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Building collaborative rural economies from below: An integrated institutional development model

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Abstract: Rural economic development in many developing countries remains constrained by fragmented institutions, weak inter-organizational coordination, and persistent top-down approaches. In Indonesia, Village Law No. 6/2014 has expanded village autonomy and fiscal capacity, positioning village-owned enterprises (BUMDes) and cooperatives as strategic actors in strengthening local economies. Yet collaborative arrangements at the village level remain underdeveloped, particularly in transmigration areas marked by socio-economic diversity and institutional complexity. This study examines the Palolo transmigration area in Sigi Regency, Central Sulawesi, and proposes the Integrated Institutional Economic Development Model (IIEDM), which combines New Institutional Economics, Social Capital, Endogenous Regional Development, and Local Economic Development within a co-creation governance approach. Using a sequential explanatory mixed-methods design, it pairs institutional assessments across the four IIEDM dimensions with perception surveys of village heads, BUMDes managers, and cooperative leaders, complemented by in-depth interviews and focus group discussions. The findings show that the principal constraints derive from structural weaknesses in the LED and ERD dimensions rather than from a lack of institutional or social potential. Although social capital remains relatively strong, it has not been mobilized to sustain inter-organizational collaboration, and existing arrangements insufficiently reduce coordination frictions among local actors. The study argues that co-creation processes; joint problem identification, shared institutional design, and sustained multi-actor engagement are essential for transforming fragmented economies into integrated systems, offering policy-relevant insights for transmigration and developing-country contexts.

Keywords: village-owned enterprises (BUMDes); cooperatives; co-creation governance; social capital; transmigration areas; inter-organizational coordination; decentralization

1. Introduction

Rural economies across the Global South are subject to varying degrees of institutional constraints, often hindered more by weak and fragmented institutions than by a mere shortage of capital or technical skill. The World Bank estimates that more than 80 percent of the world's extreme poor live in rural areas, where low-productivity agriculture and informal markets persist [1]. A growing body of work argues that this underdevelopment is shaped fundamentally by institutional arrangements and governance structures rather than by resource scarcity alone [2,3]. Indonesia offers a clear example. Village Law No. 6/2014 transferred substantial authority and fiscal

resources to villages (cumulative village fund allocations exceeded IDR 500 trillion between 2015 and 2023) and positioned village-owned enterprises (BUMDes) and cooperatives as the institutional cornerstones of local economic transformation [4,5]. In practice, however, many of these institutions underperform: only about 33 % of BUMDes are economically active, and a large share of cooperatives remain dormant or confined to savings-and-loan functions [6]. Rather than complementing one another, BUMDes and cooperatives often work in isolation or compete for the same assets, a fragmentation rooted in overlapping mandates, weak coordination, limited inter-organizational trust, and high transaction costs [7–9].

These problems cannot be solved by funding, technology, or managerial training alone, because their source is institutional [10,11]. To move beyond this fragmentation, this study proposes the Integrated Institutional Economic Development Model (IIEDM) (see **Figure 1**). The IIEDM addresses institutional underperformance by synthesizing four distinct yet complementary theoretical dimensions, which serve as the pillars for assessing and strengthening village-level collaboration. First, drawing on New Institutional Economics (NIE) anchored in the work of North [2] and contemporary applications [7,12], explains how formal and informal rules dictate behavior; its operational meaning is the systematic reduction of transaction costs and coordination frictions between actors. Second, Social Capital (SC), grounded in the relational literature by Woolcock and Narayan [13] and Westlund et al. [14], complements NIE by focusing on networks and relational governance; its operational meaning is the mobilization of interpersonal trust and social networks to facilitate collective economic action. Third, Endogenous Regional Development (ERD), based on internal growth approaches [11], ensures development is driven from within rather than imposed externally; its operational meaning is prioritizing the utilization of community-specific resources and comparative advantages to drive internal growth. Finally, Local Economic Development (LED), anchored in collaborative rural governance [15,16], provides the systemic framework linking the other dimensions; its operational meaning is the harmonization of diverse local actors and policies into an integrated market system.

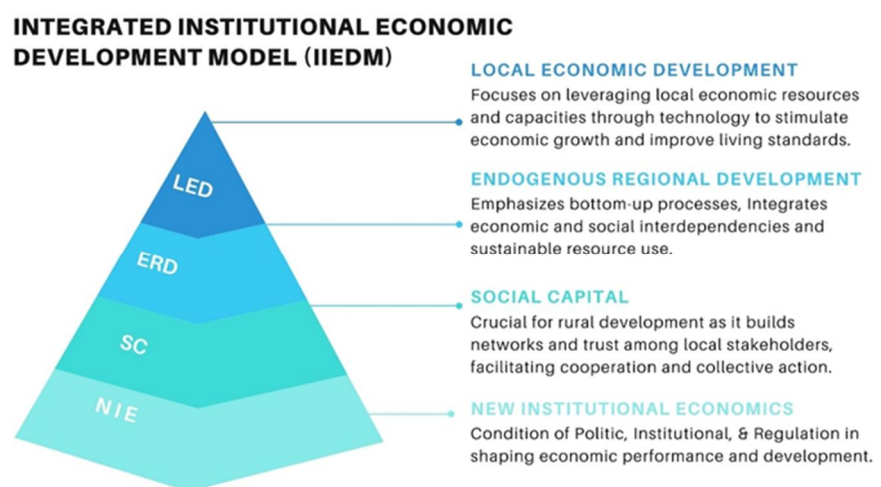


Figure 1. Construction of IIEDM model [17].

