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Strengthening Social Capital in Forest Area Management to Support the Forest Cities of the Nusantara Capital City

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Abstract: The Nusantara Capital City (IKN) in Indonesia has undergone rapid urbanization which threatens sustainable forest management and the well-being of the indigenous community, leading to conflicts over land rights and resources. This study explored trust, norms, social networks, proactive action, and care between indigenous and migrant forest communities in IKN to support collaborative governance. It contributed to forest governance research by applying social capital theory to a protected urban area under state-led development. The research explained differences in household participation and offered a framework connecting bonding and bridging ties to co-management. Surveys based on the Social Capital Assessment Tool (SCAT) and the Social Capital Integrated Questionnaire (SC-IQ) were conducted with 90 households (45 indigenous and 45 migrant) across six villages in Penajam Paser Utara and Kutai Kartanegara districts from March to September 2024. Spearman's rank tests was employed to analyze relationships between traits and social capital. The analysis results indicated that both communities possessed strong social capital, particularly trust in leaders (scores 3.49–3.56) and norms (scores 3.53), yet demonstrated moderate trust in government and environmental commitment. Migrants generally have higher education, income, land ownership, and bridging social capital, whereas indigenous groups maintain strong bonding capital rooted in tradition and legitimacy of local leaders. Traits significantly correlated with social capital (indigenous: $r = 0.756$, $p < 0.001$; migrants: $r = 0.823$, $p < 0.001$). Overall speaking, effective forest city development depended on government policies, local leadership, environmental awareness, transparency, and acknowledgment of customary governance, as these elements could foster community-based forest management and equitable urban development in tropical forest areas.

Keywords: Social capital; Local community; Forestry; Sustainable forest management; Collaborative forest governance

1 Introduction

Social capital refers to the values or norms of the community in managing forest areas cooperatively to meet sustainable needs. Social capital is an important factor in building more advanced forest management [1]; it plays an important role in sustainable forest resource management. Social capital includes elements such as mutual trust, social networks, and institutions that contain values, norms, and rules that support cooperation in society [2]. Strong kinship relations enable solidarity and collective action in forest management. Meanwhile, institutions provide a framework of formal and informal rules governing access, utilization, and distribution of benefits from forest resources [3]. The combination of social and institutional capital creates effective governance and promotes ecosystem sustainability and community empowerment, especially in rural economic development [4]. Social capital enables collective action that significantly impacts the improvement of social welfare [5]. It can be considered by the government in supporting development programmes by increasing community participation and strengthening government accountability [3]. Effective implementation of social capital can empower communities and contribute to the success of sustainable

natural resource management [6]. The level of social capital in community-based forest management is influenced by community participation and local institutions [7].

The social capital of forest communities is an important foundation for forest management, especially for resolving conflicts of resource utilization arising from, both vertical conflicts between communities and the government and horizontal conflicts between community groups. These conflicts are often triggered by the growing economic needs of communities that depend on forest products, especially when access to markets becomes more accessible [8]. Such conflicts can threaten forest sustainability and exacerbate social inequality if not managed properly. A similar situation is also evident in the development of the Nusantara Capital City (IKN), which began with the passing of Law No. 3 of 2022 in the National Capital City on 18 January 2022 and was updated with Law No. 21 of 2023 [9, 10]. This development has had a significant impact on the social and ecological landscape of the area, which requires special attention in its management.

Urbanization and changes in land use are exerting enormous pressure on forest areas, leading to overlapping claims among indigenous people, the government, and the private sector [11]. This situation is compounded by an inadequate legal framework for the protection of indigenous rights, resulting in overlapping land claims and fostering a volatile environment conducive to conflicts, a risk underscored in recent analyses of IKN's development [12]. On the other hand, the interactions of people and forests are increasing as their economic needs evolve, shifting from subsistence to include cash needs [13–15]. This condition triggers intensified utilization of marketable forest resources, thereby putting pressure on forest ecosystems [8]. This pressure is exacerbated by the high poverty rate in the Penajam Paser Utara (PPU) and Kutai Kartanara (Kukar) districts, the two main areas where IKN is located. An average of 6.54% poverty rate in these places exceeds the East Kalimantan Province [16].

The IKN region is a strategic location to examine how social and institutional capital can support sustainable forest management. This area is not only ecologically important but also the centre of complex social interactions. Challenges arising from the development of IKN, such as utilization conflicts and social change, must be addressed immediately so that the concept of an inclusive Forest City and Smart City can be realized. This research is expected to provide in-depth insights into the social and institutional conditions of local communities and become the basis for more adaptive and inclusive policy making [17]. Forest management in IKN is not only related to environmental sustainability but also to the welfare of local communities which rely heavily on forest areas as a source of livelihood [14]. Conflicts over access to and utilization of forest areas, arising as a result of development, need to be resolved as early as possible for the successful management of IKN as an inclusive Forest City and Smart City [17]. This study is important to understand the characteristics and social capital of local communities so that it can provide evidence-based input to the government in formulating realistic and practical policies.

