ORIGINAL ARTICLE

Mapping stakeholder role and influence: Malik ISCs model for sustainable provision of low-income housing

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Abstract

Housing provision is an integrated network of stakeholders, resources, institutions, and regulations. This study explores the stakeholder analysis approach through grounded theory to rationalize the stakeholder influence and role in developing collaborative frameworks for the sustainable provision of low-income housing in Pakistan. This study aims to theorize the Institutional Stakeholder Collaborations (ISCs) conceptual framework derived from institutional, stakeholder, collaboration, and resource dependence theories. The research also presents an interesting feature, i.e. stakeholder-resource cross-tabulation in achieving the research objective to develop the ISCs theory by placing core categories against stakeholder categories and resource domains. Stakeholder mapping plotted the influence against attributes of power, legitimacy, and interest (PLI) within the context of low-income housing in Punjab, Pakistan. The new theory was generated from the grounded data as a collaborative model for the sustainable provision of low-income housing, i.e., the Malik ISCs Model. This informed discovery of collaboration through the Malik ISCs Model for effectively providing low-income housing projects suggests some key points for the broader global policy discourse of housing development, emphasizing the low-income segment.

Keywords Stakeholder analysis · Collaboration · Institutional · Malik ISCs Model · Low-income housing · Pakistan

1 Introduction

1.1 Background

Housing provides indispensable safety, security, and shelter, guaranteeing other social and economic growth [1]. Many Asian households are restricted from making lifetime investments due to the lack of accessible and flexible housing finance, as such opportunities mostly exist for high-income groups only [2], however another perspective mentions improved accessibility of banking finance being more viable, being more accessible and easier to obtain [3]. Low-income housing has been a key focus of urban development agendas by governments in developing countries. The term has been used for low-cost, sustainable, affordable, and adequate housing. Urbanization has brought more and more people to urban areas, causing a shortage of adequate housing for low-income groups. However, urbanization aligned carefully with basic urban planning principles can enable people to build sustainable and livable cities for a very long time [4]. This demands governments agree to pursue experimentation and a decentralized approach through stakeholder collaborations. Rapid urbanization demands sustainable solutions by conducting extensive stakeholder studies to gauge the provision of low-income housing for the urban poor [5–7]. Sharma [8] also supported this optimistic view of urbanization through properly planning and designing denser, more compact cities that increase businesses and industries and improve urban conditions, as demonstrated by many successful programs worldwide. Housing is a collaborative, multipronged, and concerted effort from all stakeholders [9]. Stakeholders command and acquire different resources, are motivated by different goals, and use different approaches for housing provision. Providing an incentive structure to stakeholders would lead to governing the environment in such an institutional manner that would assist in ensuring the sustainable provision of low-income housing [10]. Successful execution of housing development requires dedicated actions from all the stakeholders engaged [11]. Close

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interaction among all the stakeholders demands enforcement by government agencies [12]. With the inclusion of all stakeholders, sustainable development of low-income housing can be achieved collaboratively using their time, funding, planning, and commitment. [13] concluded that the collaboration between the government, Private Sector, Community, and NGO is imperative for the success of housing programs for low-income communities in the formal sector.

Collaborations in the qualitative studies of low-income housing demonstrated emotional intelligence, innovation, and creativity for rejuvenated communities [14]. Potentials of stakeholder collaborations primarily lie within the domain of the state, i.e., government authorities, since most of the low-income housing projects fall within public or cross-subsidiary models. Since government bodies dominate the rest of the stakeholders in the housing sector, however, the lack of investment in low-income housing and public housing demands deliberate refocus through utilising the underutilized pathway to achieve affordable housing for low-income by using the combined resources from the federal-provincial and local level [15]. This showed that the state, through government bodies and departments, holds the primary position in low-income housing provision.

Othman and Abdellatif [16] proposed the partnership model (based on Corporate Social Responsibility) to endorse the above-discussed consensus. The model comprises five Social Responsibility (SRs) domains for project stakeholders: the government, society, economy, law, and technology. The government must draw on the practical and theoretical perspectives of the political, social, cultural, and economic environment to adopt legislation and PPP frameworks for low-income housing provision [17, 18]. A US-based study using a survey from 133 cities with populations over 100,000 examined the land use regulations, concluding that imposing obligations on private developers can promote low-income housing, correlating with policy and advocacy. [19]. The use of regulatory housing policy is also correlated with measures of need and low-income housing advocacy. Previous studies [20, 21] also suggested enabling the private sector to create low-income housing townships,policies must carefully study the involved stakeholders to avoid unforeseen complications in the future. Previous studies of Public Housing Authorities (PHAs in the US, with support from the federal government, local charter, and the local government, have indicated the propensity to develop non-US Department of Housing and Urban Development-assisted affordable housing. However, such studies concluded that even with this creativity, adequate resources are necessary to meet the demand for affordable housing for the poorest households as market conditions change [22].

From Wood and Gray's [23] theory of collaboration, preconditions, concept and processes, and outcomes, this research focuses on defining two stages, i.e., concept and processes for effectively providing low-income housing. Patterns of human agency within the institutional framework through following the structures of rules, norms, and strategies result in interdependent decision-making processes, which are the real phenomena explained in housing development processes [24]. Stakeholder analysis provides this platform for mapping stakeholder influence within the governing structure of institutional arrangements in the context of low-income housing development. Many collaboration-oriented studies have employed stakeholder analysis, identifying and categorizing stakeholders for effective stakeholder engagement [25, 26]. Lee [27] has suggested five work domains representing the temporal stages of stakeholder management: stakeholder awareness, stakeholder identification, stakeholder understanding, stakeholder prioritization, and stakeholder engagement work. [28] explored the relative position of stakeholders and their relationships for collaborative housing development on a project basis. As valuable contributions to the scholarship of collaborative frameworks in housing studies with stakeholder analysis, most recent studies employed a qualitative approach to investigate stakeholder roles and interactions (Appendix A).

Regarding the context of Pakistan, rapid urbanization has resulted in a deficit of urban land, e.g., the shortage of housing units in the country is estimated at between nine and ten million units, with the demand growing at a rate of 0.7 million units per year [29]. The Pakistani government has pursued many ambitious housing programs like Naya Pakistan Housing Program (NPHP), Ashiana Housing Project (AHP), and Prime Minister Housing Program (PMHP),however, none of the programs have seen the brighter side of implementation [10, 30]. The market sector, including developers, believes that without the active participation of the private sector, even new housing programs would also meet the same fate as previous government projects in Pakistan [31]. Available, affordable housing developments are either too expensive for low-income households or built on major cities' periphery [32]. Low-income households earning around two dollars a day face non-housing expenses (especially travelling costs and time) due to the lack of employment opportunities near these affordable housing developments [33–37]. Punjab, Pakistan's biggest province, is a vast urban region home to low-income housing provision as a fragmented interaction space among stakeholders with stakes and interests. It is crucial to cope with current and expected urbanization trends in cities by providing adequate housing units within reach of their affordability. The effective and timely provision of low-income housing needs to be managed by addressing the formal and informal collaboration patterns within the housing system. Addressing low-income housing issues would help achieve SDG 11, which is meant to create and maintain sustainable cities and societies in Pakistan. The present research aims to fill the knowledge gaps associated

with exploring solutions to the existing barriers to assist the planning and execution of strategies for the ongoing low-income housing program. Understanding an institutional partnership approach among stakeholders could be the key to sustaining low-income housing [38]. Understanding stakeholder engagements and mapping stakeholder influence can identify the collaborative paths that connect the stakeholders throughout the housing production life cycle. These gaps could impact the goals of sustainable housing development, i.e., effective provision of low-income housing in the present study. Many such studies missed the broader perspective of the service delivery system in the case of low-income housing provision.

To create sustainable communities, there is, therefore, a necessity to develop business models within the construction sector in which both social and environmental sustainability are inherent [39]. This study aims to theorize the Institutional Stakeholder Collaborations-ISCs conceptual framework [38] derived from institutional, stakeholder, collaboration, and resource dependence theories (RDT). Stakeholder influence must be mapped out to identify their position within the low-income housing context, besides defining key roles for institutional collaborations through stakeholder perceptions. Considering the context of the present study and building on the theoretical background, attributes of power (P), legitimacy (L), and interest (I) from Chevalier and Buckles [40] are set as the parameters to measure the influence of each stakeholder in the domain of low-income housing provision. This model maps stakeholder influence by integrating power, interest, and legitimacy to examine the potential and gaps of collaboration. Stakeholders with a stake in the project being primary units of analysis would be positioned as dormant, dominant, influential, forceful, respected, vulnerable, and marginalized through a mapping exercise (Appendix B).