This study applies this four-dimensional model to the Palolo transmigration area in Sigi Regency, Central Sulawesi, as a case [17]. Specifically, the BUMDes and cooperatives analyzed in this study operate primarily within the agriculture, retail, and rural service sectors. This scope allows for a focused examination of inter-organizational coordination within the core economic activities of the region. To do so, the research employs a sequential explanatory mixed-methods design that combines an institutional assessment of the four IIEDM dimensions with perception surveys, in-depth interviews, and focus group discussions, addressing three questions: how far the four IIEDM pillars are fulfilled in rural Indonesia, how local actors perceive the role of collaboration and digitalization, and how co-creation processes can strengthen institutional integration between BUMDes and cooperatives.

2. Materials and methods

2.1. Study area and research design

This study was conducted in the Palolo transmigration area, Sigi Regency, Central Sulawesi Province, Indonesia, between July and December 2025. As a transmigration destination, Palolo is characterized by a unique socio-spatial dynamic where diverse ethnic groups from across Indonesia coexist. This historical migration has shaped distinct local bonding social capital within ethnic enclaves, yet simultaneously presents challenges in establishing cohesive, cross-institutional economic networks. A sequential explanatory mixed-methods design was used, comprising a quantitative phase followed by a qualitative phase. The first phase assessed institutional conditions using the Integrated Institutional Economic Development Model (IIEDM); the second phase used a perception survey, semi-structured interviews, and focus group discussions (FGDs). The primary field data underlying both phases were collected under the Ekspedisi Patriot program of the Ministry of Transmigration (Contract No. PKS-217/UN2.PPM/HKP.05.00/2025) and are documented in the project final report [17]; the report and the underlying datasets are available from the corresponding author and from the Ministry of Transmigration upon reasonable request.

Furthermore, the research workflow and the analytical procedures applied at each stage will be explained in **Figure 2**. The three numbered blocks correspond to the sequential phases of the design, the institutional assessment, the perception survey, and the interviews and focus group discussions, each labelled according to whether it generated quantitative or qualitative evidence. Within every block, the workflow is set out in three steps: the data collected, the analytical procedure applied to them, and the resulting output. Presenting the phases in this form allows every value reported in **Tables 1–3** to be traced to the specific procedure that produced it. The two lower panels record, respectively, the connecting and explanatory strategy by which the quantitative and qualitative strands were integrated, and the software used for all computation and figure production. The procedures summarized here are described in full in Sections 2.2 to 2.6.

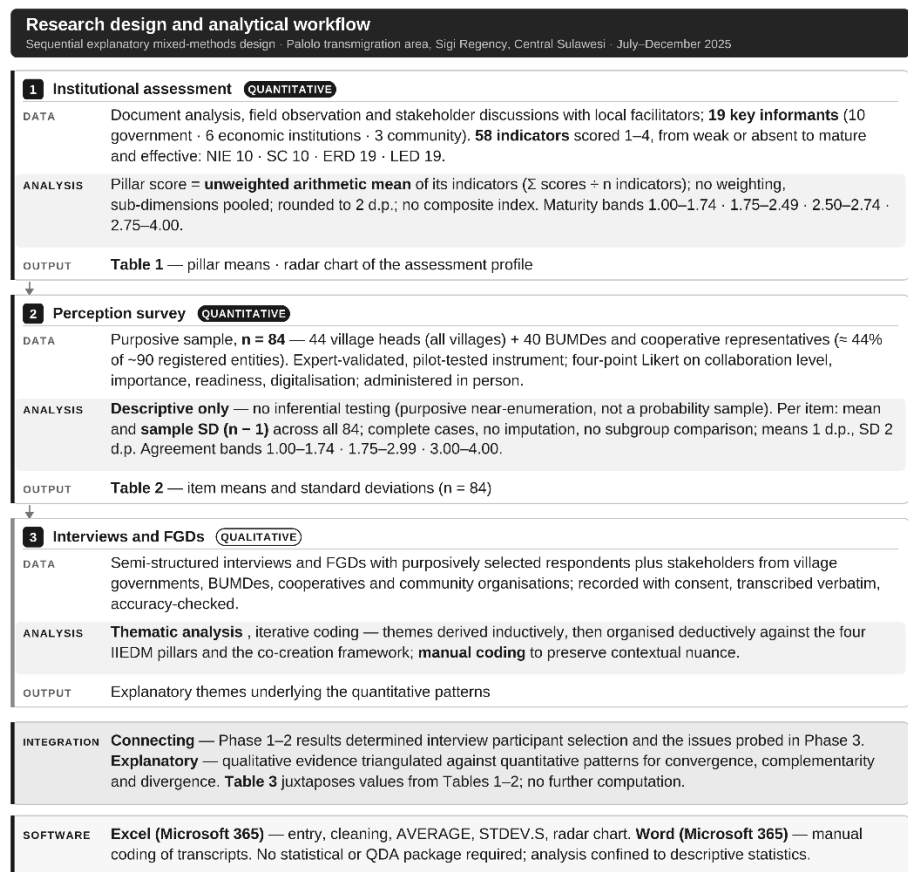


Figure 2. Research design and analytical workflow.

