclusion, the assessment of present condition of public housing is critical to identify areas of improvement and ensure that housing projects come across with population needs and align with the goals of Vision 2030. By evaluating the necessary dimensions and taking necessary measures, the housing projects can contribute to creating a vibrant society and a thriving economy.

4.2 Identification of key stakeholders and their roles:

Key stakeholders in the public housing industry in Saudi Arabia would include the government, developers, financial institutions, and the public. It is important to recognize each stakeholder's positions and accountabilities in developing and implementing the systemic framework [43, 44, 45]. Here are some steps that can be taken to identify key stakeholders and their roles:

4.2.1 Conduct a stakeholder analysis:

A stakeholder analysis can help to identify the significant shareholders in the public housing industry in Saudi Arabia. This involves identifying individuals, groups, and organizations with an interest or stake in developing and implementing the systemic framework. This can include for example directed government agencies including MOMRAH, municipalities, district municipalities, housing developers, financial institutions such as the Ministry of Finance and Banks that are partners with housing projects rolls, community groups that are responsible to give indications of people's needs, and the public that assigned to the specific housing project. In addition, undirected government agents like Education, Health, and Islamic Affairs Ministries that responsible for clarifying the services and starting work in line with residents' needs.

4.2.2 Determine the roles and responsibilities of each stakeholder:

It is crucial to create and clarify each major stakeholder's unique capacities and duties within the development and implementation of the systemic framework after they have been identified. This can involve conducting interviews, surveys, and focus groups to gather information about the stakeholders' perspectives and expectations. The roles and responsibilities of each stakeholder can then be defined and documented as figure 6 shows. The housing projects are managed in the first phase by the Vision 2030 Office based on a CSFPFH that involves input from local communities, districts municipalities, city municipalities, relevant ministries, and MOMRAH.

The second phase is rolled by districts municipalities take up the role of local government level. The process includes collecting the objective indicators of residents' criteria, analyzing the data, and using it to develop the initial design of the housing project. This ensures that the project meets the requirements in the first place and second place the ambitions of inhabitants to enhance their QoL. The districts municipalities define standards for the project development and the requirements of developers through plans and alternatives to achieve the residents' needs and Vision 2030 translated into a master plan. They provide all standards for planning and designing residential neighborhoods, including services and facilities, and a detailed delivery timeline to ensure efficiency and completion upon handing over the project to the residents.

At the city level, the third phase begins with the city municipality. The process includes following up on the performance of the real estate developer. This is done by ensuring compliance with several urban standards and requirements, including the Quality-of-Life Program at the national level and the MOMRAH's guide to planning and design of centers and residential neighborhoods at the regional level. Additionally, the housing project is evaluated through the residents' personal opinions as subjective indicators to determine their level of satisfaction and the reasons behind it to determine the QoL. This phase is important in identifying any problems and determining their cause whether it is due to the developer's work that led to deficiencies in the quality of the construction, a defect in the delivery of the project requirements at the agreed times, or the inadequacy of the sub-municipality's analysis of the requirements. Upon completion of determining the type of problem resulting from the assessment of residents' satisfaction, the city's municipality submits a report to MOMRAH, which begins the fourth phase, the first procedure in this phase is working on housing policy proposals to improve the level of residents' satisfaction and the QoL.

The MOMRAH attempts to correct these issues to raise the QoL in the housing project by improving policies. The improved policies are then submitted to the Office of Vision 2030 as a second procedure to improve housing policies at the national level. The Vision 2030 Office adopts these improved policies proposed by MOMRAH, which support the aspirations of Vision 2030 and are in line with the urban development of housing projects.
Figure 6. Responsibilities of stakeholders

4.2.3 Develop a stakeholder engagement plan:

A plan for including stakeholders in the creation and implementation of the systemic framework can help to assure their involvement. This can involve identifying the key stakeholders, determining the appropriate engagement methods, and establishing timelines and milestones for engagement activities.