The primary research objective seeks potential avenues for ISCs that contribute to the low-income housing provision system. The research question asks: How can stakeholders collaborate institutionally to provide low-income housing effectively? The study aims to offer the Malik ISCs Model as an extension of the conceptual framework published recently suggesting Institutional stakeholder collaborations (ISCs) in the Journal of Housing and Built Environment by involving triangulation from different data sources, i.e., multiple stakeholders (market, state and civil society) interviews and stakeholder mapping [38]. The paper is structured into several sections due to the exploring and detailed nature of the inquiry. The first section covers the literature on the topic, including the stakeholder analysis approach for housing research. The second section explains the methodology, including the research design. The section of findings is subdivided as per the nature of emerging themes. The findings were interpreted using stakeholder-resource cross-tabulation

followed by the Malik ISCs Model for low-income housing provision. The wider recommendations and policy implications for Pakistan's housing sector are presented, followed by the conclusion.

2 Methodology

The phenomena of low-income housing provision can be well understood through multiple perceptions of involved stakeholders in their context, informing interpretivism to be the research paradigm in the present study. The grounded theory method (GTM) is selected as a qualitative approach for this research, following the blueprint of facts and figures in mind, as discussed above. The following sections detail the research methodology employed in the present study.

2.1 Research design

According to the constructivist version of GTM, the analysis leads the researchers towards a theory about people, social processes, and contexts [41]. Findings emerging from constructivist grounded theory studies are presented as a theory rather than a narrative, including categories and properties, to focus on understanding social processes. The nature of low-income housing provision is a fragmented interaction space among stakeholders with stakes and interests. In terms of qualitative investigation, the questions were asked from the state, market, and civil society stakeholders in in-depth interviews, considering the five resource domains (Appendix C). The questions held that the informed categories were underlined within the interview questions, further guiding the initial codes of the grounded theory. All sub-questions would develop understanding and suggestions with further extension into the relevant resource category within the context of low-income housing. State, market and civil society as major stakeholders are sorted against each resource domain, i.e., physical, intellectual, construction capital, policy, and financial. Stakeholders from the three categories in the case of Punjab, Pakistan, are identified concerning their resources for low-income housing provision (Appendix D1). Since the low-income groups are the beneficiaries of such housing projects, their role in the provisioning system was also investigated from the viewpoint of housing suppliers. Appendix D1 contains the full titles of the abbreviations used in the paper for the stakeholders involved in low-income housing provision in Punjab. The interesting feature of multiple data sources is the diversity of different levels of government authorities involved, i.e., federal, provincial, and local. For the government agency at the local level, the capital city i.e., Lahore of the Punjab province, has been selected to extract the data from local authorities, i.e., the Lahore Development Authority (LDA). To maintain the integrity of

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the involved participants, the labelling has been done, i.e. SS for state stakeholders, MS for market stakeholders, and CS for civil society (Appendix D1).

In addition to qualitative inquiry, these research questions were explored using stakeholder influence mapping through the PLI matrix to incorporate the multi-data triangulation, an important part of GTM. Hence, the present study employs stakeholder mapping as part of triangulation to extend the research findings from qualitative responses in a more generalised manner. The conceptual foundation of ISCs is the integrated shared understanding covering common interest (I), legitimacy (L), and power distribution (P) for the collaboration alliance. The core focus of PLI Mapping stands on three pillars (Appendix D2):

- Power: capacity to enhance ISCs
- Legitimacy: Authority to impose ISCs
- Interest: Willingness to implement ISCs

The research design for employing grounded theory in the current study explored the stakeholder collaborations to address the limited provision of low-income housing in the context of existing institutional arrangements (Fig. 1). Findings from the qualitative data analysis provided categories and properties for proposed themes to build ISCs theory and policy implications for improved stakeholder collaborations

to provide low-income housing in Pakistan effectively. The sampling design, data analysis, interpretation, and presentation of findings are further shared in Appendix D3, D4, and D5. Appendix D3 briefly explains the working experience, gender, and role within the employer organization of each participant in in-depth interviews. The mapping of stakeholder influence through the PLI matrix provided some quantitative responses in graphs (Appendix E).

2.2 Stakeholder-resource cross-tabulation

This study's central points of interest were stakeholders' experiences due to their engagement in acquiring resources to deliver low-income housing projects. The multi-method design of grounded theory in the present research, composed of viewpoints and perceptions of the different research participants across the institutional arrangements and resource domains, is directed to present the findings in a positivist manner through structured research design, initial predefined codes and data triangulation. Hence, it was necessary to scrutinize the findings of the diverse nature of data for theory-building for this purpose. Stakeholder-resource cross-tabulation is synthesized to investigate better the potential avenue for ISCs to provide low-income housing effectively against the research objective. [42] performed a cross-case analysis in their study to explain the research process for the
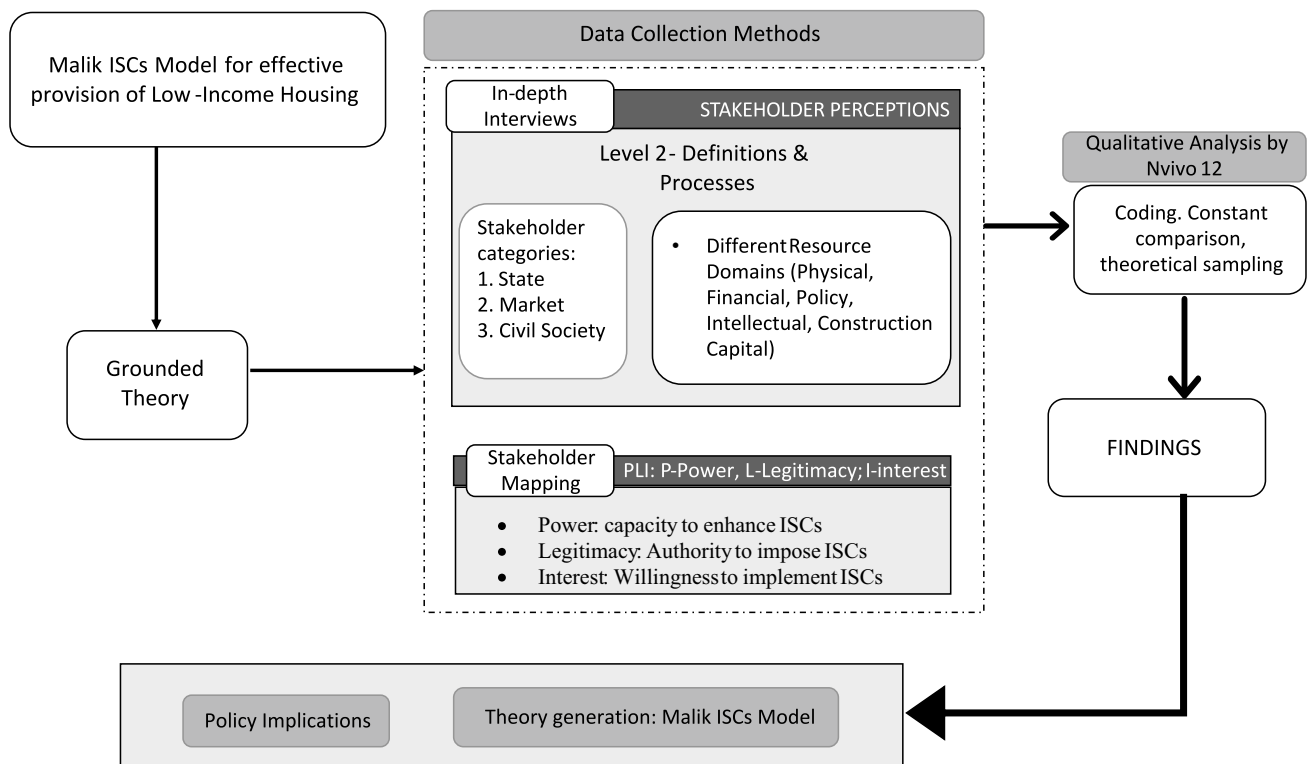

Fig. 1 Research design for present study

pedagogy of aesthetics in architectural design studios. They defined it as an appropriate step to cross-analyze the categories from different cases to find the common core themes that build theory grounded in the data. Following [42] study, the ideas started as cross-resource analysis, finally reaching stakeholder-resource cross-tabulation.