Note: The figure summarizes the sequential explanatory mixed-methods design applied in the Palolo transmigration area between July and December 2025. Rows correspond to the three research phases; columns distinguish data collection, the analytical procedure applied to the complete dataset, and the resulting output. Interpretation bands were defined a priori and differ deliberately between the institutional assessment (maturity) and the perception survey (agreement), as set out in Section 2.5. This figure was created by the authors from the study's tabulated data and subsequently developed technically only in final stage with AI assistance (Claude Opus 5, Anthropic, San Francisco, CA, USA; July 2026). The authors verified all content and take full responsibility for its accuracy. Source: authors' construction.

2.2. Phase one: Institutional assessment

Institutional conditions were assessed across the four pillars of the IIEDM: New Institutional Economics (NIE), Social Capital (SC), Endogenous Regional Development (ERD), and Local Economic Development (LED). Each pillar was operationalized through a set of predefined indicators derived from the institutional economics, governance, and regional development literature [2,13,14,18]. New Institutional Economics (NIE) emphasizes political, institutional, and regulatory dimensions through 10 indicators, serving as the primary foundation for building strong development governance. Social Capital (SC) emphasizes social aspects through 10 indicators, which play a crucial role in strengthening networks, participation, and social cohesion. Endogenous Regional Development (ERD) encompasses three dimensions: infrastructure (9 indicators), the agricultural economy (4 indicators), and the environment (6 indicators), which reflect the role of local resources in supporting sustainable development. Local Economic Development (LED) covers technology development (8 indicators) and macroeconomics (11

indicators), which strengthens local competitiveness through innovation and technology use. Each indicator was scored on a four-point ordinal scale (1 = weak or absent; 4 = mature and effective).

The research team conducted scoring in collaboration with local facilitators, based on document analysis, field observations, and preliminary discussions with key stakeholders. In this phase, initial qualitative exploration involved 19 key stakeholders to uncover the dynamics on the ground.

From this process, the research team identified key emerging patterns, such as gaps in the upstream-downstream supply chain, the failure of top-down policy interventions, and a crisis of public trust in cooperative entities. These thematic patterns were then conceptually mapped onto four pillars of development NIE, SC, ERD, and LED. Each pillar score was obtained as the unweighted arithmetic mean of the indicator scores within that pillar; no differential weighting was applied across indicators or pillars. This yields a total of 58 scored indicators across the four pillars (NIE, 10; SC, 10; ERD, 19; LED, 19). The full computational procedure applied to these scores is set out in Section 2.5.

2.3. Phase two: Perception survey

A perception survey was administered to village heads, BUMDes managers, and cooperative leaders. Respondents were selected using purposive sampling. A total of 84 respondents participated: 44 village heads (Kepala Desa) representing all 44 villages in the district, and 40 representatives from BUMDes and cooperatives. These 40 representatives were drawn from a total population of approximately 90 registered village-based business entities in the area, meaning our sample captures roughly 44 % of all registered local economic institutions. The selection of village heads, BUMDes managers, and cooperative leaders through purposive sampling was based on their strategic roles as the key “tripartite” components of village economic governance. Village heads were selected because of their position as the highest holders of administrative and political authority, with full authority to formulate local policies, allocate Village Funds, and foster economic institutions. Representatives of village-owned enterprises (BUMDes) were selected because of their role as the driving force behind the village economy, with direct responsibility for managing assets and generating village-owned revenue (PADes). Cooperative leaders were selected to represent member-based economic entities that deal directly with the socio-economic realities of the local community. The combination of these three actors is essential for assessing the level of fragmentation and the readiness for cross-institutional collaboration, as they are the ultimate decision-makers in joint economic initiatives within complex transmigration areas.

Although the number of respondents appears limited ($n = 84$), this sample is highly representative of the target population in the context of this study on institutional governance. The respondents do not represent the general village population, but rather the elite group of economic decision-makers in the study area. With a sample comprising 44 village heads and 40 representatives of village-based business entities, this sample covers nearly the entire population of strategic actors in the transmigration area under study. Therefore, the data obtained are considered

adequate and valid for evaluating perceptions at the top institutional level. Prior to data collection, the survey instrument was validated through expert judgment and preliminary pilot testing with local facilitators to ensure contextual relevance. The instrument comprised Likert-type items scored on a four-point scale, measuring (1) current levels of collaboration among rural institutions, (2) the perceived importance of collaboration for local economic development, (3) readiness to engage in joint initiatives, and (4) the perceived role of digitalization in coordination and transparency. The survey was administered in person. Survey responses were analyzed using descriptive statistics only; the procedures used to compute the item means and standard deviations reported in this article are set out in full in Section 2.5.

2.4. Interviews and focus group discussion

Following the perception survey, semi-structured interviews and focus group discussions were conducted with purposively selected survey respondents and additional stakeholders representing village governments, BUMDes, cooperatives, and community organizations. The qualitative method, through interview and FGD, covered the institutional dynamics underlying the quantitative findings of inter-organizational collaboration, sources of trust and conflict, perceived institutional barriers, and opportunities for collective innovation.