4.2.4 Monitor and evaluate stakeholder engagement:

Monitoring and evaluating stakeholder engagement can help to ensure that stakeholders are effectively engaged and that their perspectives and expectations are being addressed. This can involve tracking engagement activities, gathering feedback from stakeholders, and making adjustments to the engagement plan as needed.

Overall, identifying key stakeholders and their roles is essential for the successful development and implementation of CSFP in Saudi Arabia. By engaging stakeholders effectively, decision-makers can guarantee that the systemic framework meets the residents' requirements and contributes to the goals of Vision 2030.

4.3 Definition of goals and objectives:

The development of a systemic framework for the public housing industry in Saudi Arabia would require the definition of clear and measurable goals and objectives. These could include increasing the availability of affordable housing, enhancing housing quality, and closing the demand gap. Here are some goals and objectives for housing projects in Saudi Arabia under Vision 2030, the QoL program, planning and design neighborhood standards, and the results survey to measure residents' satisfaction with housing projects in Riyadh:

4.3.1 Create vibrant and livable neighborhoods:

Housing projects should aim to create neighborhoods that are safe, walkable, and provide access to services and facilities that have high efficiency. This can foster a sense of community and social cohesion.

4.3.2 Increase homeownership rates:

Housing projects should aim to increase homeownership rates by providing affordable home financing options and reducing barriers to homeownership.

4.3.3 Improve the availability and quality of rental housing:

Housing projects should aim to enhance rental housing availability by providing incentives for developers to build rental units and implementing regulations to ensure that rental units meet minimum quality standards.

4.3.4 Address the needs of special populations:

Housing projects should aim to address different peoples' requirements such as the elderly and disabled in families. This can include designing units that are accessible and adaptable to different needs and providing support services to help residents in place.

4.3.5 Foster economic development:

Housing projects should aim to foster economic development by providing job opportunities and attracting businesses to the area. This can help to create a self-sustaining community that supports the local economy.

4.3.6 Enhance the quality of life:

Housing projects should aim to enhance the QoL of residents by providing access to healthcare, education, and other essential services. This can help to improve the overall well-being of the population and promote a healthy and vibrant society.

Overall, the goals and objectives of housing projects in Saudi Arabia under Vision 2030 should be aligned with the overall goals of the Vision, which aims to create a prosperous and sustainable future for the country. By setting clear and measurable goals and objectives, decision-makers can ensure that housing projects contribute to this vision and residents' wishes. Also, by making the projects a flexible environment that provides a working environment for these projects for all
socioeconomic segments of society through a choice of rented accommodation options with an attractive feature for investors.

4.4 Development of policies and regulations:

For housing developments in Saudi Arabia, creating laws and regulations to support the aims and objectives of the systemic framework would necessitate a thorough strategy that takes into account the particular requirements and difficulties of the country. Here are some policies and regulations that could be considered:

4.4.1 Zoning regulations:

Zoning regulations can be used to encourage the development of mixed-use neighborhoods that include residential, commercial, and public spaces that are accessible to public transportation. This can entail building more expensive housing alongside moderately priced houses in the same projects. For example, 20% of all new housing units were created at low-income rates, between 30% and 60% of the location's median income, protecting low-income owners from growing estate taxes. This can help to create vibrant and livable communities that are accessible to all residents.

4.4.2 Building codes:

Building codes can be used to ensure that housing projects meet the minimum quality of buildings materials, standards, including safety, accessibility, and efficiency. This can help to ensure that housing projects are built to provide a comfortable living environment for residents.

4.4.3 Financial incentives for developers:

Financial incentives can be used to encourage developers to invest in housing projects that meet the goals and objectives of the systemic framework. This can include tax breaks, grants, and low-interest loans.

4.4.4 Rent control:

Rent control policies help stabilize rents, prevent landlords from rising to raise rents, and increase home affordability for families with low and medium incomes. Governments may introduce rent control measures to protect renters and keep rents affordable.

4.4.5 Housing subsidies:

Housing subsidies can be utilized to give families and persons with limited incomes financial support so they can afford housing. This can help to open the investment in public and affordable housing.