This article made three main contributions. First, it examined collaborative forest governance in a protected urban area undergoing rapid and state-led development (IKN), a context rarely studied compared to rural or fully conserved settings. Second, it combined social capital theory with local institutional research to explain differences in family participation and rule compliance between indigenous and migrant groups. Third, it offered a transferable conceptual framework and mixed-method evidence linking bonding and bridging social ties, as well as rule alignment, to specific co-management activities, such as monitoring, restoration, permitting, and dispute resolution at the urban-forest boundary. Together, these insights clarified factors influencing the effectiveness or stagnation of collaborative efforts amid swift urban growth.

This study specifically explored the strengthening of social capital in support of forest area management, particularly the development of forest towns in IKN. The research also analyzed the characteristics and social capital of local communities, including social relationships, cooperation networks, and community norms and concerns that play a role in forest management. The integrative approach combined social capital analysis to comprehensively understand the dynamics of forest area management. The findings of this research are expected to provide strategic recommendations to the Central Government, Local Governments, and other stakeholders in formulating relevant and sustainable policies, which not only improve the effectiveness of forest area management but also strengthen community participation in supporting the development of IKN forest cities.

2 Methodology

The research was conducted from March to September 2024 in IKN, focusing on six villages/subdistricts in North Penajam Paser Regency: Subdistricts Sepaku, Bumi Harapan Village, Subdistricts Mentawir, and Wonosari Village, as well as Bukit Merdeka Subdistrict and Batuah Village in Kutai Kertanegara Regency. Site selection was purposive based on conservation potential, environmental vulnerability, and community participation in government programmes [18]. This study involved a total of 112 participants, including 90 household respondents selected through random sampling, evenly distributed across six villages with 15 respondents per village. The villages included indigenous communities like Sepaku, Mentawir, and Bukit Merdeka with 45 household respondents and migrant communities such as Bumi Harapan, Wonosari, and Batuah with 45 household respondents. Additionally, in-depth interviews were conducted with key informants such as government officials, Forest Management Units (FMUs),

IKN authorities, village and customary leaders, NGOs, and farmer groups to provide a context for survey data. This location was chosen due to its ethnic diversity and proximity to the Central Development Core Area (KIPP), the IKN Area (KIKN), and the IKN Development Area (KP-IKN), which are relevant to the concept of Forest City. The study's location, with six selected villages and sub-districts within these administrative zones, is shown in Figure 1.

