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THE ROLE OF SOCIAL CAPITAL IN THE UTILIZATION OF GREEN OPEN SPACES IN THE URBAN ENVIRONMENT OF MALANG: A PHENOMENOLOGICAL STUDY IN THE SAWOJAJAR NATIONAL HOUSING COMPLEX

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Abstract

This study examines the role of social capital in the utilization and transformation of urban green open spaces in Perumnas Sawojajar, Malang City, Indonesia. Employing a qualitative approach with a phenomenological orientation, data were collected through participant observation, interviews, and documentation involving residents, community leaders, housing developers, and relevant government institutions. Data were analyzed through open, axial, and selective coding to identify patterns of social interaction and environmental management. The findings reveal that social networks, interpersonal trust, reciprocity, shared norms, and proactive participation strengthen collective action and community involvement in green-space management. However, social capital also facilitates the transformation of designated green spaces into educational, religious, and other communal facilities, reflecting competing social and ecological priorities. Furthermore, unclear institutional responsibilities and limited coordination among stakeholders constrain effective environmental preservation. The study highlights the dual role of social capital as both a mechanism for environmental stewardship and a potential driver of spatial transformation. It concludes that sustainable green-space management requires participatory governance, clear institutional accountability, and stronger collaboration between communities, developers, and local governments.

Keywords: Social Capital, Urban Green Open Spaces, Community Participation

INTRODUCTION

Rapid urbanization and population growth have increased pressure on urban green open spaces (UGOS), particularly in developing countries. These spaces provide ecological, social, and recreational benefits that contribute to urban sustainability and community well-being. However, expanding residential areas and infrastructure development frequently lead to green-space conversion and environmental degradation (Han et al., 2022; Wang et al., 2024). In Indonesia, Law No. 26 of 2007 requires urban areas to allocate at least 30% of their territory to green open spaces. Merinda & Mahanani (2025) emphasize that effective green-space preservation requires sustainable planning, institutional coordination, and community participation.

The transformation of green open spaces is increasingly evident in residential neighborhoods experiencing rapid socioeconomic development. Perumnas Sawojajar in Malang City illustrates this phenomenon, as several designated green spaces have been converted into religious, educational, and community facilities. These changes reflect competing demands between environmental preservation and residents' social needs. Safitri & Kholid (2025) highlight the importance of participatory governance in maintaining urban green spaces, while Hutauruk et al. (2025) emphasize community involvement in neighborhood environmental management. Therefore, understanding the social factors influencing green-space transformation is essential for sustainable urban planning.

Social capital provides an important theoretical perspective for understanding community participation in managing shared environmental resources. Yoon (2019) conceptualize social capital through trust, social networks, shared norms, and collective cooperation. These elements facilitate community participation and strengthen collective responsibility for environmental management. Cimoli & Miklošević (2025) demonstrate that social networks support community garden sustainability, while Jalil et al. (2021) identify social capital as an important factor in collective environmental action. Similarly, Fernández-Salido et al. (2025) highlight the reciprocal relationship between urban green spaces and community social cohesion.

Previous studies have examined community participation and social capital in environmental management from various perspectives. Mina et al. (2024) emphasize participatory approaches to green-space management, while Situmorang (2023) demonstrates the relationship between social capital and collective natural resource management. Panyavaranant et al. (2023) further identifies social and institutional factors influencing sustained citizen participation in urban green-space governance. However, limited attention has been given to how social capital influences both the preservation and functional transformation of green spaces in socially diverse residential communities. This gap suggests the need to investigate how community networks and collective interests shape environmental decisions and spatial changes.

Accordingly, this study examines the role of social capital in the utilization and transformation of green open spaces in Perumnas Sawojajar, Malang City, Indonesia. It focuses on social networks, trust, reciprocity, shared norms, and proactive community participation in neighborhood environmental management. The study also investigates the responsibilities of residents, developers, and local government institutions in maintaining green spaces. Using a qualitative approach, the research explores community experiences and social interactions underlying green-space transformation. The novelty of this study lies in examining the dual role of social capital in supporting environmental preservation while potentially facilitating green-space conversion, thereby contributing to more inclusive and sustainable urban governance.