4.4.6 Homeownership programs:

Homeownership programs can assist people with limited resources to acquire homes by providing financial support. This can help to increase homeownership rates and promote stability in the housing market. In conclusion, Policymakers may establish effective solutions to solve housing difficulties and promote high-quality housing for all people by adapting laws and regulations to the particular needs of Saudi Arabia.

4.5 Financing mechanisms:

To facilitate the construction of public housing in Saudi Arabia, financing mechanisms would need to be put in place. Subsidies from the government, tax breaks, and collaborations with the public and private are all possibilities. The primary government organization in Saudi Arabia that is in charge of planning and implementing housing policies and programs is MOMRAH. The following are some of the residence financing programs and initiatives implemented by MOMRAH and other ministries.

- Sakani Program: is a comprehensive housing program aimed at providing affordable housing solutions for Saudi citizens. The program offers a wide range of services including subsidized homeownership, land allocation and financing options.

- Real Estate Development Fund (REDF): is a government organization that provides funding for building homes. This fund provides loans to individuals and property developers for the purchase or construction of residential units.

- Ministry of Finance (MOF): is in charge of managing the national budget and financial resources. The ministry funds public housing projects through the state budget and other funding mechanisms.

However, developing a financing mechanism is an integral part of implementing the public housing framework in Saudi Arabia. To develop these financing mechanisms, policymakers would need to work with various stakeholders, including government agencies, private developers, and nonprofit organizations. They would also need to carefully consider the specific needs and obstacles of housing market, including land cost, construction materials, the cost of living and housing rent, and labor [46, 2, 4]. Here are some of the ways to develop a funding mechanism such as,

- Government Subsidies: Governments may provide subsidies to public housing developers or housing agencies to cover the costs of developing and maintaining public housing projects. These are direct grants, loans, tax incentives. The government may also consider providing rent subsidies to low-income households and individuals to make public housing more affordable.

- Public-Private Partnerships: Governments may work with private developers or non-profit organizations to develop public housing projects through public-private partnerships. This will provide new sources of funding for public housing projects and facilitate cooperation between the public and private sectors.

- Community Investment Funds: Community investment funds can be established to fund public housing projects by pooling resources from various sources such as private investors, charities and government agencies. This contributes to the mobilization of private as well as public funding to
assist the development of government-funded housing developments.

- Housing Associations: Housing associations are organizations that allow groups of individuals to pool their funds to purchase and manage multifamily housing. This makes it a viable choice for families with limited resources who are unable to purchase their personal residences.

4.6 Implementation plan:

An implementation plan would need to be developed to guide the rollout of the systemic framework. This would include timelines, milestones, performance indicators, resources, communication strategies, risk management, evaluation, training, stakeholder engagement, and change management. Here are some identifiers to guide the rollout of the systemic framework [47, 48, 49].

4.6.1 Timelines:

Projects have specific start and end dates. Therefore, budget time must be managed according to the development timetable. Time or schedule planning includes describing, sequencing, predicting supplies and duration, developing timetables, and controlling schedules. The implementation of the housing project framework will take place for 5 years worldwide however, a main project could take 7 years. For example, 5 years applied from 2023 to 2028. The project will be divided into three phases: planning (2023-2024), implementation (2025-2027), and evaluation (2028).

4.6.2 Milestones:

Organizing the scheduling process, identifying operations, ordering tasks, determining activity supplies, predicting time spent on activities, and developing schedules are the main milestones for the housing project framework. Based on this data, the project team develops a milestone schedule. The milestone schedule defines significant dates that must be reached during the life of a project for it to be finished on schedule. Crucial deadlines are commonly selected to fulfill the agreement's terms as well as create benchmarks in order to adequately measure the success of the project.

4.6.3 Performance Indicators:

Implement a performance measurement system and analyses and evaluate performance against defined objectives regularly to find opportunities for improvement. This is to allow assessment, tracking, and assigning particular metrics and objectives to each indication. Create a model of performance indicators that address the housing project's full life cycle, from design through delivery, and include indicators at the strategic, planned, and operational levels. For examples:

- Time to completion: the length of time it takes to complete a project from start to finish, including design, permits, construction, and delivery.
- Cost performance: cost discrepancy between existing and estimated project costs, including change orders and delay costs.