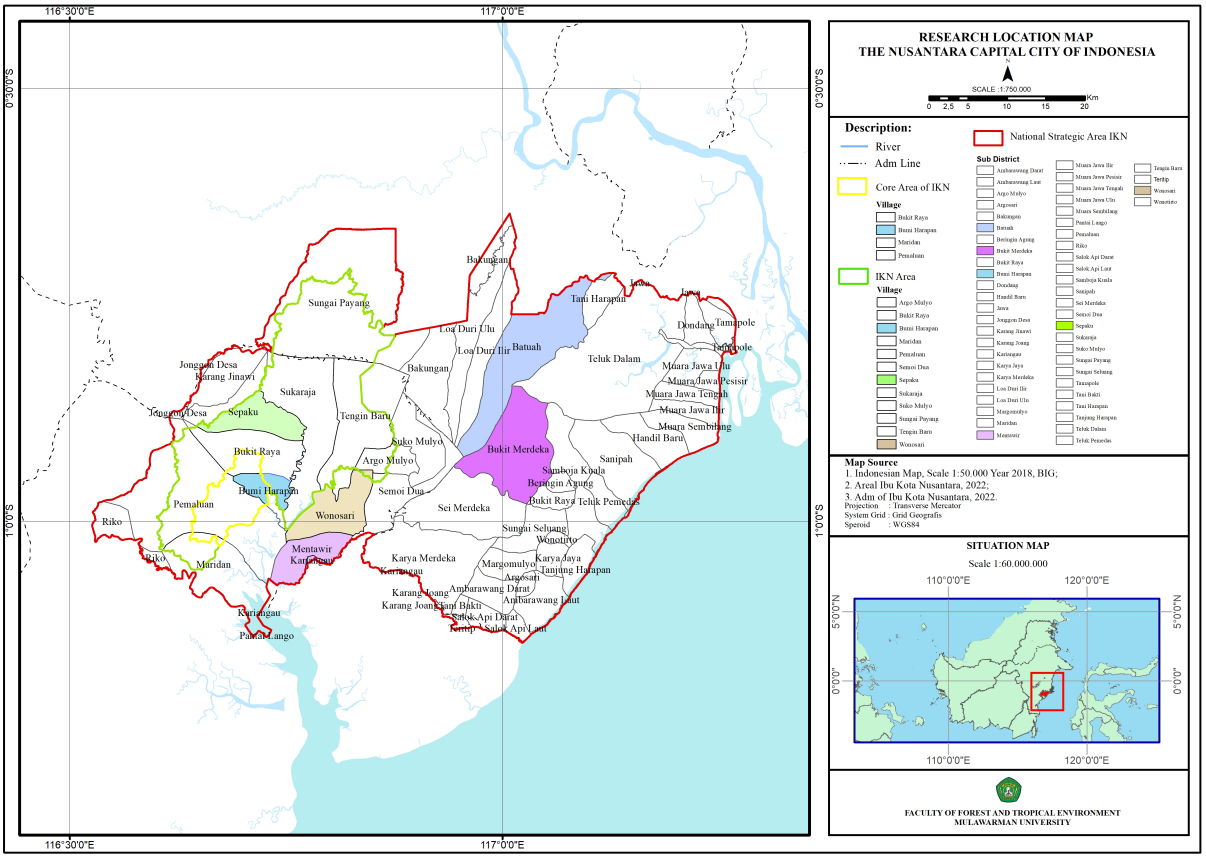

Figure 1. Map of the research area

The types of data used include primary and secondary data. Primary data was collected through field observations, semi-structured questionnaires, and in-depth interviews with respondents. The questionnaire was adapted from the Social Capital Assessment Tool (SCAT) [19] and the Social Capital Integrated Questionnaire (SC-IQ) [20], covering aspects of social capital and individual characteristics. Secondary data was obtained from literature review and relevant institutions, to provide general information about the research sites.

The qualitative research method in this study was a survey. The variables analyzed included the socioeconomic characteristics of the community and elements of social capital, such as networks, values, norms, trust, proactive action, and care [2, 21, 22]. Social capital was measured using a scale that divided it into four categories: minimum, low, medium, and high [23]. The questionnaire was tested for validity and reliability before use, with the Spearman's rank correlation test to analyze the relationship between variables.

The operational variables included community characteristics such as age, formal and non-formal education, income, health level, cultivated land area, length of stay, and social status. Each variable was categorized on an ordinal scale, with scores of 1 (low), 2 (medium), and 3 (high). Social capital was measured in five aspects: trust, norms, social networks, proactive action, and caring, each scored from 1 (minimum) to 4 (high). The research hypothesis stated that individual characteristics had a positive and significant effect on social capital, and social capital had a positive effect on forest management in IKN. This analysis aimed to understand the role of social capital in supporting sustainable natural resource management and provided inclusive and transparent policy recommendations to increase community participation in sustainable development.

The research conceptual framework, shown in Figure 2, outlines the mixed-method design of this study, including purposive site selection, stratified sampling of 90 households (45 indigenous and 45 migrant), and data collection through adapted SCAT and SC-IQ instruments, which culminates in analysis and the derivation of policy implications.

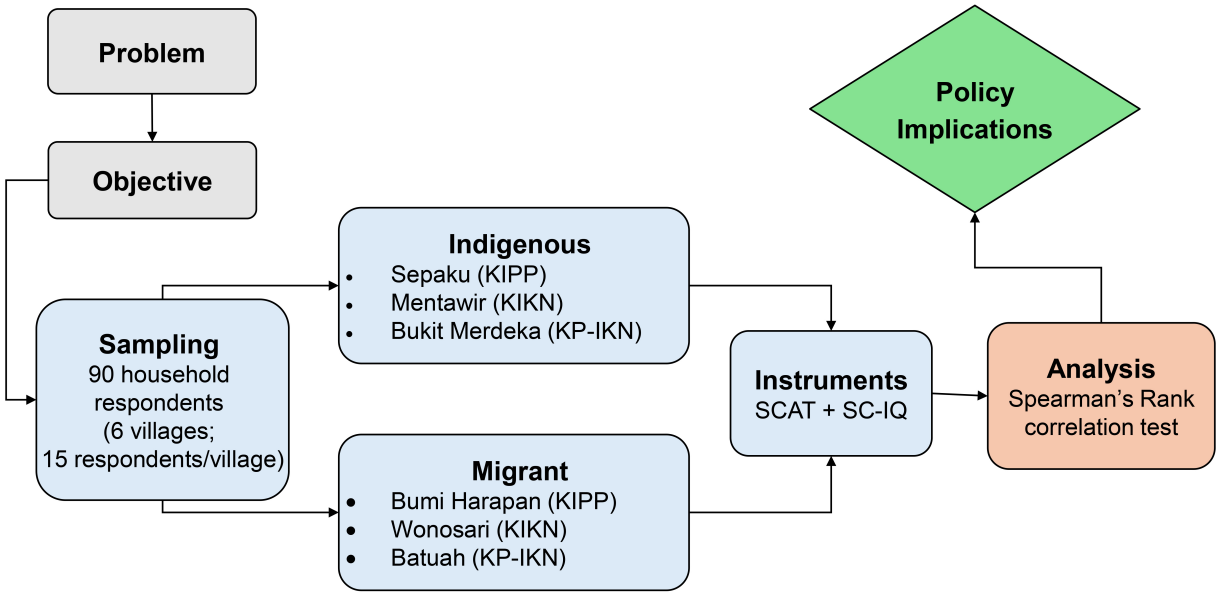

Figure 2. Research framework

3 Results and Discussions

3.1 Individual Characteristics

The results showed that community characteristics such as education (formal and non-formal), income, health, cultivated land, length of residence, and social status interacted to strengthen or weaken social capital in a community. These factors play an important role in strengthening social networks, increasing trust between individuals, and building strong social solidarity. Conversely, inequalities in education, income, and social status could hinder the strengthening of social capital and create tensions within the community. Therefore, to increase social capital, it is important to emphasize factors influencing social participation, economic empowerment, and well-being. A summary of the individual characteristics at the research sites, comparing indigenous and migrant communities based on eight socioeconomic variables, is provided in Table 1, which includes cumulative scores and category classifications.