RESEARCH METHOD

This study employed a qualitative research approach with a phenomenological orientation to investigate the role of social capital in the utilization and transformation of urban green open spaces in Perumnas Sawojajar, Kedungkandang District, Malang City, Indonesia. The approach was selected to explore residents' experiences, perceptions, and social interactions concerning the management of shared environmental resources. The investigation focused on social networks, trust, reciprocity, shared norms, and community participation in decisions affecting green-space utilization. Particular attention was given to interactions among residents, community organizations, housing developers, and local government institutions. This approach enabled an in-depth understanding of how social relationships influence collective decisions and changes in neighborhood green-space functions.

Data were collected through participant observation, interviews, and documentation. Informants were selected purposively and included community leaders, neighborhood association representatives (RT/RW), women's community organization members (PKK), residents, housing developers, and relevant local government officials. Participant observation examined community activities and the physical conditions of green spaces, while interviews

explored residents' perceptions and experiences regarding land-use changes. Supporting documents included photographs, maps, and relevant administrative records. Data were analyzed using a grounded theory-based coding procedure comprising open coding, axial coding, and selective coding to identify categories, relationships, and emerging themes. The findings were subsequently interpreted through social capital theory to explain the relationship between community networks, collective actions, and green-space transformation.

RESULTS AND DISCUSSION

Results

Spatial Characteristics and Development of Perumnas Sawojajar

The findings indicate that the utilization of urban green open spaces in Perumnas Sawojajar is closely associated with the spatial development of Malang City and the socioeconomic characteristics of its residential communities. The study area is located in Kedungkandang District, in the eastern part of Malang City, East Java, Indonesia. The research particularly examines neighborhood green spaces distributed across Sawojajar, Madyopuro, and Lesanpuro, where residential development has influenced the relationship between built environments and communal open spaces. These neighborhoods contain residential communities with different socioeconomic backgrounds, occupations, educational experiences, and cultural characteristics. Such diversity provides an important context for understanding how collective interests influence the management and transformation of neighborhood green spaces.

The original development of Perumnas Sawojajar incorporated residential facilities and designated green open spaces within an integrated housing plan. According to the planning information presented in the manuscript, approximately 280 hectares were allocated to the Sawojajar I and Sawojajar II residential developments, comprising 168 hectares of residential land and 112 hectares of green open spaces. This distribution represented an intended allocation of 60% for residential development and 40% for green open spaces. The proportion illustrates that environmental considerations formed an important component of the original development concept. Nevertheless, subsequent changes in land utilization indicate that maintaining the original spatial allocation became increasingly difficult as residential communities expanded and demanded additional public facilities.

Table 1. Planned Land Allocation for Residential Development and Green Open Spaces in Perumnas Sawojajar

Residential Area	Total Area (ha)	Residential Land	Planned Green Open Space
Sawojajar I	180	108 ha (60%); 6,000 houses	72 ha (40%)
Sawojajar II	100	60 ha (60%); 3,000 houses	40 ha (40%)
Total	280	168 ha (60%); 9,000 houses	112 ha (40%)

The planned allocation demonstrates that green open spaces were initially integrated into the residential development structure rather than treated merely as vacant land. Their intended functions included environmental protection, recreational activities, social interaction, and support for neighborhood ecological balance. The distribution of green spaces across

residential areas was expected to provide relatively accessible communal facilities for different population groups. However, the field findings indicate that the availability of designated green spaces did not automatically ensure their continuous preservation. Changing community requirements, limited maintenance, and uncertainty regarding land-management authority contributed to the gradual modification of their physical characteristics and intended functions.