Cross-tabulation was performed among the five different resource typologies, revealing the most recurring ones and highlighting avenues of collaboration for each stakeholder (Appendix F). This exercise determined the standard features of stakeholder collaborations for effective low-income housing provision. The discussion was made by cross tabulating the nature of suggestions against the stakeholder category and resource domain. The scrutiny of categories for the ISCs model enabled the researcher to compare the participants' insights of the agreement and points of divergence, making it an essential part of the analysis process. Since NVivo 12 was used to code and analyse the qualitative data, cross-tabulation was also performed using the same software to connect the categories against the stakeholders and resources.

3 Findings

Appraisal of stakeholder perceptions exposed many concerns for government departments by offering suggestions to improve the construction quality and lifestyle in low-income housing projects. The key findings are discussed as follows.

3.1 Role of state stakeholders

State stakeholders were identified to lead in effectively providing low-income housing in major resource domains, i.e.,

physical, financial, and policy. The following Table 1 shows the properties and the scopes for this category.

3.1.1 Uplifting housing finance

In Pakistan, the State Bank of Pakistan (SBP) is the regulatory body of all banks. It is perceived as central in uplifting the finance sector for low-income housing provision. A dedicated scheme must be introduced to facilitate housing finance for low-income households who want to obtain mortgages and loans. MS4 stated that "SBP can replicate the dedicated financial schemes from the export sector, reducing 25% taxes to 1% in the low-income housing sector, which can facilitate the beneficiaries." Fiscal funds can be channelled through public bank money by implementing SBP regulations. CS2 suggested that "public money kept in fiscal programs like the Prime Minister Relief fund could be utilized for low-income housing with tax incentives, and the money in this pool will be refunded periodically."

The government must play a major role in mortgage provision, requiring legislation. State authorities can play this role within government, as SS7 suggested that "both SBP and HBFC as state authorities can facilitate the mortgage by simplifying the conditions for low-income groups." Interest rates must be reduced to make housing loans affordable for low-income groups. MS3 advised that "banks must provide loans at a two per cent interest rate for low-income housing projects." Private developers must be regulated while executing public housing projects. MS3 suggested that "in such projects, the supervisee committee must be placed from state authorities to keep track of releasing the payments to developers for effective regulation of funds." Regulation must promote the active role of banks and force them to play their role in the low-income housing sector. SS3 recommended

Table 1 Role of state stakeholders in low-income housing provision, source: author

Properties	Scopes
Uplifting housing finance	Improving housing finance, Mortgage facilitation, regulating financial mechanisms, Strengthening Foreclosure Laws
Better planning approach	New cities, learning from local models, Consultative Master planning, feasibility studies, slum up-gradation, research culture, bylaws implementation, promoting rental housing
Incentivize private sector	Enabling Environment, customer take off, ease for profit-making, government push, streamlining NAB accountability
Adequate and extensive housing policy	Clarity of key areas, bylaws for low-income housing, implementable policy, city-wise demographics, policymaking at the provincial level, separate station units
Capacity building of state departments	Intellectual input, collaboration among other departments, TMA empowerment, programs of professional development, organizational structure
Real estate regulation	The new authority, developers with low ROI, ban incompetent developers, tax on empty plots, return on investment, differentiation of legal and illegal practice
Expedite approval process	Digital land records, one-window operation, ease of getting NOCs, discouraging rent-seeking attitude
Institutional reforms By State	Tax breaks, facilitation for housing legislation, subsidy in building materials seed money, acting as an enabler

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that "SBP must bind banks to create funds for low-income housing by providing housing finance to low- and middle-income groups. Empowering banks through foreclosure laws is essential to improving the low-income housing finance sector. SS3 stated that "foreclosure laws can help ensure the special fixed quota of housing loans for low-income groups." MS4 also added that "SBP must take up the issue of passing foreclosure laws seriously since it is the only way to keep interested banks in financing the low-income groups."

3.1.2 Better planning approach

Government authorities need a better planning approach for low-income housing projects. MS3 explained the need for new cities: "Low-income housing provision can be achieved by developing new cities as both initiatives would require proper infrastructure and social amenities." The present low-income housing programs must learn from previous projects from public housing authorities and social enterprises. SS4 suggested that "instead of devising and launching new products, state stakeholders must exercise the previous models like site and services and incremental housing models like Khudi Ki Basti (KKB)." Intelligent master planning can be well achieved with the active role of local government authorities. CS1 explained that "master planning, being a consultative process, can be run efficiently by involving the community with the assistance of DAs and TMAs, and consultants should be hired for preparing layouts."

Feasibility studies of low-income housing projects should also be carried out, which is extremely important for devising beneficiary payment plans. SS8 mentioned, "we are following this approach for NPHP in Punjab to make it affordable for target beneficiaries by proposing monthly installment between 12,000 PKR and 16,000 PKR." Building bylaws hold critical importance for housing development, and they must reflect the needs of beneficiaries. SS8 discussed that "within bylaws, road width can be designed up to thirty feet for smaller plots well to accommodate low-income groups for effective usage of space." SS11 also second this suggestion for designing such layouts in low-income housing projects.

Slums can be part of the low-income housing programs by developing those settlements with adequate infrastructure and legal property rights. SS4 recommended that "slums and squatters could be handed over to the private sector to work on slum and squatter sites to convert those into low-income housing schemes." Promoting rental housing can also lead to better planning of the whole paradigm of low-income housing. SS6 advised that "the concept of adequate housing should not restrict to house ownership only, but state authorities must also encourage rental housing in Pakistan, and for this, rental housing rules must be established."

3.1.3 Incentivize private sector

An enabling environment for private developers must ensure profit-making within the housing construction business to develop their interest in low-income housing projects. MS3 and SS7 highlighted that "the government must provide an enabling environment to private developers that incentivize them to play the role of low-income groups." SS8 and SS9, being members of HTF, suggested private developers take the lead in the NPHP project. The government should facilitate the developers because only the private sector can execute the massive low-income housing programs. Customer take-off is necessary for making low-income housing projects a success. It is because, many times, the targeted groups don't apply for the project. CS1 advised that "incentivization of private developers could be articulated by providing them customer take-off for their housing projects."

Government push is also essential for actively encouraging market stakeholders to play their role. MS5 shared that "developers must allocate 25% of the commercial housing projects for low-income groups, and in turn, state authorities must provide them with the tax relief as well as the speedy approval process for planning permission." In the context of project execution, SS8 also suggested that "if developer allocates 40% of a housing scheme for NPHP, incentives must be given through quick land approvals and NOCs, while keeping the construction standards as per the government guidelines." Negotiations are required for this from state stakeholders. SS4 approved that "government authorities must let developers make a profit from the high-income sector and cross-subsidize it by developing low-income housing units within the project."

3.1.4 Revisiting and expanding existing housing policies

Comprehensive housing policy must address the issues related to significant resource domains in the housing sector. MS3 & SS11 suggested that "policy should be updated and drafted at the federal level, which can be implemented in all provinces." SS8 also indicated that "landbank provision, finance, and construction specifications must be defined for low-income housing." State stakeholders are responsible for making policies and formulating uniform bylaws at the provincial level. Within the low-income housing sector, CS1 enlightened that "there should be universal housing bylaws across Punjab for low-income groups, which can be applied across different agencies and organizations in different cities." SS11 provided another suggestion, proposing that federal authorities prepare the bylaws for low-income housing to be followed in all provinces simultaneously.

Comprehensive and extensive policymaking would clarify key areas of the low-income housing sector. CS1 supported this idea by stating that "complete housing policy

must include rural and urban housing as well as low-income and mainstream housing." The allocation of land, infrastructure development, and distribution of funds must be done through a policy framework by assessing the housing sector annually or biannually. In the context of urbanization trends in Lahore, MS1 suggested that "city-wise demographics must determine the housing requirement within five to ten years to develop low-income housing system at the provincial level." Some stakeholders believed that policymaking must be at the provincial level as housing is a provincial subject. SS4 mentioned that "housing policy should be devised at the provincial level in consultation with the private sector." Policymaking can be improved by separating the station units according to resource domains, and academia can play an important role in the policy-making process. SS11 further explained this concept by segregating the roles of key stakeholders as follows:

- *Technical Team:* architects, civil engineers, and planners.
- *Finance experts:* economists and a representative from the Ministry of Finance to be involved with strong skills in housing finance.
- *Legal experts:* one person from the Ministry of Law to oversee the legislation issues.
- *Mutation (land clearance and status): Government* authorities to be involved in regulating the land demarcation, clearance, ownership, and other related issues.