Table 1. Comparative analysis of individual characteristics between indigenous and migrant communities based on socioeconomic variables

No.	Variables	Indigenous Community			Migrant Communities		
		Total Answer Scores	Cumulative Scores	Category	Total Answer Scores	Cumulative Scores	Category
1	Age	25	0.42	Low	33	0.55	Low
2	Formal education	60	1.00	High	90	1.50	High
3	Non-educated	60	1.00	High	81	1.35	High
4	Income level	108	1.80	High	123	2.05	High
5	Health level	102	1.70	High	111	1.85	High
6	Area of cultivated land	40	0.67	Medium	87	1.45	High
7	Length of stay	75	1.25	High	66	1.10	High
8	Social status	40	0.67	Medium	87	1.45	High

Based on the analysis of data, there were significant differences between the indigenous and migrant communities in various social and economic aspects. The age factor showed that both groups were in the category (38–56 years), which favored active participation in social networks, collective activities, and community decision-making. Age greatly influenced a person's ability to produce goods and services as ability was related to physical condition, way of thinking, and competence to work [24]. Older age groups ($>$ 56 years) contributed with their experience and traditions, which were important for preserving community values. However, the relatively small number of younger age groups ($<$ 38 years) might limit the regeneration of social groups and weaken the sustainability of social capital in the future.

Formal education was an important factor showing that both indigenous and migrant communities were in the high category, with migrant communities scoring higher than indigenous communities. The high level of education among migrants allowed them to be more active in understanding social norms and contributing to community development. Non-formal education demonstrated a similar trend, with the cumulative scores of both indigenous and migrant communities being high, thus reflecting the openness of migrant communities to lifelong learning and the improvement of social skills. The high level of non-formal education in the community could be attributed to participation in activities outside the community. People with low levels of education tended to be reluctant to participate in training or courses because they lacked confidence and focused more on work. Only those with higher education and diverse neighborhoods were willing to participate. According to research on the effects of urbanization on social capital [25], non-formal education could improve creativity, skills to build relationship, and professionalism, thus reducing poverty in rural areas.

The income levels of both indigenous and migrant communities were considered high. Higher incomes among migrants reflected prosperity that allowed greater contributions in social activities such as gotong royong and community assistance. However, this income disparity had the potential to trigger social tensions and unequal contributions in collective activities [21, 24].

The level of community income in the moderate category was influenced by the type of livelihood in the community as most are farmers and agricultural laborers. According to research on income inequality [24], for most people classified as farmers, the results obtained tended to fulfill their daily needs only. The income of respondents derived from agricultural products was uncertain, as it was strongly influenced by factors related to weather and market (supply and demand for goods).

Both groups showed a high level of health. Good health supported active participation in community-based activities and strengthened social relationships [26]. However, an increase in the frequency of sickness in the future might reduce participation in social activities and weaken social capital, thus highlighting the necessity for health infrastructure in this region.

The size of cultivated land showed a significant difference, with indigenous people in the medium category and migrants in the high category. Based on the interviews with transmigrants and native respondents, the success achieved by transmigrants was not easy as it was obtained through a tough struggle. Migrants/transmigrants were known to be so tenacious and diligent in farming that they are now quite successful. Transmigrants dominate land/land tenure because of the lifestyle of the natives. For example, when the natives hold an event, they need funds, so they often sell land/lands to transmigrants. Larger land holdings in migrant communities allow greater contributions in agriculture-based social activities and community economies [27]. Conversely, limitations of land among indigenous people may hinder their material contributions to the community [28].

The length of residence affected the indigenous community with a cumulative score of 1.25, and the migrant community had a score of 1.10; both of which were in the high category. This reflected the high social attachment and deep understanding of local norms in both groups although the indigenous community had a slight edge in terms of social stability, trust built among the community, and deep understanding of local norms [29].

Social status was also an important factor exhibiting significant differences between the two groups. The indigenous people scored in the medium category, while the migrants scored in the high category. This suggested that migrant communities had stronger and more cohesive social networks, which might accelerate their adaptation and integration in the local community [30]. Conversely, the lower social standing of the indigenous community resulted in their marginalization, which reduced their ability to contribute to social capital [31]. This confirmed that large-scale development projects, if not properly safeguarded, frequently marginalized the indigenous community, thus harming their social structures and ways of living [32].

Overall, migrants demonstrated superiority in various social and economic aspects, including education, income, health, cultivated land area, and social status. This was consistent with the findings of Utomo and Hutauruk [33]. The local community in IKN, still maintaining traditional subsistence lifestyles, must deal with migrants who have advantages in capital and technology. These migrants ultimately have the potential to dominate the utilization of available natural resources. In this situation, the process of social transformation faces significant structural challenges, so efforts to address it need to be carried out systematically, thoroughly, and sustainably.

This dynamic reflected broader trends in Indonesia, where urban and rural areas exhibited distinct forms of social capital. Okviyanto and Syafitri [34] and Prastyo et al. [22] distinguished between the strong bonding of social capital commonly found in cohesive rural areas and the bridging social capital crucial for operating within diverse urban settings. The development of IKN exemplified the merging of these two types, in which migrant communities might be better positioned to create the bridging capital needed for adaptation to economic growth.