The findings also reveal that the physical arrangement of Perumnas Sawojajar reflects differences in residential housing categories and socioeconomic conditions. The original housing development included Type 21 and Type 36 houses intended primarily for lower-income households and government employees, alongside Type 45 and Type 54 houses serving other residential groups. These differences contributed to the formation of socially heterogeneous neighborhoods with varying priorities concerning public facilities and communal activities. Although residents shared the same broader residential environment, their expectations regarding the utilization of green spaces were not necessarily identical. Consequently, neighborhood green-space management developed through interactions between formal planning arrangements and the everyday requirements of local communities.

Land-Use Characteristics and Green Open Space Availability

The spatial planning information indicates that the wider Kedungkandang District contained several functional development zones with different population capacities and infrastructure priorities. These zones included residential development, commercial services, educational institutions, and designated recreational areas. Such functional diversity influenced the distribution and utilization of urban green spaces, particularly in neighborhoods experiencing increasing demand for public services. The research identified the spatial development units as important administrative contexts for examining the relationship between population distribution and open-space requirements. Table 2 presents the population development plan recorded in the original manuscript.

Table 2. Population Development Plan for the Perumnas Sawojajar Planning Area

Planning Zone	Development Unit	Area (ha)	Main Development Functions	Planned Population
SBWK A	UL A-1	176	BWK service center	15,400
SBWK A	UL A-2	119	BWK service center and commercial services	10,320
SBWK B	UL B-1	214	Commercial services, higher education, and open-space development	17,160
SBWK B	UL B-2	188	Residential development	15,920
SBWK B	UL B-3	274	Residential development	22,560

These planning figures show that residential neighborhoods were developed within a broader spatial system involving commercial, educational, and recreational functions. The designation of different development units indicates an attempt to distribute urban activities

across the district while accommodating future population growth. However, the coexistence of multiple land-use functions also created potential competition for available space. This situation is particularly relevant to neighborhoods where the establishment of schools, religious buildings, and other community facilities may require land originally designated for alternative purposes. The findings therefore identify the relationship between population development and land-use management as an important factor influencing the sustainability of neighborhood green spaces.

The historical land-use records provide further information about the distribution of developed and undeveloped land within Kedungkandang District. The original manuscript classifies land into three categories: developed land, developed land serving green open-space functions, and undeveloped land serving green open-space functions. This classification distinguishes conventional urban infrastructure from sports fields, parks, cemeteries, agricultural land, and other open areas. The data are relevant because they demonstrate that the wider category of land functioning as open space includes both landscaped public areas and land that remains undeveloped. Consequently, the physical existence of undeveloped land should not automatically be interpreted as evidence of effective green-space management or long-term environmental protection.

Table 3. Historical Land Use in Kedungkandang District, Malang City, 2002

Land-Use Category	Area (ha)
A. Developed Land	
Residential areas	938.1593
Government and private offices	6.4850
Educational facilities	31.1215
Healthcare facilities	0.8051
Religious facilities	3.4749
Markets	1.9365
Commercial shops	8.4248
Warehouses	4.2772
Hotels and accommodation	0.1575
Industrial facilities	5.6024
Development facilities	173.5444
Reported subtotal A	1,137.9922
B. Developed Land with Green Open-Space Functions	
Sports fields and parks	5.9964
Cemeteries	20.7556
Recreational facilities	0.3484
Subtotal B	27.1004
C. Undeveloped Land with Green Open-Space Functions	
Rice fields	746.4310
Dry agricultural land	2,004.9580
Gardens	0.2840
Forestry land	0.0000

Fisheries land	0.2810
Livestock land	0.0000
Allocated vacant land	36.4134
Unallocated vacant land	0.0000
Subtotal C	2,788.3674
Reported total A + B	1,165.0926
Reported total B + C	2,815.4678

The land-use distribution indicates that a substantial proportion of Kedungkandang District historically consisted of agricultural and undeveloped land. Nevertheless, the availability of these areas did not necessarily correspond to the provision of accessible, formally protected neighborhood parks. Agricultural land, vacant land, and designated public green spaces perform different functions and may be subject to different management arrangements. The field findings suggest that green spaces located within residential neighborhoods were particularly vulnerable when their ownership, maintenance responsibilities, and permitted uses were insufficiently defined. Accordingly, the historical land-use data provide essential spatial context but cannot independently establish the current condition or legal protection status of neighborhood green spaces.