All interviews and discussions were audio-recorded with participants' consent, transcribed verbatim, and reviewed for accuracy. The qualitative data were analyzed using thematic analysis, following an iterative coding process in which emerging themes were first identified inductively and subsequently organized deductively according to the four IIEDM pillars (New Institutional Economics, Social Capital, Endogenous Regional Development, and Local Economic Development) and the co-creation governance framework. Manual coding was employed to preserve contextual nuances and facilitate the interpretation of institutional relationships across stakeholder groups.

2.5. Data integration and analysis

All quantitative material generated by this study was analyzed descriptively, and the procedures set out below were applied uniformly to the complete dataset rather than to individual tables. No inferential or hypothesis-testing procedures were performed. This follows from the design: respondents were selected purposively and constitute a near-complete enumeration of the strategic economic actors in the study area rather than a probability sample drawn for statistical generalization, so significance testing against a wider population would not be interpretable.

For the institutional assessment (Phase One), each of the 58 indicators was assigned a single integer value on the four-point ordinal scale described in Section 2.2 (1 = weak or absent; 4 = mature and effective). Indicator values were then aggregated to the pillar level as unweighted arithmetic means, that is, the sum of the indicator values within a pillar divided by the number of indicators in that pillar (NIE, 10 indicators; SC, 10; ERD, 19; LED, 19). For ERD and LED, the constituent sub-dimensions; infrastructure, agricultural economy and environment for ERD; technology development and macroeconomics for LED; were pooled directly at the

pillar level, so that every indicator carries equal weight and no sub; dimension weighting was introduced. The resulting pillar means were rounded to two decimal places; these are the values reported in **Table 1** and plotted in **Figure 3**. For interpretation, each pillar mean was assigned to one of four bands defined a priori on the same four; point scale: low (1.00–1.74), low–moderate (1.75–2.49), moderate (2.50–2.74) and medium–high (2.75–4.00). No composite IIEDM index was calculated across the four pillars, since the model treats the pillars as layered rather than substitutable.

Table 1. Institutional assessment scores across the four IIEDM pillars.

IIEDM pillar	Score (out of 4)	Category
Social Capital (SC)	2.80	Medium; high
New Institutional Economics (NIE)	2.50	Moderate
Endogenous Regional Development (ERD)	2.05	Low; Moderate
Local Economic Development (LED)	1.63	Low

Note: Scores are mean values on a four-point ordinal scale (1 = weak or absent; 4 = mature and effective), derived from the institutional assessment described in Section 2.2 and computed as specified in Section 2.5. Categories reflect the following score bands: low (1.00–1.74), low–moderate (1.75–2.49), moderate (2.50–2.74), and medium–high (2.75–4.00). SC = Social Capital; NIE = New Institutional Economics; ERD = Endogenous Regional Development; LED = Local Economic Development. Source: authors' assessment, 2025.

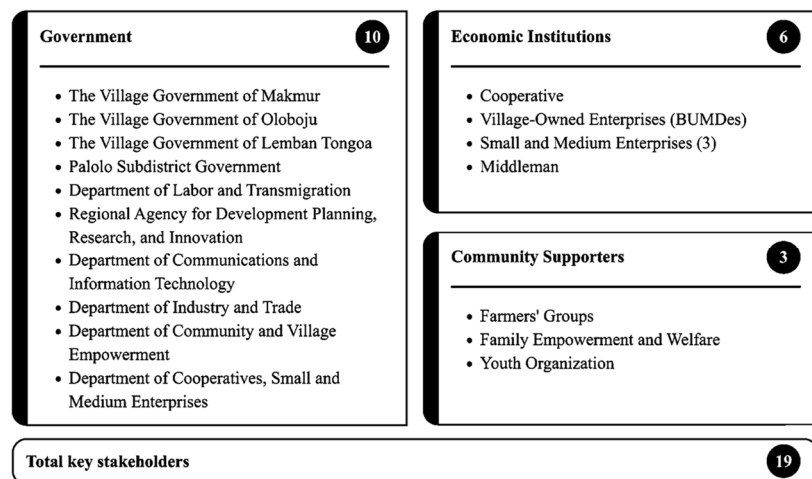


Figure 3. Key stakeholders.

Note: The qualitative interviews in Phase 1 involved a total of 19 key informants, consisting of 10 government representatives, 6 representatives from economic institutions, and 3 community representatives, to ensure comprehensive triangulation of institutional perspectives. Figure produced by the authors in Canva (see Section 2.6). Source: authors' assessment.

For the perception survey (Phase Two), each Likert; type item was summarized by its arithmetic mean and its sample standard deviation (SD), the latter calculated with $n - 1$ in the denominator, across all 84 respondents. All 84 returned questionnaires were complete: no case was excluded and no value was imputed, so every mean and SD reported here is based on the full dataset ($n = 84$) rather than on item; specific subsets. Village heads and institutional representatives were pooled in a

single distribution, and no subgroup comparison between the two was undertaken. Item means are reported to one decimal place and standard deviations to two decimal places in **Table 2**. Because these items measure agreement rather than institutional maturity, they were interpreted using conventional Likert bands; low (1.00–1.74), moderate (1.75–2.99) and high (3.00–4.00), which differ deliberately from the maturity bands applied to the institutional assessment above.