3.2 Trust

The research findings indicated a high level of trust in community leaders and customary rules, thus highlighting the strong role of local leadership and customary values in maintaining social capital. Meanwhile, trust in government

agencies, outsiders/companies, and community institutions remained moderate, suggesting room for improving relationships and transparency with formal institutions. Migrant communities tended to have slightly more trust in agencies and outsiders than native communities, but both showed similarities in valuing customary rules and local leadership. Through trust, individuals can co-operate more effectively and reduce uncertainty in social interactions, which in turn creates solid and enduring support [35]. The categories of farmers' trust in forest management in IKN are presented in Table 2. Scores are based on a 4-point scale, highlighting a significant reliance on community leaders and customary rules over formal government institutions.

Table 2. Comparative analysis of trust in forest management between indigenous and migrant communities in IKN

No.	Elements and Sub-Elements of Trust	Indigenous Community			Migrant Communities		
		Total Answer Scores	Cumulative Scores	Category	Total Answer Scores	Cumulative Scores	Category
1	Trust in relevant agencies such as the Central Government/ OIKN/UPT, Local Government, Provincial Forestry Service, and FMUs	117	2.60	Medium	129	2.87	Medium
2	Trust in outsiders/companies involved in forest management	128	2.78	Medium	144	2.88	Medium
3	Trust in the management of community institutions/farmer groups/cooperatives	138	3.07	Medium	137	3.04	Medium
4	Trust in community leaders	157	3.49	High	160	3.56	High
5	Belief in customary rules and regulations related to forest management	159	3.53	High	159	3.53	High

The results showed a distinct hierarchy of trust among local communities. Both indigenous and migrant groups trusted customary rules the most with a combined score of 3.53, and they also highly trusted community leaders (scoring 3.49 and 3.56, respectively). This highlighted the lasting importance of traditional governance structures in forest management. The strong internal trust aligned with research by Roslinda [3], who found that intra-ethnic social capital, built on shared values and culture, remained robust. In contrast, there was a notable lack of trust in formal state institutions, as government agencies had the lowest scores among all elements (2.60 and 2.87). This gap suggested a disconnection between state policies and community realities, possibly stemming from past negative experiences or poor communication, a phenomenon observed by Puspita et al. [36] in other forest management areas. For policies to succeed in IKN, they need to be communicated through and endorsed by local leaders and customary norms, instead of being enforced from the top down.

While trust in the management of community institutions like farmer groups or cooperatives was moderate, the level of trust in government agencies, both central and local, tended to be lower. This indicated a tension or lack of trust between the community and the government concerning forest management, which might be caused by communication problems or dissatisfaction with previously implemented policies. The results of this study were in line with the findings of Puspita et al. [36], who also observed low levels of trust towards outsiders, including the government and companies, in several other forest management areas. This suggested that forest management involving local communities was often more successful if it took into account and involved local leaders and customary norms in every decision made. Greater involvement on the part of government in improving relations with communities, as well as respect for customary rules, could strengthen trust and collaboration between communities and various actors.

3.3 Norms

Building upon this foundation of trust or its absence is the community norm that regulates social conduct. While trust influences the relationship with external entities, norms establish the internal rules of conduct. The research findings indicated a high level of compliance with customary norms, social norms, and group agreements, thus reflecting the strength of local values in maintaining social harmony. Indigenous communities tend to be more compliant with beliefs/religious and politeness norms, while migrant communities are slightly more compliant with group rules. However, compliance with government regulations related to forest and natural resource management remains at a moderate level in both communities, suggesting potential for improvement in aligning formal regulations with the needs of local communities. With norms in place, communities could maintain order and harmony, and avoid

behaviors that could undermine social stability [2]. Sanctions associated with norm violations, both social and legal, help to enforce rules and support the continuity of social relations in the community. The categories of respondents' level of social norms in forest management in IKN can be seen in Table 3. The data indicated high compliance with informal customary and group norms, but significantly lower compliance with formal government regulations.

Table 3. Community adherence to social norms in forest management, comparing indigenous and migrant groups

No.	Elements and Sub-Elements of Norms	Indigenous Community			Migrant Communities		
		Total Answer Scores	Cumulative Scores	Category	Total Answer Scores	Cumulative Scores	Category
1	Adherence to customary/social norms in the community	169	3.60	High	164	3.64	High
2	Adherence to beliefs/religion	156	3.47	High	146	3.24	High
3	Adherence to existing norms of decency/humility	154	3.42	High	150	3.33	High
4	Compliance with regulations related to forest/natural resource management was agreed upon in the group	154	3.42	High	156	3.47	High
5	Compliance with government regulations related to forest/resource management	121	2.69	Medium	120	2.67	Medium

Table 3 shows that some respondents' social norms are quite high, namely adherence to unwritten rules in the form of customary/social norms in the community, and adherence to rules related to forest/resource management agreed by the group, while adherence to government regulations related to forest management is low. Respondents did not want to obey these regulations because the could not comprehend the rules, especially written ones. This was affected by the lack of assistance from forestry extension officers from Unit Pelaksana Teknis (UPT) and Kesatuan Pengelolaan Hutan (KPH) as they had to provide counselling and socialization of the latest applicable regulations.