The study further identified several neighborhood green-space locations, including Jalan Danau Laut Tawar, Jalan Danau Matana, Jalan Danau Maninjau Selatan VI, Jalan Simpang Danau Maninjau Selatan I, Lapangan Dirgantara, Jalan Danau Tigi, and Jalan Selat Karimata. Green corridors and road medians were also documented along Jalan Danau Toba and Jalan Danau Kerinci. These locations demonstrate that neighborhood green spaces were distributed through multiple forms rather than concentrated exclusively in large public parks. Their condition varied according to maintenance arrangements and patterns of community use. The manuscript reports that almost 90% of the intermediate green open spaces (RTH Antara) were located within Perumnas Sawojajar, although this historical estimate was not accompanied by a detailed spatial calculation.

The Role of Social Capital in Neighborhood Green-Space Management

The qualitative findings reveal that social capital constitutes an important mechanism underlying community participation in the utilization and management of neighborhood green spaces. Social relationships developed through formal and informal organizations facilitate communication, cooperation, and collective activities among residents with different socioeconomic backgrounds. Formal community networks include neighborhood associations (RT and RW), women's community organizations (PKK), integrated health service groups (Posyandu), and community welfare organizations. Informal networks include mosque management committees, religious study groups, youth associations (Karang Taruna), mosque youth groups, sports organizations, and veterans' associations. These organizations provide opportunities for residents to develop relationships that extend beyond their immediate households and contribute to neighborhood-level collective action.

The findings indicate that formal organizations frequently provide an institutional foundation for the development of informal community networks. Residents initially participate in neighborhood administrative activities and subsequently establish relationships through religious, recreational, and social initiatives. These interactions facilitate information exchange, mutual assistance, and cooperation in responding to community needs. The presence of multiple organizations also enables residents to participate according to their interests,

occupations, and available resources. Consequently, social capital emerges through interconnected community activities rather than through the influence of a single institution or individual.

Community reciprocity represents another prominent dimension of social capital identified in the study. Residents participate in mutual assistance through food sharing, voluntary financial contributions, religious activities, neighborhood security, and social support during bereavement. These practices strengthen interpersonal relationships and establish expectations of mutual responsibility. Collective participation also creates opportunities for residents to mobilize financial and human resources for neighborhood improvement. However, the findings suggest that reciprocal cooperation is primarily organized around community needs, which may include both environmental maintenance and the construction of additional communal facilities.

Interpersonal trust and shared norms further contribute to the continuity of collective activities. The research indicates that long-term residential relationships encourage familiarity, tolerance, and confidence among community members. Shared experiences of living in the same housing development reinforce the perception that residents face similar challenges and should cooperate in addressing them. Community agreements establish informal expectations concerning acceptable behavior, contributions, and participation in neighborhood activities. These mechanisms help maintain social cohesion despite differences in educational backgrounds, occupations, religious practices, and economic circumstances.

Social values also influence the priorities established through collective decision-making. The original findings identify education, religious life, employment, economic security, cleanliness, and neighborhood safety as important values shaping community activities. These values encourage residents to support initiatives perceived as beneficial to everyday life. Nevertheless, they also contribute to differences in how available green spaces are interpreted and utilized. Where religious, educational, or security needs receive greater collective attention, the development of supporting infrastructure may become a more immediate priority than preserving an existing open-space function.