3.1.5 Capacity building of state departments

Intellectual input is needed to enhance capacity building in government departments to provide low-income housing effectively. SS3 suggested that "state stakeholders like PLDC, PHATA, and LDA must engage young talent by hiring architects, planners, management experts, and engineers." SS1 expressed that "intellectual input from the market stakeholders can assist the state authorities in overcoming the deficiency of resource domain." Collaboration among state departments can also bring capacity building to housing authorities. SS3 recommended that "SBP must collaborate with academia to train the newly hired personnel for housing finance in HBFC."

Within the private sector, private banks must activate their domain of housing finance. SS11 suggested that "to improve the quality of housing finance, banks must appoint specialist people for this job." New and existing staff must be given the training to make them capable of the challenging work of the housing department or authority. In this regard, MS1 recommended that "programs of continued professional development (CPD) must be scheduled for economists, engineers, architects, and planners on a massive scale."

TMAs (Tehsil Municipal Administration) are organizations associated with each Tehsil (municipality) of Pakistan, responsible for spatial planning and municipal services and working closely with union councils at the local level. In this regard, CS1 suggested that "the capacity building must be done for TMAs of small cities to facilitate the land approvals; otherwise, doing the capacity building in associated DAs to avoid delays in the land acquisition process." Capacity-building programs can enhance the organizational efficiency of public departments. SS4 explained that "an effective public housing organization is structured to fix target groups for low-income housing, facilitate policymaking and promote research activities."

3.1.6 Regulating real estate sector

The real estate sector in Pakistan is complex, with the domination of some dominant private developers. SS3 suggested that "there must be an active authority to regulate the real estate in Pakistan to distribute the construction projects evenly among all developers." The PTI government recently proposed the Real Estate Regulatory Authority (RERA) to regulate all real estate activities and businesses. SS9 shared that "the basic idea behind RERA was to regulate the developers and property dealers soliciting the public interest." Banning incompetent developers was considered an essential measure for effective real estate regulation. MS4 shared that "the government authorities should ban such developers or doesn't approve of application for next lined up projects if they fail to deliver the initiated housing projects." RERA must also uplift small developers to encourage them to play an active role in low-income housing by engaging them in public–private partnerships. It could be achieved by annually targeting the developers with less ROI (return on investment). CS1 suggested that "it is important to target small developers for active engagement since their aimed ROI is around 20–30% instead of big developers like Bahria Town with 100% ROI."

Regulation of the real estate sector can be made effective by differentiating between right and wrong practices of the construction businesses in the urban development sector. SS7 shared that "government departments must facilitate the stakeholders with the right way of doing business and regulate for the misconduct of housing laws." Empty plots create land speculation in the market and attract investors to buy land instead of building housing units. SS6 and SS7 suggested that "heavy tax should be imposed on vacant plots and must be regulated by RERA."

3.1.7 Expedite approval process

Land records must be maintained through proper and efficient documentation in public housing departments to

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expedite the approval process. SS3 stated that "land records must be authorized by keeping the computerized records of land titles." The efficiency of government authorities could be measured through the time it takes to process the land-related query. SS11 suggested that "well-maintained land records must resolve the query of land status for a low-income housing project within a day." Developers need a hassle-free service to approve a housing development application for low-income groups. SS3 explained that "this process should be extremely facilitating and a one-window operation with a maximum of one year to respond for housing applications." CS1 also advocated a short duration of the approval process to avoid frustration among the private developers, who are the critical market stakeholders.

Constraints of low-income housing provision revealed the expensive and cumbersome nature of obtaining NOC from different local authorities. For this reason, MS1 advised that "NOC fees must be reduced for low-income housing projects." The rent-seeking attitude of land record officials within government departments was highlighted as an essential barrier to delaying land approvals. SS7 suggested that "digitalization of land records could help remove the rent-seeking culture to avoid corruption in state housing departments."

3.1.8 Institutional reforms

The state must act as an enabler within institutional arrangements to improve the provision of low-income housing. SS6 & SS8 suggested that "the role of government authorities is to act as an enabler by providing an ecosystem to strengthen the institutional legitimacy of stakeholder collaborations in the context of low-income housing." Constitutional change is the way to bring effective legislation by approving foreclosure laws for the housing sector. MS4 advised that "government housing departments need planning and legislation for enforcing foreclosure laws, and the constitution must facilitate such legal initiatives."

Tax relaxation is the primary relief to be provided by the government authorities in the urban development sector. MS2 described that "reduction in property taxes facilitates consumers eventually by cost-cutting the overall price of the housing unit." Civil society stakeholders performing their roles in low-income housing provision also supported this suggestion from the private sector interviewees. CS1 suggested that "the government must provide tax breaks for developers working in the domain of low-income housing." SS2 suggested the review of SBP's tax policy in this regard. SS4, a founding member of AHP in Lahore, also supported the suggestion of tax relaxation. The government authorities must also provide seed money to kick-start the planned low-income housing projects. SS2 suggested that "state stakeholders can provide subsidy in building materials as financial assistance to low-income groups by cutting the housing unit cost."

3.2 Role of market stakeholders

Market stakeholders that work in private developers, consultants, academia, and the financial sector can play an important role besides the government's role as an enabler. The integrated role of market stakeholders for low-income housing was predominantly suggested within intellectual, physical, and construction capital domains. The Table 2 shows the emerging properties for this category.

3.2.1 Facilitating project planning and execution

Technological innovativeness is critical to achieving cost-effectiveness while planning low-income housing projects. SS2 mentioned that "innovative ideas of technology can support execution process like intellectual incentives during the construction of housing projects." Market players can financially support low-income housing projects. SS1 anticipated that "the private sector should give financial relief by providing discounted construction materials prices and free consultancy services." MS1 recommended that "town planners and architects must provide the planning layout to low-income households under civic responsibility as a design prototype for a better living experience.

3.2.2 Adopting CSR

Market stakeholders like developers, builders, and consultants must adopt corporate social responsibility (CSR) while doing business activities in the housing sector. SS4 acknowledged this duty of market stakeholders and stated that "they must recognize low-income housing provision as a social responsibility to the community." In a conventional housing project, low-income housing plots are allocated for financially weaker sections of society to address the housing shortage problems. SS2 and SS8 suggested that "developers must act on the formula of 70–30%, reserving 30% of the housing scheme for low-income groups and 70% for high-end customers." According to prevailing bylaws, 20%

Table 2 Category 2: role of market stakeholders

Properties	Scopes
Facilitating project planning and execution	Technological innovativeness, discounts, free consultancy
Adopting CSR	Recognizing the obligation, Profit ratio minimization, plot allocation

of total residential areas shall be provided for apartments or small plots (3 Marla or 5 Marla) or a combination of both [43]. Following the recommendations, this suggested increase in percentage would influence the private sector to meet the housing needs of low-income groups. Profit-ratio minimization is another way to adopt this attitude. CS1 suggested that "private developers interested in low-income housing provision may practice CSR by reducing their profits in this regard."

3.3 Role of civil society

Apart from state and market stakeholders, civil society was perceived to play an active role in providing low-income housing, primarily in the policy domain and community development. Properties under this category are defined through aligned scopes Table 3.

i)   Facilitating Policymaking
ii) Due to its connection with the community, civil society can assist in devising effective policy frameworks for low-income housing provision. SS2 suggested that "social enterprises and NGOs can support the government and private sectors in policy consultations for low-income housing programs." The incorporation of perceptions of civil society stakeholders can lead to the best policy solutions. SS2 and SS4 settled that "assessment and feasibility of anticipated low-income housing projects to be launched by public authorities must consult civil society actors for the proper policy guidelines."
iii) Connectivity with the community
iv) Civil society organizations like AMC and Akhuwat represent the concerns of low-income communities in the best possible due to authentic databases for locating the targeted groups. CS2 shared that "Akhuwat knows the facilitation mechanism to help low-income groups for housing construction, and the recovery rate of our housing loans is 99.98%." MS5 endorsed such databanks

and recommended that "the government authorities must use these for the low-income housing provision." Consultants and professionals working on the community level can bring relief and awareness to the low-income category.