The results in the current study, indicating a rather high compliance with social norms such as customary norms, religion, and morality in IKN communities, supported findings from other research on the importance of social norms in natural resource management. Most communities adhere to customary norms and group agreements related to forest management, religious rules, and rules of decency/customs, suggesting that these norms have a significant role in shaping community behaviour. These results aligned with findings that indigenous communities are often more compliant with customary laws and local social norms governing natural resource management. Their compliance arises from close social relationships and a strong understanding of the long-term benefits of forest sustainability for survival [37, 38]. However, low compliance with government regulations is indicated by a lack of understanding of written regulations and minimal counselling conducted by relevant agencies [39]. Therefore, it is important to enhance counselling on government regulations and strengthen the role of social norms in community-based forest management, so that forest management in IKN becomes more sustainable.

3.4 Social Networking

Beyond the implicit rules of norms, social networks constitute the tangible framework through which communities operate could collaborate. These networks are conduits for the trust and reciprocity previously discussed. Results of the field study showed that one of the social capital elements is a strong social network with a high tendency to cooperate with external parties, or between group members and community leaders. Migrant communities appear to be more open in establishing external and inter-group cooperation, while indigenous communities excel in collaboration with community leaders. However, participation in group activities remained moderate in both communities, suggesting there is room to improve active involvement in social organisations. This was in line with the opinion of Djojosoekarto et al. [40], who stated that the ability to interact with people from different backgrounds, appreciate differences, and utilize them could provide benefits for all parties. Creativity and synergy could be created in networks or groups. The number of networks offered more options for accessing assistance, it would be easier to seek help when facing difficulties. The categories of farmers' networks in forest management in IKN can be seen in Table 4. Both communities showed more willingness to collaborate, particularly with community leaders, but exhibited moderate levels of active participation in formal group activities.

Table 4 shows that respondents in IKN have a high level of networking skills. This can be seen from their openness in establishing cooperation with community leaders or outside parties and the strength of institutional ties, such as

gathering community members involved in forest management. This data showed that the level of cooperation among farmers in building networks was fairly good. The ability of the community to create synergistic relationships had a significant influence on the formation of social capital. For example, there was a strong willingness to cooperate with companies or outside parties and openness in collaboration between individuals, although the level of group activities remained low.

Table 4. Assessment of social networking levels for forest management in IKN

No.	Elements and Sub-elements of Social Networking	Indigenous Community			Migrant Communities		
		Total Answer Scores	Cumulative Scores	Category	Total Answer Scores	Cumulative Scores	Category
1	Ties/willingness to establish cooperation with companies/other external parties for forest development	140	3.11	High	158	3.51	High
2	Strong institutional ties, such as uniting community members involved in forest management	154	3.42	High	155	3.44	High
3	Openness in establishing cooperation between fellow group members	143	3.18	High	157	3.49	High
4	Openness in collaborating with community leaders/community outreach	163	3.62	High	158	3.51	High
5	Activeness in participating in group/institution/cooperative activities	128	2.84	Medium	126	2.80	Medium

This finding supported the view of Febryano et al. [7], who stated that the level of social capital in sustainable community-based forest management was impacted by community participation and local institutions. Social networks are integral in shaping participation, fostering cooperation, and facilitating resource exchange among members. They are essential for sustaining synergy and cohesion [41]. Social networks can help individuals or groups achieve their goals efficiently and effectively [42]. These networks cannot be built by one individual alone but tend to grow in groups through social interaction as part of collective values.

Social capital is now seen as an important element in global economic development. Research related to rural development, as revealed by Haridison [43], showed that social networks could enhance development, including the establishment of physical infrastructure and the application of appropriate technology. However, Pertikasari et al. [44] cautioned that social capital in community or institutional networks was often not optimally utilized. In the villages of the present study, community social networks appear to be quite robust through cooperation, institutional ties such as cooperatives, and inter-institutional communication. Even so, there are still weaknesses, such as low community activeness in institutions and openness to institutional activities, yet can be overcome by continuous institutional development and coaching from stakeholders.

3.5 Proactive Action

According to the Big Dictionary of Indonesian Language (KBBI), proactivity is defined as more active action. In other words, proactivity reflects the attitude of individuals who take full responsibility for every decision in their lives.

Strong networks establish the foundation for collaboration, but it is proactive efforts that unlock this potential. This dimension indicates the willingness of community members not just to participate but to take initiative and lead. Proactive action driven by internal motivation encourages involvement in groups and social relationships. According to the results in this study, high proactivity in sharing knowledge, ensuring security, and resolving conflicts demonstrated a robust spirit of collaboration and solidarity. Migrant communities tended to be slightly more active in sharing information and maintaining security, whereas the indigenous community exhibited strong engagement in conflict resolution. Nonetheless, interest in environmental cleanup and co-development remained moderate in both groups, thus highlighting opportunities to boost awareness and participation in environmental and social initiatives. Categories of respondents' proactive action levels in forest management in IKN can be seen in Table 5.