Table 4. Dimensions of Social Capital Identified in Perumnas Sawojajar

Dimension	Evidence from the Study	Relevance to Green-Space Management
Social networks	RT/RW, PKK, Posyandu, religious associations, youth groups, and sports organizations	Facilitate communication and collective activities
Reciprocity	Food sharing, financial contributions, voluntary assistance, and mutual support	Encourages resource mobilization and cooperation
Trust	Established neighborhood relationships and mutual dependence	Supports collective commitments and community coordination
Social norms	Community agreements, tolerance, and shared behavioral expectations	Guides participation and neighborhood conduct
Shared values	Religion, education, cleanliness, security, and social welfare	Influences priorities in the utilization of communal space

Proactive participation	Community initiatives and voluntary involvement	Encourages collective responses to neighborhood needs

An important finding is that social heterogeneity does not necessarily prevent the development of strong neighborhood networks. Residents with diverse social backgrounds may develop common interests through occupational associations, religious organizations, and collective neighborhood activities. The original manuscript identifies RW VII as an example in which a prominent occupational characteristic contributed to the formation of a more cohesive community network. This suggests that shared interests can facilitate cooperation even when the wider residential population remains socially diverse. However, the nature of these interests also influences the activities that communities prioritize and the physical facilities they seek to establish.

The findings therefore indicate that social capital should not be interpreted exclusively as an instrument for environmental preservation. Although community relationships provide the organizational capacity necessary for collective maintenance, their immediate outcomes depend on shared priorities and local circumstances. Strong cooperation may support neighborhood cleanliness, security, and greenery, but it may also facilitate construction activities that reduce the availability of open land. The direction of collective action is consequently influenced by the relationship between social values, perceived community needs, and established spatial regulations. This pattern represents an important empirical characteristic of the Sawojajar case.

Physical Transformation and Utilization of Neighborhood Green Spaces

The study identifies a close relationship between community activities and the physical characteristics of neighborhood green spaces. In the original development concept, these areas were expected to support ecological preservation, recreation, and social interaction. Field observations, however, indicate that the physical condition of neighborhood green spaces varied considerably. Some areas continued to function as accessible communal spaces, whereas others experienced inadequate maintenance or changes in utilization. These differences reflect the influence of community participation, local development priorities, and the availability of institutional support.

Green open spaces provide environmental functions beyond their immediate recreational uses. The manuscript describes their roles in supporting rainwater infiltration, reducing flooding risks, moderating neighborhood temperatures, providing vegetation, and improving environmental comfort. Green corridors and intermediate open spaces were also intended to improve the visual quality of residential environments. These functions are particularly important in housing areas characterized by increasing building density and expanding infrastructure requirements. Nevertheless, the findings indicate that their ecological benefits were not consistently prioritized when communities considered alternative uses for available land.

The physical observations also reveal deficiencies in maintenance and supporting facilities. Certain green spaces contained noticeboards, security posts, and lighting facilities that were not fully maintained or effectively utilized. In one observed area, a security post had partly become a storage area following community activities, while inadequate lighting reduced the attractiveness and perceived usability of the surrounding space at night. These conditions indicate that the existence of facilities does not necessarily guarantee effective management.

Their continued usefulness depends on maintenance arrangements, community supervision, and the availability of appropriate operational resources.

Changes in the functions of neighborhood green spaces were another significant finding. The manuscript reports instances in which areas previously designated for green or communal open-space functions were used for educational, religious, and other neighborhood infrastructure. Such transformations occurred in response to perceived community requirements and the availability of land within established residential areas. Although these developments may provide immediate social benefits, they also reduce opportunities to maintain the original environmental functions of the spaces concerned. The findings therefore demonstrate a tension between improving access to community infrastructure and maintaining ecological capacity within residential neighborhoods.

The original study further suggests that stronger participation in neighborhood activities was associated with better physical maintenance in some green-space locations. Its conclusion reports that where community activity was sufficiently developed, more than 50% of the relevant green-space area could remain in good condition. This statement should be interpreted as a qualitative finding from the original investigation rather than a district-wide statistical estimate, because the manuscript does not provide a complete measurement procedure for this proportion. The finding nevertheless highlights the practical importance of organized community involvement in maintaining neighborhood environmental quality. At the same time, it reinforces the need to distinguish participation directed toward ecological maintenance from participation directed toward infrastructure development.