Table 2. Stakeholder perceptions on institutional collaboration between BUMDes and cooperatives.

Aspect	Indicator	SD	Score (out of 4)	Category
Role of economic institutions	Role of BUMDes in driving the village economy	0.83	3.3	High
	Role of cooperatives in local economic development	0.83	3.2	High
Inter; institutional collaboration	Current level of collaboration between institutions	0.88	2.9	Moderate
	Perceived importance of BUMDes–cooperative collaboration	0.92	3.4	High

Note: Scores mean perception ratings on a four-point Likert scale (1 = strongly disagree / very low; 4 = strongly agree / very high), based on responses from 84 participants (44 village heads and 40 BUMDes and cooperative representatives). Means and sample standard deviations were computed as specified in Section 2.5. Categories reflect the following score bands: low (1.00–1.74), moderate (1.75–2.99), and high (3.00–4.00). BUMDes = village-owned enterprises (Badan Usaha Milik Desa). Source: authors' survey.

Table 3 involves no further computation. It juxtaposes values already reported in **Tables 1** and **2**, grouping them according to whether they express realized institutional capacity or perceived need and latent potential; it is a presentational synthesis rather than a new analysis, and no arithmetic relationship between the rows of its two columns is implied. The procedure applied to the qualitative material is described in Section 2.4, and the software used for all analysis and figure production is specified in Section 2.6.

Table 3. Synthesis of institutional readiness and perceived collaborative need.

Low realized capacity (institutional assessment and current practice)	High perceived need and recognized potential (actor perceptions)
LED outcomes 1.63 (low)	Importance of BUMDes cooperative collaboration 3.4 (high)
ERD mobilization 2.05 (low; moderate)	Role of BUMDes in the village economy 3.3 (high)
Current inters institutional collaboration 2.9 (moderate)	Role of cooperatives in local development 3.2 (high)
	Social capital available for mobilization 2.80 (medium; high)

Note: Values are drawn from **Table 1** (institutional assessment) and **Table 2** (stakeholder perceptions). The table groups indicators by whether they reflect realized institutional capacity or perceived need and latent potential; it does not imply a direct one-to-one mapping between rows.

The study adopted the connecting and explanatory integration strategy characteristic of a sequential explanatory mixed-methods design. Results from the institutional assessment and perception survey served as the basis for selecting interview participants and identifying issues requiring deeper exploration during the qualitative phase. For example, quantitative findings indicating relatively strong institutional and social foundations, but weak developmental outcomes guided the investigation of the institutional mechanisms responsible for this discrepancy.

During the interpretation stage, qualitative findings were systematically integrated with the quantitative results through triangulation. Rather than treating the two datasets independently, interview and FGD evidence were used to explain, validate, and contextualize the statistical patterns observed in the institutional assessment and perception survey. The integration process focused on identifying areas of convergence, complementarity, and divergence between numerical scores and stakeholder experiences, thereby strengthening the credibility and explanatory power of the findings. This approach enabled the study to move beyond descriptive statistics by uncovering the institutional processes that explain why collaborative capacity remained limited despite relatively favorable institutional and social conditions.

2.6. Software and analytical tools

All quantitative data were entered, cleaned and analyzed in Microsoft Excel (Microsoft 365; Microsoft Corporation, Redmond, WA, USA). Excel was used to compute the indicator, and pillar means reported in **Table 1** and the item means and standard deviations reported in **Table 2**, using its built-in AVERAGE and STDEV.S functions. Because the analysis was confined to descriptive statistics, no dedicated statistical package was required. Interview and focus group discussion transcripts were coded manually in Microsoft Word (Microsoft 365) rather than in qualitative data analysis software, for the reasons given in Section 2.4.

Figures were produced as follows. **Figure 1**, the conceptual representation of the IEDM pyramid, and **Figure 3**, the composition of the Phase One key informants, were drawn in Canva and exported as raster images. **Figure 2** about Research design and analytical workflow created by the authors from the study's tabulated data and subsequently developed technically with AI assistance. **Figure 4**, the radar chart of institutional assessment scores, was generated directly from the pillar means reported in **Table 1** using the radar chart function in Microsoft Excel (Microsoft 365). No figure was edited in any way that alters the underlying values it displays. All graphical elements were produced by the authors, and no third-party or licensed image material was used.

2.7. Research limitations

This study has several methodological and contextual limitations that should be considered when interpreting the findings, as well as their implications for the generalizability of the study. First, given the small sample size ($n = 84$) and the purposive sampling approach focused on institutional elites (village heads, village-owned enterprises, and cooperatives), these findings predominantly reflect a managerial (top-down) perspective. Although this sample size is considered adequate to represent the population of strategic “decision-makers” in the study area, the resulting findings are highly likely to contain structural bias. Second, the use of a single-area design in a transmigration area with a unique sociocultural and historical institutional landscape means that these findings cannot be readily generalized to other types of villages in Indonesia. Third, although the study was procedurally justified as non-interventional, officially mandated by the Ministry of Transmigration, and conducted with full informed consent, the absence of a formal review by an

institutional ethics committee remains a limitation in meeting the strict standards of international scientific protocols.