The desire to share information, experience, and knowledge related to forest management, maintain mutual security, and resolve problems or conflicts actively are the three sub-factors scored with the highest percentages. Meanwhile,

the desire to clean the environment and participation in development for the common good were categorized as medium. This could be understood because the rural communities in this study were still maintaining the spirit of gotong royong in social activities. These values were often lost in more heterogeneous urban communities. This aligned with the findings of Judijanto and Hildawati [26] and Lenggono [45], which stated that proactive action was part of social capital, thus reflecting the willingness of citizens as the crucial factor facilitating development. Individual initiatives that evolve into group initiatives demonstrated the true nature of community proactivity.

Table 5. Categories of proactive action levels in forest management from respondents in IKN

No.	Elements and Sub-elements of Proactive Action	Indigenous Community			Migrant Communities		
		Total Answer Scores	Cumulative Scores	Category	Total Answer Scores	Cumulative Scores	Category
1	Desire to share information, experience, and knowledge with others related to forest management	156	3.47	High	162	3.60	High
2	Desire to maintain mutual security	152	3.53	High	162	3.60	High
3	Desire to clean up the environment and neighbourhood	119	2.64	Medium	120	2.67	Medium
4	Supporting the development for the common good	132	2.87	Medium	144	3.00	Medium
5	Activeness in resolving problems or conflicts	155	3.44	High	157	3.49	High

The proactive actions shown by respondents reflected their concern for the environment, social responsibility, and a deep understanding of the importance of forest ecosystems. Respondents did not just wait for the direction from outsiders but also took the initiative in preserving and managing forests. Therefore, cooperative institutions and the government need to focus on community values to support sustainable forest development programmes. Strong social capital was proven to encourage active participation in natural resource management, as recent research highlighted its importance in local business sustainability and environmental management [46, 47].

In the locations of research, conflicts that arose in the transmigration programme were generally related to social jealousy; transmigrant communities tended to receive more assistance to resolve this problem than local residents. Socially, the programme creates inequality between transmigrant villages and the indigenous population, both in terms of infrastructure and economic welfare. This injustice occurs because the government tends to give more priority to transmigrants than to the local population. As a result, there is social and economic disparity, in which transmigrant communities are often more advanced in various aspects. This has led to social disintegration, especially when transmigration villages develop more rapidly than the original settlements in land ownership and land certification. Transmigration villages enjoy better infrastructure, while the local population has often neglected in complex land tenure. This finding was in line with researches from Widodo [27] and Palupi et al. [48] on conflicts in the implementation of transmigration in the era of regional autonomy. The research identified two main problems, namely: (1) social issues, such as disputes between residents, and (2) economic issues, such as land disputes, disputes over natural resource management, and labour conflicts.

3.6 Care

Based on the research findings, there was a high level of concern for fellow community members, forest management, and institutional development, thus reflecting a collective awareness of the importance of social relations and resource management. Migrant communities were slightly ahead in social and environmental aspects, perhaps as part of their adaptation efforts. However, concern for environmental cleanliness and participation in gotong royong were moderate in both communities, suggesting an imperative for enhanced awareness and involvement in maintaining the surrounding environment. Caring is considered a valued trait across cultures and communities, as it plays a role in building mutual trust, solidarity, and shared responsibility [49]. The findings in this study revealed that the distribution of respondents' caring ranged from moderate to high categories, with the majority of respondents in the high category (Table 6).

The results suggested that the three sub-elements of concern with high percentages were concern for fellow residents or members, forest management, and community institutional development. This showed that the community had a strong commitment to social cooperation, environmental sustainability, and local institutional development.

Previous research by Jennings [50] explained that care involved sensitivity to the difficulties experienced by others as well as awareness of changes in the physical and social environment. This kind of care-based social capital allows communities to remain responsive in the face of various challenges, including environmental damage and other social problems. The care shown by rural communities reflects local wisdom, which is an important capital in the development of IKN.

Furthermore, concern for the environment and forest management requires institutional support and government programs that take into account community aspirations. Strong social capital can accelerate community involvement, especially in mutual aid activities, environmental conservation, and sustainable forest management [47]. Various rehabilitation activities, such as environmental reforestation, tree planting, and the construction of soil and water conservation structures, often enter the village. These activities are carried out even though the motivation is primarily economic, yet they have a positive impact on ecology. The majority of villagers are willing to participate with money and labor in spring protection activities. However, not all residents always attend environmental meetings, as these are rarely organized for the whole community. Meetings usually only involve certain people. Residents are willing to plant deforested land without compensation, but some residents object to being prohibited from cutting down trees on sloping land or riverbanks. This objection is related to the fulfilment of subsistence needs. Some residents expressed the need for clear incentives from the government instead of trees that cannot be cut down.