Table 5. Observed Patterns of Green-Space Utilization and Transformation

Observed Condition	Description	Identified Implication
Green spaces retained for communal use	Open areas support neighborhood activities and environmental functions	Maintains opportunities for recreation and social interaction
Community-supported maintenance	Residents contribute to upkeep and neighborhood improvement	Supports physical maintenance and collective responsibility
Inadequately maintained areas	Vegetation, lighting, and supporting facilities receive insufficient attention	Reduces accessibility, comfort, and environmental quality
Conversion to community infrastructure	Open areas accommodate educational, religious, or other public facilities	Creates competition between social needs and ecological functions
Unclear management authority	Residents face uncertainty regarding permitted activities and maintenance rights	Restricts effective long-term management
Limited institutional coordination	Responsibilities among residents, developers, and government are insufficiently clarified	Increases the vulnerability of designated green spaces

These findings establish that the physical transformation of green spaces cannot be explained solely through population growth or infrastructure expansion. Community

relationships influence which projects are supported, how resources are mobilized, and whether spaces continue to serve their planned functions. The same networks that coordinate environmental maintenance may also organize collective support for new buildings and communal facilities. Thus, the relationship between social capital and environmental outcomes is shaped by the purposes for which collective resources are mobilized. Preserving green spaces requires not only community participation but also clear spatial boundaries, appropriate institutional supervision, and shared recognition of long-term ecological needs.

Public Accountability and Institutional Responsibility in Green-Space Management

The preservation of neighborhood green spaces is significantly hindered by unclear management authority and fragmented responsibilities among residents, housing developers, and local government institutions. While residents often demonstrate a strong willingness to maintain these areas, their efforts are constrained by ambiguous ownership and land-use regulations, particularly in zones where public facilities overlap with planned green spaces. For instance, in the eastern section of RW VII, Lesanpuro, the overlapping presence of schools (TK Muslimat NU, SDN Lesanpuro IV) and residential communities created a practical dilemma: residents could witness environmental deterioration but lacked the formal authority to intervene or establish long-term preservation arrangements. This imbalance is further exacerbated by insufficient coordination from developers and municipal authorities. Consequently, while communities can contribute labor and resources, they remain excluded from formal decision-making, leading to inconsistent maintenance compared to formally managed municipal spaces like road medians.

These institutional challenges in Sawojajar reflect broader patterns in recent Indonesian research, where effective participatory management in locations like Bekasi (Safitri & Kholid, 2025), Medan (Hutauruk et al., 2025), and Mojosongo (Fajri & Pradoto, 2023) similarly hinges on clear institutional coordination and formal authorization. Ultimately, the findings indicate that sustainable green-space management cannot rely on community social capital—such as trust, shared norms, and proactive participation—alone. These collective resources must be anchored by clear spatial planning and institutional accountability. When management responsibilities remain ambiguous, well-intentioned community initiatives may fail to meet ecological preservation objectives. Therefore, reconciling everyday social needs with urban green space preservation requires governance frameworks that formally empower community participation with clear decision-making authority.

Discussion

The findings demonstrate that social capital plays a significant role in shaping community participation and the utilization of urban green open spaces in Perumnas Sawojajar, Malang City. Social networks, interpersonal trust, reciprocity, shared norms, and proactive participation facilitate collective action among residents from diverse socioeconomic backgrounds. These findings support Coleman (1988) and Putnam (2000) perspectives that social capital strengthens cooperation and enables communities to achieve shared objectives. Similarly, Subangkit et al. (2019) identified social networks, trust, and norms as important elements supporting urban farming initiatives in Jakarta, while Situmorang (2023) demonstrated that social capital influences participation in community-based environmental management. These similarities suggest that established community relationships constitute essential social resources for maintaining neighborhood environments and organizing collective activities.

