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The Strategic Role of FELDA in Improving Socioeconomic Wellbeing: A Critical Analysis (2015-2024)

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Abstract

This study examines how effectively FELDA has improved settler socioeconomic wellbeing (2015-2024) and identifies implementation gaps in FELDA's development strategies. Research employed a qualitative multi-case methodology across six settlements in Johor, Pahang, and Negeri Sembilan, collecting data through interviews with 84 respondents, field observations, and document analysis. Data underwent thematic analysis within an institutional theory framework. Results demonstrate FELDA achieved significant economic improvements—settler monthly income increased 68% (RM2,500 to RM4,200) and the Community Wellbeing Index rose from 65.5 to 78.3. However, implementation gaps persisted with outcomes below targets, alongside a sharp generational divide in technology adoption. These findings provide guidance for policymakers on institutional transformation strategies regarding demographic transition, technology adoption, and governance models. The study extends institutional theory by demonstrating formal structures' interaction with local implementation dynamics in rural development contexts. Future research should investigate transferability of successful FELDA strategies to other rural development initiatives and explore innovative intergenerational knowledge transfer models that could address the technological divide affecting elderly settlers.

Keywords: FELDA, Rural Development, Institutional Transformation, Implementation Effectiveness, Socioeconomic Wellbeing.

Introduction

Rural development has been a critical component of national and global development strategies since the 1950s, evolving from approaches focused solely on agricultural modernization to more holistic models encompassing economic, social, environmental, and cultural dimensions. As highlighted by Ellis and Biggs (2021), the concept of rural development has undergone significant transformation, reflecting a deeper understanding of the multifaceted nature of rural challenges and opportunities.

In the context of Malaysia, rural development has been particularly central to national development policy since independence in 1957. With approximately 70% of the population residing in rural areas during the early post-independence period, many living in poverty conditions, the Malaysian government established various agencies and initiatives to address rural development challenges (Unit Perancang Ekonomi, 2021). Among these initiatives, the Federal Land Development Authority (FELDA) stands as one of the most significant and enduring rural development models.

Established in 1956, FELDA was created with the primary mandate of developing new lands and resettling rural communities to improve their socioeconomic status. Over decades, it has

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evolved into a comprehensive rural development institution that has transformed vast areas of uncultivated land into productive agricultural settlements. According to FELDA's annual reports, by 2023, the organization had developed over 850,000 hectares of land and settled more than 112,000 settler families across 317 schemes throughout Malaysia (FELDA Annual Report, 2023). This extensive network has played a crucial role in poverty eradication and the socioeconomic advancement of rural communities.

However, FELDA now faces significant contemporary challenges that threaten its continued relevance and effectiveness. Demographic shifts represent one of the most pressing issues, with the average age of first-generation settlers now exceeding 65 years. More concerning is the limited involvement of younger generations in agricultural activities, with only 30% of second-generation settlers engaged in farming compared to 75% of the first generation (FELDA Demographic Report, 2023). This generational transition challenge raises critical questions about the sustainability of FELDA's traditional development model.

Additionally, technological disruption and digital transformation have created both opportunities and challenges for FELDA communities. While digital technologies offer potential solutions for agricultural modernization and economic diversification, data from the FELDA Digital Transformation Survey (2022) indicates that only 35% of settlers actively utilize digital technologies in their daily agricultural operations, highlighting a significant digital adoption gap.

Environmental sustainability presents another critical challenge. The FELDA Environmental Impact Study (2023) reveals that approximately 30% of FELDA agricultural lands are experiencing significant soil degradation, requiring urgent remediation. Climate change impacts further compound these environmental challenges, with increasing incidents of extreme weather events affecting agricultural productivity and settler livelihoods.

Governance and implementation issues also persist, with studies indicating notable disparities between strategic planning at the headquarters level and implementation realities at the settlement level. The FELDA Policy Implementation Review (2023) identifies coordination weaknesses, resource constraints, and bureaucratic complexities as significant factors contributing to implementation gaps.