3. Results and discussion

Results are presented in three stages: (3.1) the institutional assessment across the four pillars of the Integrated Institutional Economic Development Model (IIEDM), (3.2) findings from the perception survey of local actors, and (3.3) the alignment between institutional conditions and perceived collaborative capacity.

3.1. Institutional assessment results

The Integrated Institutional Economic Development Model (IIEDM) conceptualizes rural development as a layered and cumulative process represented as a pyramid (see **Figure 1**). This structural conceptualization builds upon foundational literature which argues that relational and formal governance must precede advanced economic outcomes [2]. Specifically, New Institutional Economics (NIE) and Social Capital (SC) constitute the foundational layers that enable Endogenous Regional Development (ERD) processes, which subsequently generate Local Economic Development (LED) outcomes [16]. This conceptual structure reflects the premise that higher-order economic achievements depend on the stability and coherence of underlying institutional and relational conditions [13].

Institutional conditions were scored on a four-point scale across the four IIEDM pillars (**Table 1**). As outlined in Section 2.5, these scores were derived by integrating quantitative indicator assessments with qualitative validations from stakeholder interviews, ensuring that the numerical values accurately reflect the on-the-ground institutional dynamics. Performance was uneven. The LED dimension scored the lowest (1.63), indicating limited access to capital, technology, and markets, as well as suboptimal collaboration among stakeholders. The ERD dimension scored 2.05, indicating a narrowly based local economic structure with limited diversification and adaptive capacity. The Social Capital (SC) dimension scored highest (2.80), reflecting relatively strong community norms and internal solidarity, while the New Institutional Economics (NIE) dimension scored 2.50, indicating a generally enabling regulatory and governance environment. Overall, the assessment shows comparatively stronger institutional and social foundations (NIE, SC) but markedly weaker developmental outcomes (ERD, LED).

The institutional assessment indicates that rural economic development in Palolo District is uneven across the main pillars of the IIEDM framework. The Local Economic Development (LED) dimension reveals persistent structural constraints, particularly limited access to capital, technology, and markets, alongside suboptimal collaboration among key stakeholders, which collectively weaken the functioning of local economic ecosystems. This uneven profile across the four pillars is visualized in **Figure 4**, which plots the mean assessment score of each pillar on a common four-point scale and makes the gap between the foundational and the developmental pillars directly comparable.

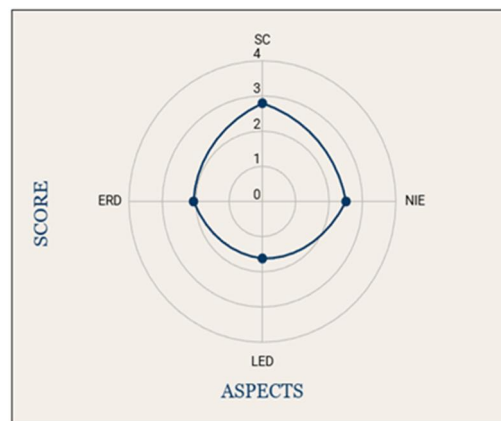


Figure 4. Institutional assessment profile across the four IIEDM pillars.

Note: Radar chart of mean assessment scores on a four-point scale (0–4) for the four IIEDM pillars: Social Capital (SC, 2.80), New Institutional Economics (NIE, 2.50), Endogenous Regional Development (ERD, 2.05), and Local Economic Development (LED, 1.63). The same values are reported in **Table 1**. The profile shows comparatively stronger foundational pillars (SC, NIE) and weaker developmental pillars (LED, ERD). The chart was generated from the pillar means in **Table 1** using Microsoft Excel (see Section 2.6). Source: authors' assessment.

Similarly, the Endogenous Regional Development (ERD) dimension reflects a developmental trajectory that remains fragile, where local economic structures are still narrowly based and vulnerable to external shocks, underscoring the need for greater diversification, adaptive capacity, and the strengthening of locally embedded economic activities. In contrast, the Social Capital dimension suggests relatively strong community norms and internal solidarity, offering significant potential for collective action; however, this potential has not been fully realized in coordinated economic initiatives across institutions.

The New Institutional Economics (NIE) dimension indicates that formal governance arrangements, regulatory frameworks, and local government institutions provide a generally enabling environment, although their effectiveness in actively facilitating cross-institutional collaboration and non-extractive development remains uneven. Taken together, these findings point to a critical disconnect between existing social and institutional potential and the practical capacity to mobilize these assets into coherent, sustainable rural economic development strategies.

Improving resilience in the ERD dimension therefore requires income diversification, enhanced adaptive capacity of local economic actors, and the development of sustainable alternative sectors. ERD emphasizes the mobilization of local resources, knowledge, social relations, and institutional capacities as the basis for sustainable development, while LED focuses on coordinated public–private–community actions to generate employment, income, and local value creation [15]. However, without robust institutional and social foundations, ERD and LED efforts often remain fragmented, short-lived, or externally dependent [16].

The relatively strong social capital base, meanwhile, presents significant potential for developing future leading commodities through strengthened community-based institutions such as cooperatives, BUMDes, and farmer groups, while the comparatively conducive institutional infrastructure captured by the NIE dimension can be further strengthened in line with the Sigi Regency's leadership vision to promote non-extractive and sustainable resource development.