The physical transformation of green open spaces in Perumnas Sawojajar reveals that community participation does not necessarily guarantee environmental preservation. Although residents actively participate in neighborhood activities, some designated green spaces have been converted into educational, religious, and other communal facilities. This finding differs from studies emphasizing the positive contribution of community involvement to environmental conservation, such as Hutauruk et al. (2025) and Wibowo et al. (2021). However, Fajri & Pradoto (2023) similarly identified tensions between community initiatives and formal land-use regulations in neighborhood parks in Surakarta. These differences indicate that the environmental outcomes of social capital depend on community priorities, spatial planning arrangements, and the institutional mechanisms governing collective decisions.

A particularly important contribution of this study is the identification of the dual role of social capital in urban green-space management. Strong community networks can encourage environmental maintenance while simultaneously facilitating collective decisions that prioritize immediate social infrastructure needs over ecological preservation. This finding extends the conventional interpretation of social capital as an exclusively positive resource for environmental sustainability. Chávez-Páez et al. (2025) similarly identified contradictory consequences of social capital in mangrove conservation, demonstrating that strong social relationships may also create exclusionary practices. Therefore, the novelty of the present study lies in explaining how community cohesion can produce competing environmental and social outcomes within established urban residential neighborhoods.

The findings also highlight institutional accountability as a determining factor in the effectiveness of community-based green-space management. Unclear responsibilities among residents, housing developers, and local government institutions have contributed to inadequate maintenance and uncertainty regarding the protection of designated green spaces. These findings are consistent with Safitri & Kholid (2025), who emphasized institutional coordination and participatory governance in urban green-space management in Bekasi. Likewise, De Jesus et al. (2023) identified institutional gaps that limited the influence of community social capital on environmental governance, while Hainsch et al. (2022) highlighted the importance of transparent communication in green-land conversion policies. These comparisons indicate that community participation requires clear legal authority, institutional collaboration, and transparent decision-making to support sustainable environmental outcomes.

The findings have important theoretical and practical implications for sustainable urban governance. Theoretically, they demonstrate that social capital should be understood as a context-dependent mechanism whose consequences are shaped by collective interests, institutional arrangements, and competing land-use priorities. Practically, municipal authorities and housing developers should strengthen participatory spatial planning, clarify green-space management responsibilities, and establish community-based monitoring mechanisms. Neighborhood organizations should also integrate environmental preservation objectives into their collective activities to balance ecological sustainability with residents' social needs. Nevertheless, because this study employed a qualitative case-study approach in Perumnas Sawojajar, its findings should be interpreted within the local context, while future comparative studies could examine whether similar patterns occur in other Indonesian residential communities.

CONCLUSION

This study concludes that social capital plays a significant role in shaping community participation and the utilization of urban green open spaces in Perumnas Sawojajar, Malang City, Indonesia. Social networks, interpersonal trust, reciprocity, shared norms, and proactive participation strengthen collective action and encourage residents to contribute to neighborhood environmental management. However, the findings reveal that strong social capital does not necessarily guarantee ecological sustainability, as collective decisions may also facilitate the conversion of green spaces into educational, religious, and other community facilities. Unclear institutional responsibilities and limited coordination among residents, housing developers, and local government institutions further contribute to challenges in green-space preservation. The principal contribution of this study lies in identifying the dual role of social capital as both a mechanism for environmental stewardship and a potential driver of spatial transformation, thereby extending the understanding of community participation in sustainable urban governance.

Based on these findings, sustainable green-space management requires stronger collaboration among local governments, housing developers, community organizations, and residents. Municipal authorities should establish clear regulations concerning green-space ownership, maintenance responsibilities, and land-use protection while promoting transparent and participatory decision-making. Community organizations should integrate environmental awareness, collective monitoring, and regular maintenance activities into their existing social networks to balance ecological preservation with community development needs. Furthermore, institutional coordination should be strengthened through community-based management programs that encourage shared responsibility and long-term environmental accountability. Future research should employ comparative studies across different residential areas and integrate spatial analysis with qualitative approaches to examine how social capital influences green-space preservation and transformation under varying socioeconomic and institutional conditions.

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