3.4 Role of beneficiaries

Low-income groups, beneficiaries of low-income projects, hold a significant position while devising housing and financial plans. Like civil society, it was observed that only a few research participants could perceive the role of beneficiaries within the ISCs paradigm for low-income housing provision. The following Table 4 shows the properties of this category.

i)   Acting as pressure groups
ii) Low-income groups must know their housing rights to pressure GoP to demand adequate housing. SS2 suggested that "low-income groups should act as pressure groups to push government for timely completion of the low-income housing projects." Another aspect of beneficiaries acting as pressure groups can add value to the project planning. SS1 mentioned that "beneficiaries can help government authorities identify their housing demands regarding what they want and where they want. How much do they want, and what type of housing unit (design and construction) do they want for a better lifestyle?".
iii) Community-based engagement
iv) Low-income groups need to enhance engagement activities at the community level to understand housing policies and programs better. MS3 suggested that "people should read the policies; by doing so, they can at least know about their rights in the housing sector." Such engagement demands having community leaders, as SS4 suggested that "low-income communities must choose their leader on local bases to represent them on relevant government platforms." City administrators and planners can't alone make this societal transformation due to illiteracy and limited vision among low-income groups. SS4, based on his experience of slum up-gradation, suggested that "the involvement of psychologists and sociologists with engineers and planners can establish strong communication between beneficiaries and housing authorities."

Table 3 Category 3: role of civil society

Properties	Scopes
Facilitating policymaking	Policy consultation, project assessment
Increased community Connectivity	Potential for delivery, provision of layout plan, databank utilization

Table 4 Role of beneficiaries for ISCs

Properties	Scopes
Acting as pressure groups	Pushing the government, identifying the housing demand
Community-based engagement	Policy awareness, better communication, and representation at government forums

3.5 Stakeholder mapping on PLI attributes

Attributes of power, legitimacy, and interest assisted in plotting the stakeholder influence in the context of low-income housing provision by employing PLI stakeholder mapping. Participants' leading and secondary responses were shared to present the findings of stakeholder mapping more profoundly (Table 5). It is evident from the mapping exercise that dominant and dormant stakeholder spots were given to state stakeholders. Banks, including SBP, were assigned as influential stakeholders, while most market and civil society, including beneficiaries, were designated as marginalized. Leading response as stakeholder influence is discussed as follows.

According to responses to stakeholder mapping, two provincial (PHATA and PLDC), one federal (MHW), and one local public authority (LDA) were marked as dominant ones in the context of low-income housing in Punjab. HBFC received the most exciting response from the participants. Based on its limited role previously, the only financial institution in the country was perceived to play its part in every possible manner with an increased capacity to collaborate. However, HBFC also received interesting responses from participants in other categories. Keeping mortgage facilitation, lower interest rates, and foreclosure laws in mind, participants placed the banks as influential stakeholders for the proposal of ISCs. Most participants agreed to its role in domains of power and legitimacy.

The marginalized category involves stakeholders from the market and civil society, including beneficiaries of low-income projects. This category on the stakeholder maps possesses only interest and no power and legitimacy within low-income housing provision. The willingness to implement ISCs was observed the most among the ABAD, Academia, consultants within Market stakeholders, and social enterprises and NGOs within civil society, including low-income groups as beneficiaries. Interestingly, UU was also identified as a marginalized state stakeholder. It implies that the policy and feasibility body in the provincial government sector cannot enhance and has no authority to impose ISCs regarding low-income housing provisions. Beneficiaries were also perceived as the marginalized ones by all participants.

4 Discussions

The stakeholders' roles and influence were mapped to provide low-income housing effectively through in-depth interviews and stakeholder mapping. The overall message of findings directed state stakeholders to be the central focus of the ISCs framework (Table 6).

The emerging categories exposed that government authorities must actively plan and execute low-income housing at all government tiers. Study participants highlighted SBP's dominant role in facilitating mortgage, financial regulations, housing finance, and foreclosure laws. Quality construction and better layouts of low-income housing projects were exposed as key areas for government authorities to focus on. Stakeholder mapping also plotted the stakeholder influence and indicated the dominant role of state stakeholders (Fig. 2). This fits well with the previous studies, primarily supporting the findings from Kleit et al. [15], Goetz [19], and Kleit and Page [22]. Market stakeholders anticipated adopting CSR to facilitate the government sector's infrastructure development through the cost-effective mechanism of providing construction capital. Civil society stakeholders were identified to assist in making the right policies for low-income programs based on holding authentic databases of low-income communities. Beneficiaries were perceived as pressure groups to influence the government authorities to devise payment plans and eligibility criteria for low-income housing projects. Lastly, cross-tabulating categories from
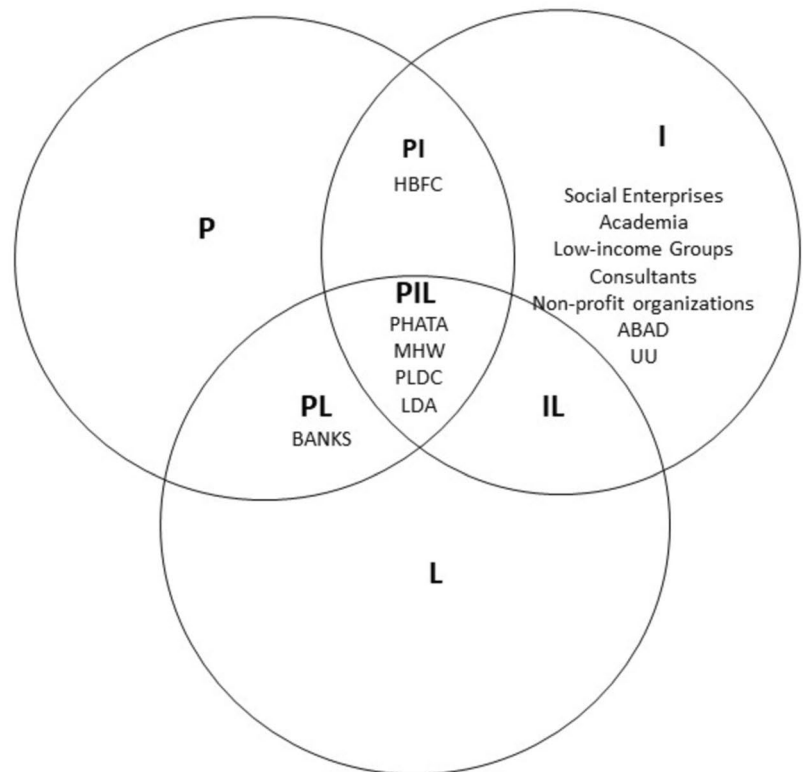
Table 5 Primary and secondary responses for stakeholder mapping through PLI (power-legitimacy-interest) matrix

Stakeholders	Leading response	Secondary responses
PHATA	PIL- Dominant	Forceful (PI)
MHW	PIL-Dominant	Forceful (PI)
PLDC	PIL-Dominant	Dormant (P), forceful (PI),
LDA	PIL-Dominant	Influential (PL)
UU	I-Marginalized	Forceful (PI)
HBFC	PI-Forceful	Influential (PL) dominant (PIL)
ABAD	I-Marginalized	Dormant (P) forceful (PI)
Consultants	I-Marginalized	–
Banks	PL-Influential	–
ACADEMIA	I-Marginalized	Forceful (PI) and Dormant (P)
Social enterprises	I-Marginalized	–
Non-profit organizations	I-Marginalized	Forceful (PI)
Low-income groups	-Marginalized	–

Table 6 An overview of Categories for Proposing ISCs in the low-income housing sector

	Categories	Properties	Data source
Objective: mapping Stakeholder Role and Influence for ISCs	Role of state stakeholders	Uplifting housing finance (improving housing finance, mortgage facilitation, regulating financial mechanism, strengthening foreclosure laws) better planning approach incentivize private sector adequate and extensive housing policy capacity building of state departments real estate regulation expedite approval process institutional reforms by state	Stakeholder interviews/stakeholder mapping
	Role of market stakeholders	Facilitating project planning and execution adopting CSR	
	Role of civil society	Facilitating policymaking increased community connectivity	
	Role of beneficiaries	Acting as pressure groups community-based engagement	

Fig. 2 Stakeholder map based on PLI Attributes for Low-income Housing provision in Punjab, Pakistan

in-depth interviews defined the stakeholder roles exclusively and scrutinized potential.