Social capital refers to the networks, trust, norms of reciprocity, and shared understandings that facilitate cooperation among individuals and organizations [13]. In many rural settings, social capital is unevenly distributed and shaped by historical conflicts, elite capture, political competition, and organizational rivalries [14]. Rather than enabling collaboration, existing networks may reinforce exclusionary practices or fragmented group identities [18]. Strong social capital can compensate for institutional weaknesses, while fragile trust can negate the benefits of formal governance arrangements [18].

3.2. Stakeholder perceptions of institutional collaboration

Drawing on the responses of the 84 institutional leaders, who cover all 44 village heads in the district and roughly 44 % of registered village-based business entities, respondents reported low current levels of collaboration between Village Owned Enterprises (BUMDes) and cooperatives, where formal coordination remained largely procedural rather than substantive, with limited joint planning or shared resource management. At the same time, survey responses show strong consensus regarding the importance of collaboration for future rural economic development. A large majority of respondents express high agreement that inter-organizational cooperation is essential for improving efficiency, expanding market access, and enhancing local value creation. Digitalization is also consistently perceived as a critical enabler of transparency, coordination, and access to wider markets.

Respondents rated the role of BUMDes in driving the village economy highly (3.3/4) and the role of cooperatives in local economic development highly (3.2/4). The current level of inter-institutional collaboration was rated moderate (2.9/4), whereas the perceived importance of BUMDes cooperative collaboration was rated high (3.4/4). Respondents identified management integrity and human resource quality as the main determinants of cooperative success, and uneven human resource capacity and the absence of shared collaboration forums as the principal barriers. The most significant challenges facing BUMDes were managerial competence and capital constraints, and the most frequently cited support need was training in financial management and digital accounting (Table 2).

3.3. Alignment between institutional conditions and actor perceptions

The institutional assessment and the perception survey converged on the weakness of realized collaboration. In the institutional assessment, Endogenous Regional Development (ERD) (2.05) and Local Economic Development (LED) (1.63) represented the two developmental pillars, whereas the perception survey measured collaboration among Village-Owned Enterprises (BUMDes) and cooperatives.

The perception survey rated the current level of inter-institutional collaboration as only moderate (2.9/4) and characterized existing coordination as procedural rather than substantive (Section 3.2). The two data sources thus describe the same condition from different vantage points: weak developmental outcomes in the assessment correspond to limited operational collaboration in the perception data.

At the same time, the data reveals a consistent gap between potential and realization. The foundational pillars scored comparatively high; SC (2.80) and NIE

(2.50); and respondents rated the perceived importance of BUMDes cooperative collaboration (3.4/4), the role of BUMDes in the village economy (3.3/4), and the role of cooperatives in local development (3.2/4) as high. These figures stand in contrast to the low LED outcome (1.63) and the moderate current collaboration level (2.9/4). The gap is also visible within the survey alone: the difference between the perceived importance of collaboration (3.4) and its current realized level (2.9) indicates that stated aspiration consistently exceeds observed practice.

Juxtaposing the two dimensions clarifies the overall pattern (**Table 3**). Indicators reflect institutional readiness and realized capacity cluster at the lower end of the scale, whereas indicators reflect perceived need and recognized institutional potential cluster at the higher end. Taken together, the combined evidence describes a setting characterized by high perceived need and substantial latent potential alongside low institutional readiness to convert that potential into collaborative practice.

In sum, the institutional assessment reveals relatively low scores for the ERD and LED dimensions, indicating persistent structural barriers related to access to capital, technology, and markets, while the survey results show low current levels of collaboration but strong agreement regarding its future importance.

4. Discussion

4.1. Institutional foundations and the gap between potential and realization

The institutional assessment and survey findings reveal a clear pattern of misalignment. While local actors widely acknowledge the strategic importance of collaboration and digital integration, and the foundational NIE and social capital pillars are comparatively strong, weak developmental structures in the ERD and LED dimensions and the absence of mechanisms to mobilize existing institutional potential, limit the realization of these aspirations. This discrepancy underscores untapped collaborative potential constrained by structural and relational barriers.

The results thus highlight a rural development context characterized by high perceived need and low institutional readiness for collaboration, providing a critical empirical foundation for the subsequent discussion on the role of co-creation governance in strengthening institutional integration.

The findings underscore the centrality of institutional foundations in shaping rural economic outcomes. The comparatively strong SC and NIE scores set against weak ERD and LED outcomes indicate that the primary constraints in Palolo derive from structural weaknesses in mobilizing and translating institutional potential, rather than from an absence of that potential [13,16]. From an NIE perspective, weak rules in use, high transaction costs, and limited enforcement constrain coordination beyond narrow organizational boundaries; even where formal structures exist, their limited credibility and inconsistent application weaken incentives for long-term cooperation [14]. This amplifies collective action problems, as actors rationally hesitate to invest in joint initiatives when risks of opportunism and coordination failure are high, which helps explain why programs centered on financial assistance or organizational capacity building often produce fragmented, short-lived outcomes.