Table 6. Categories of respondents' levels of concern for forest management in IKN

No.	Elements and Sub-elements of Caring	Indigenous Community			Migrant Communities		
		Total Answer Scores	Cumulative Scores	Category	Total Answer Scores	Cumulative Scores	Category
1	Caring for fellow citizens or members	158	3.51	High	162	3.60	High
2	Concern for environmental cleanliness	119	2.64	Medium	123	2.73	Medium
3	Caring for the neighbourhood, such as gotong royong and others	172	2.92	Medium	170	2.98	Medium
4	Concern for forest management	147	3.34	High	157	3.49	High
5	Concern for community/ institutional development	159	3.53	High	159	3.53	High

However, in some aspects, such as low awareness of environmental cleanliness and gotong royong, it can be attributed to the phenomenon of massive urbanization in the IKN. Urbanization often brings significant changes to the social and cultural structure of communities, including the diminishing of traditional solidarity that previously characterized rural communities. According to research, urbanization often leads to the emergence of a more heterogeneous society with an individualistic orientation, where attention to the surrounding environment and social relations tends to decrease [51]. This is because the pattern of life in urban areas tends to be busier, more focused on work, and leaves less time for social activities such as gotong royong or collectively keeping the environment clean.

This phenomenon is also reinforced by high population mobility due to urbanization. As rural communities migrate to urban areas, including the development of IKN region, traditional values such as environmental stewardship and cooperation are often displaced by economic pressures and new lifestyles [52]. As a result, care for the community and neighborhood becomes fragmented. However, the assumption that urbanization invariably erodes social capital is not absolute. A study in Jakarta by Nugraha and Nasrudin [25] argued that density increased opportunities for social interaction and found that higher population density was positively associated with higher social capital. This offered a crucial insight for the planners in IKN region: dense urban design, if coupled with accessible public spaces, could potentially foster social cohesion rather than diminish it.

3.7 Relationship between the Characteristics of Individuals and Elements of Social Capital in Forest Management

The relationship between the characteristics of individuals and elements of social capital is closely related to human capital. Human capital, which includes individual skills and abilities, forms the basis for social capital because social capital is embedded in human capital. Human capital can mobilize personal capital to increase self-awareness, self-regulation, and motivation. The higher the human capital, the greater the opportunity to build social capital [53]. To analyze the relationship between the components of individual characteristics and the elements forming social capital, the Spearman's rank correlation method was used.

The Spearman's rank correlation test suggested that individual characteristics were significantly linked to community social capital, as evidenced by a significant value below 0.001 (less than 0.05). Individual traits of

indigenous communities had a strongly positive correlation with social capital, with a coefficient of 0.756. Likewise, migrant communities demonstrated an even stronger association, with a correlation coefficient of 0.823. These findings indicated that superior characteristics of individuals in a community corresponded to higher social capital, which positively influenced forest management. Therefore, the first hypothesis was supported; a significantly positive relationship existed between the characteristics of individuals and community social capital in forest management in IKN.

This aligned with previous research, which stated that social capital within a community played an important role in enhancing the capacity for sustainable community-based forest management. Elements such as trust, cooperation, active social networks, and caring enabled communities to work together more effectively, share knowledge, and use resources wisely, all of which supported sustainable forest management [1]. This social capital concept could be applied to evaluate the performance of Community-Based Forest Management (CBFM) as it could provide a comprehensive picture of socio-economic and socio-ecological phenomena [6]. The results of the Spearman's rank correlation test are presented in Table 7 below.

Table 7. Results of Spearman's rank correlation test of indigenous people and immigrant communities

Variables	Characteristics (Indigenous)	Social Capital (Indigenous)	Characteristics (Migrants)	Social Capital (Migrants)
Characteristics	1.000	0.756**	1.000	0.823**
Social Capital	0.756**	1.000	0.823**	1.000
Sig. (2-tailed)	-	< 0.001	-	< 0.001
n	45	45	45	45

Note: ** denote significance at the 5% levels.

These results also expounded that if social capital, measured by the five parameters, has been improved, it will contribute to increased community participation in forest management in IKN. Based on these results, it was concluded that the second hypothesis was also accepted. There was a positive and significant relationship between characteristics of individuals, social capital, and community participation in forest management in IKN. Research by Kailola et al. [2] and Sylviani et al. [54] showed that social capital needed to be maintained, safeguarded, and improved. It should be the main concern of stakeholders to encourage individual and group independence and reduce inequality, especially social forestry development programmes. This social capital is also substantially influenced by knowledge about Community-Based Forest Management (CBFM) and the role of forest communities [54]. The success of community-based forest development should consider social capital as a factor of community readiness to accept development programmes [32].

4 Conclusions

Both indigenous and migrant communities have strong social capital, characterized by high levels of trust, norms, social networks, and care. While migrant communities excel in education, income, and social network adaptation, indigenous communities rely on customary norm-based social stability and local leadership. Both communities face challenges in increasing environmental awareness and development participation, so efforts are needed to enhance education and social participation to strengthen social capital and support sustainable development. The government needs to design inclusive and transparent policies, increase community capacity, and engage stakeholders, including development partners and the private sector, to provide technology, training, and resources that support sustainable community-based forest management.

Author Contributions

Conceptualization, S.A., M.A.S., R. and S.; methodology, S.A., M.A.S. and K.; formal analysis, S.A. and K.; investigation, S.A.; resources, S.A., H.H. and A.S.; data curation, S.A.; writing—original draft preparation, S.A. and K.; writing—review & editing, S.A. and K.; visualization, K.; supervision, M.A.S, R. and S. All authors have read and agreed to the published version of the manuscript.

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Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare no conflicts of interest.

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