The findings were found to adopt suggestions by Myerson [44] and assigned each stakeholder category a key role extensively for ISCs. The mapping exercise plotted the influence of power, legitimacy, and interest, placing state stakeholders as the dominant, influential, and dormant. Meanwhile, market and civil society stakeholders were mainly labelled as marginalized ones. The present research has extended the [28] study by performing the stakeholder analysis. The government must act as an '*enabler*' in a collaboration framework for the effective provision of low-income housing as a key suggestion for ISCs, which resonated well with a few previous studies [14, 20, 21, 45]. [11] suggested strong coordination but lacked configuring the stakeholders against the resource domains. This study assigns stakeholder key roles within the potential resource avenue for ISCs in the low-income housing context.

The findings from stakeholder interviews have shown that adequate housing policy must be drafted to achieve tax relaxations, uniform legislation at the provincial level, and strengthen local-level authorities through decentralization of power and customer takeoff, which supported [18] findings.

SBP was perceived as the most influential in the category of state stakeholders for improving housing finance. Expediting the planning approval process was also highlighted as a key suggestion to encourage the enforcement of private developers into the business of low-income housing. The institutional ways forward for ISCs were perceived as revising the organizational hierarchy, collaborating with the private sector, and inducing civic responsibility among all the stakeholders.

The analytical connections among the categories from both data sources of interviews confirmed that project planning and execution issues can be addressed well with a better planning approach. Besides state stakeholders, who are the driving force of the ISCs for effective low-income housing provision in Pakistan, other stakeholders also have key roles. The market stakeholders were posited to adopt CSR, civil society to facilitate policy-making, and low-income groups to develop community-based engagement. These suggested key roles align with the CSR-based collaborative model by Othman and Abdellatif [16].

The cross-tabulation of stakeholders and the resource domains further assisted in identifying the conceptual constructs of ISCs theory by putting stakeholders and
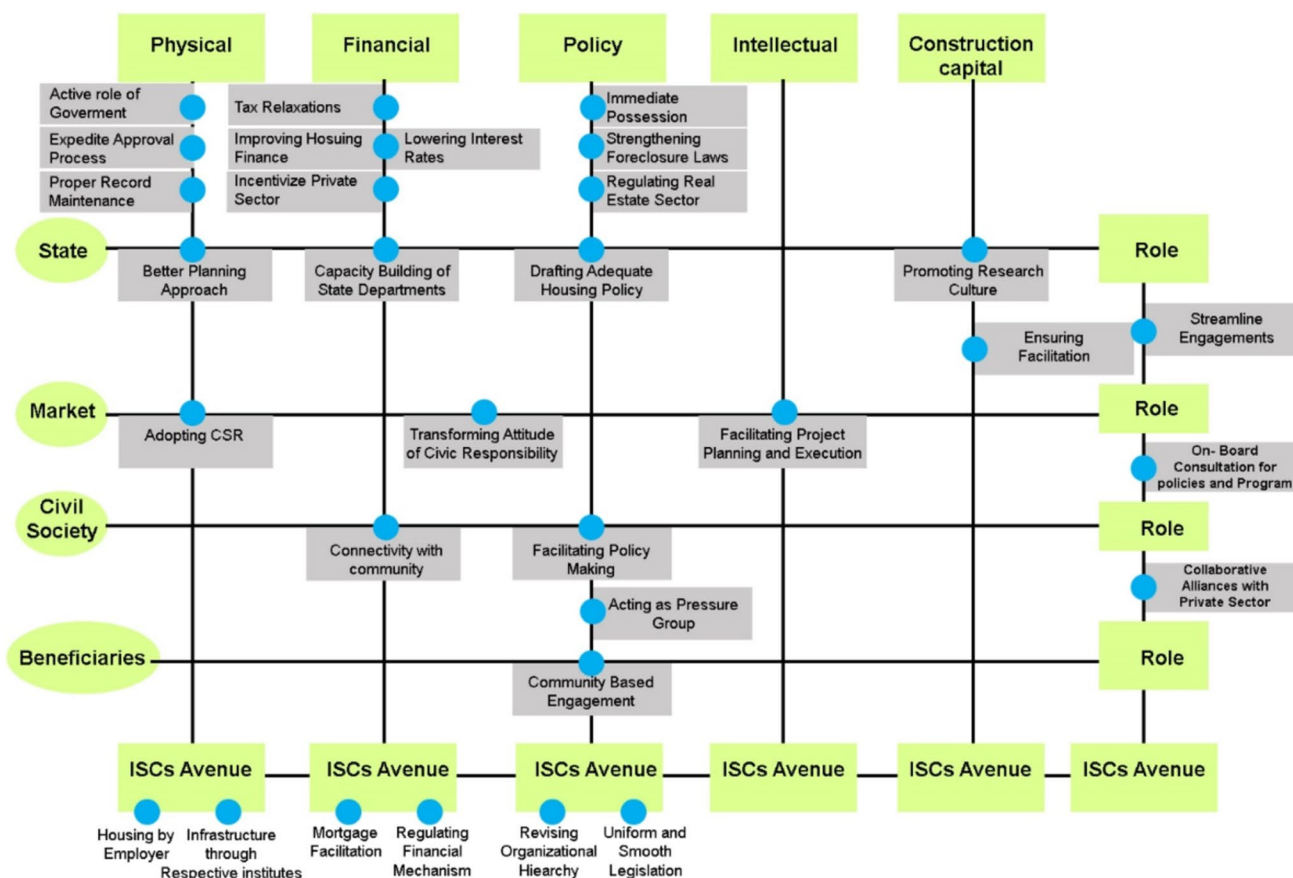

Fig. 3 Extracting core categories for ISCs theory building through stakeholder-resource cross-tabulation of findings, Source: Author

their desired engagement patterns for associated resources (Fig. 3). Hence, this exercise has summed up the research objective precisely and helped the researcher to drag the implicit meanings from the perceptions and experiences of study participants. The figure shows the points of convergence resource-wise at the bottom row of the diagram. In contrast, the right side shows the fundamental role of each stakeholder on behalf of its contribution to the ISCs paradigm. Unlike the previous studies, this study offers a collaborative framework in the form of the Malik ISCs Model by introducing the state as an enabler, the market as a facilitator, and civil society as a mediator towards collaboration constructs within institutional arrangements and resource domains for low-income housing development.

4.1 Scrutinizing the resource avenues

The key focus areas for acquiring finance for low-income housing provision included mortgage facilitation to low-income groups, building data banks for target groups, tax relaxations, and ease of profit-making for developers. Cross-tabulation made it obvious that state stakeholders SBP and HBFC, NGOs like Akhuwat from civil society, and commercial banks from the market sector must work together in this domain of ISCs. The properties of categories against physical resources suggest resolving the issue related to land matters for low-income housing through consultative master planning, developing new cities, immediate possession to beneficiaries, land records maintenance, and slum up-gradation. Public authorities such as NPHA from the federal level, PLDC and PHATA from the provincial level, and LDA from the local government level can assist in executing these steps.

Suggestions for ISCs framework have indicated that the government department should do extensive policymaking by focusing on the housing demand, assessing housing programs, improving organizational structure, and approving foreclosure law. Here, civil society and low-income groups can play a significant role by highlighting the actual problems of the demand and supply of low-income housing to government authorities. State stakeholders like MHW, LDA, NPHA, and SBP; academia from the market; Akhuwat and AMC from civil society; and beneficiaries themselves can effectively achieve this recommendation.

Intellectual input by hiring competent professionals in government departments can help address housing planning and design challenges. Consultants and organizations like IAP, PCATP, and IPP from the private sector and government departments like the Communication and Works Department (GoPb) could play a convincing role in this resource avenue. Market stakeholders majorly operate the resource domain of construction capital for developing infrastructure. However, the regulation of infrastructure facilities

like water, gas, and electricity is managed through government authorities at the local level. LDA and other government authorities, including WASA and WAPDA, must provide ease through quick approvals for developing adequate infrastructure and facilities. In contrast, developers can contribute by delivering discounted construction equipment and materials for low-income housing schemes.