- Adherence to quality standards: including construction rules, safety laws, and residents' needs, is referred to as quality performance.
- Residents' satisfaction: the level to which residents are satisfied with the project, including design, construction, and post-delivery servicing.

4.6.4 Resources:

The resources needed to implement the housing project framework will include financial resources, human resources, and technical resources. The project will be funded by the Saudi Arabian government, and technical expertise will be provided by a team of housing experts.

4.6.5 Communication Plan:

The communication plan for the housing project framework will include regular updates to stakeholders through a variety of channels, including social media, newsletters, and community meetings. The plan will also include a process for collecting feedback from stakeholders and addressing any concerns or issues that arise.

4.6.6 Risk Management Plan:

The housing development framework's risk controlling plan would recognize potential risks such as delays in construction, lack of community buy-in, and changes in government priorities. The plan will include strategies to mitigate these risks, such as contingency plans and stakeholder engagement activities.

4.6.7 Evaluation Plan:

The evaluation plan for the housing project framework will include data collection on the number of households served, access to basic services, and stakeholder satisfaction. Future housing projects will be informed by the evaluation, which will be carried out by a neutral third party.

4.6.8 Training Plan:

The training plan for the housing project framework will include training for staff on the new housing interventions and best practices for engaging with the community. The training will be provided by housing experts and will remain adapted to the particular requirements of the project.

4.6.9 Stakeholder Engagement Plan:

The stakeholder engagement plan for the housing project framework will include regular meetings with the community to gather feedback and address concerns. The plan will also include a process and explain how residents will be involved in the development of the project.

4.6.10 Change Management Plan:

The housing project framework's managing changes plan will include strategies to address resistance to change among stakeholders and to promote the benefits of the new housing interventions. The plan will include a communication strategy that emphasizes the positive impact of the project on the community. Overall, based on the various requirements of residents, the implementation
plan for CSFPH in Saudi Arabia would need be adapted and adjusted to the particular demands and circumstances of the development. However, the outlined above provides a useful starting point for developing a comprehensive implementation.

4.7 Monitoring and Evaluation:

To follow the systemic framework's development and make required adjustments, a monitoring and evaluation framework would need to be built. Overall, developing a CSFPH industry in Saudi Arabia would require a collaborative effort from all stakeholders, a clear understanding of the current state of public housing, and a commitment to achieving the defined goals and objectives. Monitoring and evaluation are critical components of the success of housing developments that depend on following the project managing cycle. Periodical and final evaluations are two types of evaluations that can be conducted to assess the impact of housing projects [50, 51]. For examples:

- Periodical evaluation: is conducted at regular intervals throughout the project implementation phase to assess progress, identify challenges, and make necessary adjustments. Ensuring the project is on schedule and identifying any problems that could affect project outcomes are the goals of the periodic evaluation.
- Final evaluation: is carried out after the final phase of the work to determine whether the task has produced the desired results and to evaluate its effects on the target population. The objective of the final evaluation is to figure out whether the initiative met its goals as well as discover things that can be applied to new projects.

V. CONCLUSION AND RECOMMENDATIONS

The research emphasizes the importance of housing as an essential need for people and the increasing demand for better quality housing. It aims to develop the CSFPH industry in Saudi Arabia, focusing on the role of governments in supporting housing developments and policies to increase residents' satisfaction and improve the quality of housing projects. The methodology involves analyzing the contribution of the housing government to housing projects, the role of residential satisfaction in policy development, and best practices from around the world. The process of planning and developing housing projects involves careful assessment of residents' needs and expectations, consideration of Vision 2030 goals, ongoing monitoring and evaluation, and the preparation of detailed reports for the Office of Vision 2030. Overall, successful implementation requires collaboration between residents, real estate developers, local, city, regional, and national government to ensure effective implementation and monitoring of the projects. The research recommends further steps to verify the validity of the CSFPH by interviewing decision-makers and identifying challenges and modifications.

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REFERENCES