4.2. The collaboration paradox: Strong willingness, weak mechanisms

The relatively strong social capital score requires careful interpretation. Social capital is unevenly distributed and shaped by historical conflict, elite capture, and organizational rivalry and may reinforce exclusionary or fragmented identities rather than enable collaboration [16,18]. In Palolo, fragile bridging social capital among BUMDes, cooperatives, and village authorities constrain shared norms and mutual accountability, while inward-looking bonding social capital reinforces institutional silos [13,18]. The divergence between weak institutional foundations and strong actor-level support for collaboration and digitalization is therefore the central finding: the problem is not a lack of awareness or willingness, but the absence of institutional mechanisms to translate shared aspirations into coordinated action. This challenges technocratic explanations of rural underperformance.

Evidence from other BUMDes settings reinforces this reading. Community trust in village enterprises has been shown to depend on the quality of village governance rather than on social proximity alone, indicating that trust is an institutional product rather than a pre-existing endowment [19]. Comparable findings from Sikka Regency show that weak BUMDes governance constrains the contribution of village enterprises to agricultural sustainability even where local resource potential is substantial [20]. Comparative evidence from rural China further demonstrates that collective action can correct elite-dominated governance where institutionalized channels for joint decision-making exist [21]. Read together with the Palolo results, these studies suggest that social capital becomes economically productive only once it is embedded in coordination mechanisms with enforceable roles and shared accountability; precisely the layer that is missing in the case examined here.

4.3. Co-creation governance as an activating mechanism

Against this backdrop, co-creation governance emerges as a pathway for overcoming institutional fragmentation. By fostering shared ownership of problems and solutions, co-creation processes can reduce transaction costs, align incentives, and progressively rebuild trust [22]. In this study, co-creation is conceptualized as the processual mechanism that activates the IIEDM layers, transforming institutional potential into collective economic action [23]. Through sustained interaction in joint forums, actors negotiate roles, clarify expectations, and develop informal rules; in use that complement formal institutions [24]. By bridging formal rules, social relations, and development strategies, co-creation thus offers a route out of fragmentation and toward integrated rural economic governance [25]. Co-creation does not replace existing governance structures; it operates as an enabling process that activates and connects them across the IIEDM layers.

4.4. Theoretical and practical contributions

The integration of IIEDM and co-creation contributes to literature in two ways. First, it demonstrates that collaborative governance outcomes are contingent on the depth and configuration of underlying institutional foundations, extending collaborative governance theory with insights from institutional economics. This extends recent work that treats collaborative governance as a route to competitive rural

enterprise [24] by specifying the institutional preconditions on which such collaboration depends. Second, it advances IIEDM as both a diagnostic and an intervention-oriented framework, capable of identifying institutional bottlenecks and guiding context-sensitive governance reforms bridging abstract institutional theory and the practical challenges of rural economic development. In doing so, the framework responds to a gap identified in the scoping literature on BUMDes governance and accountability, which documents persistent weaknesses in accountability and accounting practice but stops short of situating them within a broader institutional architecture [26]. IIEDM locates such organizational-level deficits within the layered institutional conditions that produce them and thereby reframes them as coordination problems rather than isolated managerial failures.

5. Conclusion

The article concludes that strengthening rural economies requires more than financial support, technical assistance, or organizational capacity building. Instead, sustainable rural economic development depends fundamentally on institutional integration and collaborative governance. Drawing on empirical evidence from rural Indonesia, the study shows that the principal constraints derive not from an absence of institutional or social potential, but from structural weaknesses in the developmental (ERD and LED) dimensions and from weak mechanisms, particularly operational rules, in use and inter-organizational trust, for translating that potential into collective economic outcomes.

By introducing the Integrated Institutional Economic Development Model (IIEDM), this study offers a structured framework for diagnosing rural development challenges as layered institutional problems rather than isolated organizational failures. The model highlights the cumulative interaction between New Institutional Economics, Social Capital, Endogenous Regional Development, and Local Economic Development, providing a more precise understanding of why many decentralized rural development initiatives underperform. Importantly, the integration of IIEDM with a co-creation governance perspective emphasizes that institutional capacity is not static, but can be actively constructed through sustained collaboration, joint problem definition, and shared ownership of development processes.

From a policy perspective, the findings suggest that efforts to strengthen BUMDes and rural cooperatives should move beyond standalone support programs toward mechanisms that foster coordination, reduce transaction costs, and build trust across organizational boundaries. Institutionalized co-creation platforms such as joint planning forums, collaborative business models, and digitally enabled coordination mechanisms can play a critical role in translating decentralized authority into meaningful local economic transformation.

While this study is limited by its scope and context; specific focus, the analytical framework it advances is transferable to other rural settings facing similar institutional fragmentation. Future research could extend this approach through longitudinal analysis, comparative studies across regions, and deeper examination of how co-creation processes evolve. Overall, the study contributes to ongoing debates on rural development governance by demonstrating how institutional integration and

collaborative processes can serve as foundational drivers of inclusive and sustained rural economic development.

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Abbreviations

IIEDM	Integrated institutional economic development model
NIE	New institutional economics
SC	Social Capital
ERD	Endogenous regional development
LED	Local economic development
BUMDes	Village; owned enterprise (badan Usaha Milik Desa)
PADes	Village; owned revenue (Pendapatan Asli Desa)
FGD	Focus group discussion
SD	Standard deviation
IDR	Indonesian rupiah
UN SDGs	United nations sustainable development goals

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