4.2 Defining stakeholder roles

The cross-tabulation has proposed what role stakeholders should play in their resource domain and category for ISCs. The concentration of suggestions proposes the state stakeholders to be dominant by playing their role as 'Enabler' to guide ISCs within low-income housing. The market is identified as a *'Facilitator'* for practicing CSR when making profits and must cross-subsidize their profit by investing in housing projects for low-income groups. As a mediator between government and community on the ground and local level, civil society can work with low-income households due to well-maintained data banks. It could extensively assist the government in adopting a better planning approach for low-income housing and policies. Beneficiaries must act proactively by suggesting government authorities and keeping aware of low-income groups' needs and demands for adequate housing.

5 Malik ISCs model for low-income housing provision

This section explains the new theory generated from the grounded data as a collaborative model for effectively providing low-income housing in Pakistan, which emerged as the Malik ISCs Model. The discussions on findings revealed that the stakeholder roles and associated resource avenues concerning collaboration processes expose the two universal points of low-income housing provision, i.e., planning and execution. The planning phase as a starting point for housing and the execution phase as an ending point postulates stakeholders within these two major spheres. Connecting these dots of complementary nature resulted in a planning bubble (PB) and execution bubble (EB) as foundations for the Malik ISCs Model of low-income housing provision. Positioning stakeholders must configure the PB and EB at the right spots. From key findings, it is evident that state stakeholders being enablers of ISCs take the central position, and institutional legitimacy takes the bottom spot as the foundation of collaboration. It also presents the market as a 'facilitator' who must achieve the central place for the execution bubble. As a mediator, civil society takes the top spot for overseeing the balance of what is being promised and delivered to beneficiaries. The central spot of the

planning bubble taken by beneficiaries as considering their housing requirements would lead to better low-income housing programs and policies. The placement of stakeholders within the planning and execution bubbles articulate the four quadrants of resource domains structured through meaningful connections, developing the Malik ISCs Model of low-income housing provision (Fig. 4).

Malik ISCs' model of low-income housing revolves around planning and execution bubbles. From the figure, the planning bubble of low-income housing provision involves the state and beneficiaries with the partial role of civil society and institutional legitimacy factors. The execution part exists at the right side of the ISCs framework, which involves the market with the partial role of state stakeholders and civil society roles. The top and bottom of both PB and EB involve civil society as mediator and institutional legitimacy in partial capacities. Interestingly, the State, the model's central player, shares two-fold connections with this collaborative model's other four primary elements. Even though the state holds a prominent spot and can control the rest of the stakeholders, it is still indirectly impacted by beneficiaries' responses, the demands of social enterprises as civil society, and market trends set by developers, banks, and professionals. The components of the ISCs framework are explained below.

5.1 Institutional legitimacy

The bottom spot in the ISCs framework of low-income housing is institutional legitimacy. In its description, the term suggests stakeholders must work institutionally by properly enforcing regulatory and policy frameworks to provide low-income housing effectively. To develop an institutional legitimacy environment, avoiding conflicts on constitutional, personal, and professional platforms is essential. The decentralization of state power and clarity in the roles of state authorities at all government levels would enhance the capacity of stakeholders to work with the spirit of institutional collaboration for the effective provision of low-income housing. Furthermore, achieving institutional legitimacy in the low-income housing provision framework would facilitate the market sector by expediting the project approvals and helping low-income groups deliver the project promptly.
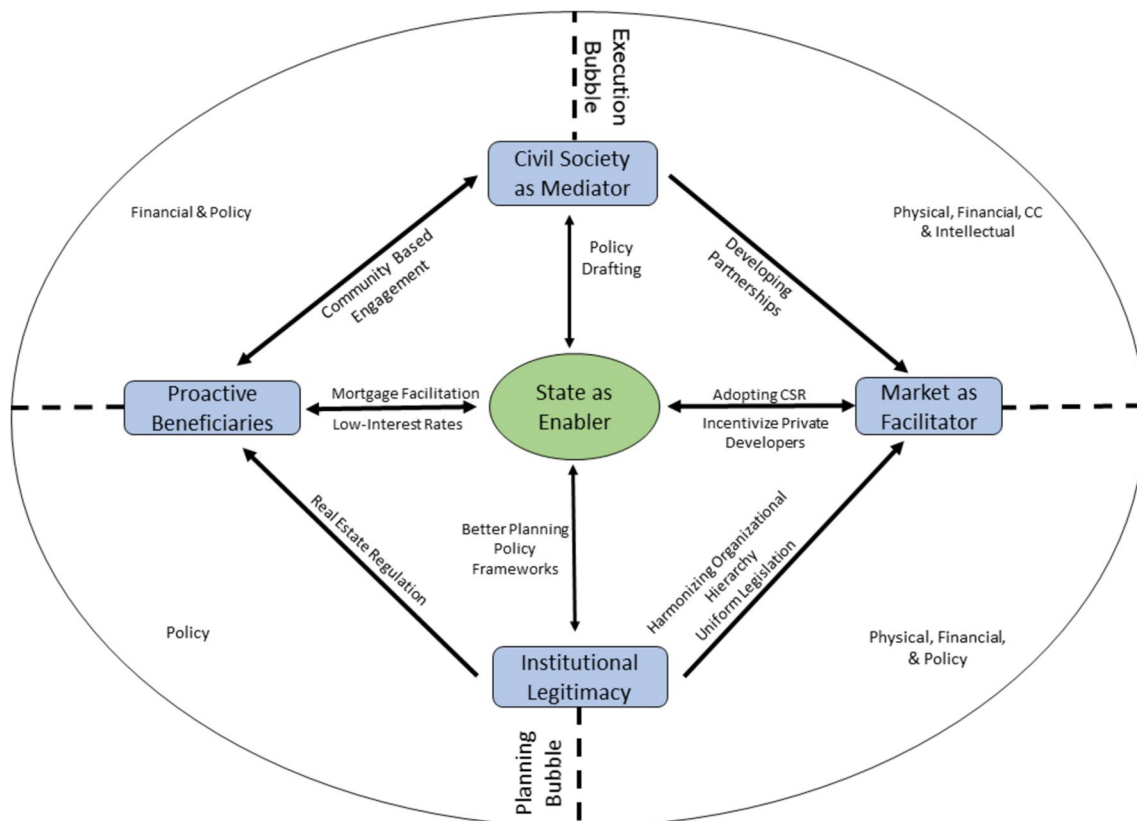

Fig. 4 Malik ISCs' model of low-income housing provision, source: author

5.2 State as enabler

The mapping exercise's observation of state stakeholders as dominant, influential, and dormant conveys the message to ensure their performance as enablers in most resource domains. The role of the state stakeholders as enablers demands the dedicated role of government authorities and departments in planning, policy, the real estate sector, and the facilitation of developers. Each section is discussed precisely as follows.

i) Thoughtful planning

The state must provide thoughtful planning through new cities and consultative master planning for land matters. The immediate possession and longer mortgage tenure could help ease the housing finance for low-income groups. Slum redevelopment could contribute to this sector as it doesn't need new land or customer take-offs. This approach suggests redeveloping illegal urban lands with all major infrastructure and facilities besides launching new low-income housing projects. All such matters of thought and decision-making processes would uplift the planning bubble in its true spirit for the Malik ISCs Model of low-income housing provision. The planning process must be well thought out to address the issues and challenges of adequate housing for the target groups, such as low-income groups, in the present study.

ii) Comprehensive policies

The planning bubble must be built on comprehensive housing policies. Revised and updated housing policy must include databases focusing on the housing shortage and land availability. Coordination with the efficient flow of information between government departments at three tiers, i.e., federal, provincial, and local, is necessary for extensive policymaking. The policies for approval processes, foreclosure laws, and uniform bylaws must be designed immediately to reduce institutional complexity in the housing sector on all government levels.

iii) Real estate management

To effectively regulate developers in the private sector, the ruling government must empower regulatory authorities like RERA in the Pakistani context. The build-and-sell model must be adopted to discourage the transactions of unbuilt property to control land speculation and price escalation. In this regard, abandoned housing projects can be utilized with regulatory measures as an adequate shelter for low-income groups. Promoting the culture of rental housing at affordable rates can be another way to regulate the real estate sector in favor of low-income groups. The smart regularization of the real estate sector emerged as a key component of the Malik ISCs Model of low-income housing provision within the execution bubble.

iv) Incentivization of private sector

Enabling an environment for investors through fair accountability must ensure developers feel confident while working with state stakeholders for low-income housing projects. Incentivization of the private sector would strengthen the execution bubble of the Malik ISCs Model. Developers' reliable profile can be ensured by providing customer take-offs for low-income housing schemes. Small developers with less ROI must be preferred by state departments while tendering state-owned low-income housing projects. The interest of developers in low-income housing must be rewarded by providing them ease in quick approvals for other commercial housing projects.

5.3 Market as facilitator, civil society as mediator and proactive beneficiaries

Besides the state as an enabler, the Malik ISCs Model also assigns pivotal roles to other stakeholders, such as the market as a facilitator, civil society as a mediator, and low-income groups as proactive beneficiaries. In the case of the market as a facilitator, professionals and resource experts must provide intellectual input by employing civic responsibility principles. CSR-based efforts of consultants can facilitate the beneficiaries with essential planning and interior layouts of low-income housing units. In return for enabled profit-making, developers can employ cross-subsidy models for low-income housing. In addition, developers must offer discounted materials and construction costs for execution and infrastructure development in such dedicated housing schemes for low-income groups.

NGOs and social enterprises, as dominating civil society representatives, have an elevated level of connectivity with beneficiaries of low-income housing. Hence, appointing civil society stakeholders as mediators, as suggested by the Malik ISCs Model, would help devise effective financial solutions and policy guidelines by consulting the data banks of target groups across the country. As pressure groups, beneficiaries can assist the government authorities in drafting housing demands and requirements. The proposed position of beneficiaries within the Malik ISCs Model demands low-income groups to have a proactive attitude through anticipatory and participatory responses for low-income housing projects and policies. Undoubtedly, community-based engagement can motivate the local representatives of beneficiaries to better communicate with state stakeholders about low-income housing provision.

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5.4 Recommendations by Malik ISCs model

This section presents the recommendations by the Malik ISCs Model about key stakeholder engagements within the institutional arrangements in a global context. A typical low-income housing project's timeline lasts over a few years, less than a decade on average. By employing ISCs recommendations in case of an execution bubble, the time duration could be significantly reduced by up to fifty per cent less. Besides providing seed money for project initiation, the State acting as an enabler must expedite the approval process of land matters and incentivize the private sector through the ease of profit-making. The planning domain of the Malik ISCs Model emphasizes incompetent state legislation and constitutional conflicts within weak institutional arrangements. Fair accountability must be sustained in the housing sector by involving well-informed and trained government departments in the capacity of state stakeholders. Uniform bylaws at the provincial level and consultative master planning at the local level would ease the coordination patterns among the public housing authorities. Policy enforcement could improve politically vested interests check and balance at ground level within the low-income housing context.

Harmonizing the organizational hierarchies at all government tiers would clarify stakeholders' roles and reduce overlapping jurisdictions. It must be achieved to avoid the pro-longed land clearance issues, land titles, and planning permission approvals of new low-income housing projects. Attachment of architects and planners as professionals with beneficiaries can improve their post-occupancy experiences by designing proper layout planning and covered area ratios. Above all, site selection has a key role in housing development. New cities must be planned with a perspective of infrastructure development and social amenities to accommodate low-income housing. In addition to this, the Malik ISCs Model recommends improving housing finance availability and its effective regulation to address most of the barriers that limit the capacity of state stakeholders and beneficiaries. Infrastructure and facilities provision issues must be addressed through respective government departments at the local level. It could positively attract potential beneficiaries for low-income housing projects. The Malik model, which places the market as a facilitator, could resolve the execution issues by providing cost-effective building materials and low construction rates through the platform of developer associations.

5.5 Policy implications for the Pakistan housing sector

State stakeholders were suggested to be the core component of the ISCs framework within the low-income housing arena. Hence, the significant implications go out for government authorities and departments working on three tiers, i.e., federal, provincial, and local, as follows:

i) *Promoting institutional legitimacy:* to improve procedural arrangements from cabinets at federal and provincial levels; to pass foreclosure laws without delay; to bring clarity in roles, i.e., execution, planning roles, and supervisory roles with state stakeholders (SBP, MHW, PLDC, PHATA); to achieve organizational harmony through active communication and flow of information.

ii) *Streamlining policy frameworks:* to draft a comprehensive policy at the federal level covering aspects of urban and rural housing; to practice onboard stakeholder consultation; develop a housing database at the local level with the help of DA, TMA, and UCs.

iii) *Uplifting the state departments:* to carry out extensive capacity-building of government authorities; to explore beneficiaries' experience through post-occupancy surveys; to improve research opportunities for intelligent building techniques and construction materials.

iv) *Innovation in financing products:* to design mortgages with longer tenure to lower interest rates, to make efficient use of revolving funds, and to impose the immediate possession mandatory in public low-income housing projects once the allottee makes the down payment.

v) *Authorizing institutional collaboration:* to develop shared understanding in all stakeholders for site selection of low-income housing projects; to promote vertical housing development; to conduct seminars and awareness campaigns and to give accreditation points for Continuing Professional Development (CPD) to attendees, to induce the concept of institutional collaboration through the participatory decision-making process.

vi) *Real-estate sector regulation:* to develop an intelligent regulation system of real estate by dedicated local authorities; to enforce the concept of build & sell; to control the price escalation by imposing heavy taxes on open land plots.

6 Conclusion

The present research has achieved the study objective as an innovative housing analysis for understanding the low-income housing arena by employing grounded theory, hence putting forward the Malik ISCs Model for the effective provision of low-income housing in Pakistan. Considering the policy implications as reference points for well-planned resource management and configuration of favorable institutional arrangements across the different stakeholder groups can assist well in providing a healthy housing lifestyle to low-income groups of low-income countries regardless of geographical location. This informed discovery of collaboration through the Malik ISCs Model for effectively providing low-income housing projects suggests some key points for the broader

perspective of the global policy discourse of housing development, emphasizing the low-income segment. First is including all stakeholders to create an enabling environment for collaboration. Second, this model recommends the intervention intervals for each stakeholder for effective low-income housing provision. Third, cultural awareness about institutional collaboration must be promoted by engaging sociologists with beneficiaries and professionals. Fourth, organizational hierarchy is the core to achieving institutional legitimacy among stakeholders of low-income housing provision. ISCs framework may need to be altered for other geographical locations within Pakistan and other countries to develop more dedicated low-income housing provision guidelines. This is because the institutional arrangements for low-income housing may vary in different cities within a province or different countries. Other geographical locations can implement ISCs framework for exploring the low-income housing sector concerning resource-based stakeholder engagements, collaboration barriers, and institutional arrangements.

However, the authors acknowledge certain limitations of the study, particularly the geographical restrictions that may affect the generalizability of the results. Conducted within a specific region, the research examines housing needs, regulatory frameworks, and socio-economic dynamics that may differ significantly from those in other areas. This geographic focus limits the applicability of the findings to regions with similar economic, environmental, and socio-political contexts. Nevertheless, the study's original contribution lies in its adaptation of the Malik ISCs Model to housing within a specific developing region. This offers a framework that emphasizes the interaction between state, market, and civil society in tackling local housing challenges. By grounding the model in a localized context, the study provides valuable insights into how systems thinking can promote sustainable housing practices in developing countries. This localized application serves as a foundation for further research, which may explore how the model could be modified or expanded to address the unique housing challenges in other geographic areas. Also, Research was limited due to the restricted number of interview participants for exploring stakeholder experiences. Difficulty in participant recruitment from the state and market stakeholder categories was observed due to the sensitive nature of the subject and busy working schedule. Time constraints are common for grounded theory studies since they span a long time due to their concurrent data collection and analysis nature, besides achieving theoretical saturation in the core themes. However, to meet the official requirements, the study was kept within a set time framework to get timely completion.

This research has extended collaboration theory by associating relevant theoretical approaches through the Malik ISCs Model. Further research will be required to validate the Malik ISCs Model as a collaboration strategy composed of multiple realities of the low-income housing sector. Therefore, an empirical investigation must be carried out in the future by surveying the personnel of public and private departments, creating scope for an empirical analysis through a quantitative study. There is an urgent need to boost Pakistan's low-income housing sector; hence, provision models of low-income housing must be detailed to suggest better tendering, procurement, and administration to enable the private sector. Stakeholder analysis within low-income housing studies could be done extensively on the provincial or local levels by employing the PLI matrix and extending the definition of power attribute in personal, political, or positional contexts.

Declarations

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