While previous research has examined various aspects of FELDA's development model and achievements, there remains a significant research gap regarding how FELDA adapts to contemporary challenges, particularly in the context of generational transition, technological transformation, and environmental sustainability. Most existing studies have focused on historical developments or specific program outcomes without comprehensively analyzing the institutional transformation process across multiple settlements with varying characteristics.

This research addresses this gap by critically analyzing FELDA's strategic role in enhancing settler socioeconomic wellbeing from 2015 to 2024, a period marked by significant transformation initiatives including the FELDA New Deal and FELDA Transformation Program 2.0. Using Institutional Theory as its theoretical framework, the study examines how FELDA's formal structures, organizational values, and adaptation mechanisms influence program effectiveness and settler wellbeing.

The research employs a qualitative multi-case study design, examining six selected FELDA settlements across Johor, Pahang, and Negeri Sembilan. These settlements represent diversity in terms of establishment age, geographic location, and development achievements, allowing for comparative analysis of implementation variations across different contexts. Data collection

methods include in-depth interviews with 84 respondents, field observations, and document analysis, providing a comprehensive understanding of FELDA's transformation dynamics.

This study aims to achieve three specific objectives: first, to examine the implementation of FELDA's strategies and development programs in enhancing socioeconomic wellbeing at selected settlements; second, to evaluate the effectiveness of these strategies in addressing contemporary challenges from multiple stakeholder perspectives; and third, to analyze gaps between strategic planning and program implementation, along with influencing factors.

The research contributes significantly to both academic knowledge and practical policy considerations. Theoretically, it extends Institutional Theory by examining how development institutions adapt to changing environments in the context of rural development. Practically, it provides valuable insights for policymakers and FELDA administrators on effective implementation strategies and approaches to address contemporary challenges. For the broader development community, the study offers important lessons on institutional transformation and adaptation in rural development organizations.

By critically examining FELDA's strategic role in enhancing settler socioeconomic wellbeing, this research contributes to the ongoing discourse on rural development models in developing countries, particularly in the context of technological transformation, generational transition, and sustainability challenges in the 21st century.

Literature Review

This literature review explores the complex dynamics of rural development institutions, with a specific focus on FELDA (Federal Land Development Authority) in Malaysia, analyzing its transformation in addressing contemporary challenges. The review synthesizes research across institutional theory, rural development paradigms, and socioeconomic transformation to identify significant research gaps that this study aims to address.

Rural development has undergone substantial paradigm shifts over recent decades. Ellis and Biggs (2021) trace this evolution from the modernization paradigm of the 1960s to more holistic approaches today. The initial focus on agricultural productivity has evolved toward integrated models that recognize the multidimensional nature of rural development. Chambers (2014) emphasizes that contemporary development must acknowledge the interconnection between economic, social, environmental, and institutional dimensions. This evolution reflects a growing understanding that effective rural development requires comprehensive strategies rather than isolated interventions.

In Southeast Asia, this evolution is particularly evident in various institutional approaches. The Asian Development Bank (2022) documents how different countries have adapted varying models of rural land settlement schemes, each with distinct approaches to community development. As noted by Tirtosudarmo (2021), Indonesia's transmigration program represents one of the world's largest land settlement initiatives, while Thailand has focused on strengthening value chains through programs like One Tambon One Product (Pongpanich & Wong, 2019). These diverse approaches highlight the importance of contextual adaptation in rural development strategies.

The transformation of rural development institutions is increasingly viewed through the lens of institutional theory, providing valuable frameworks for understanding organizational change processes. DiMaggio and Powell (2020) identify three key mechanisms in institutional

processes: coercive (formal structures and regulations), normative (values and organizational culture), and mimetic (adaptation of best practices). These mechanisms offer valuable frameworks for analyzing how organizations like FELDA navigate change. Furthermore, Scott (2019) argues that institutions provide stability through structures while simultaneously needing to adapt to remain relevant. This tension between stability and change is central to understanding FELDA's transformation journey, especially as it faces contemporary challenges.

Building on this foundational understanding, North (2018) emphasizes that institutional adaptation is critical for continued effectiveness, particularly when facing disruptive environmental changes. In a similar vein, Meyer and Rowan (2021) highlight the importance of legitimacy in institutional survival, suggesting that organizations must maintain stakeholder recognition while evolving their practices. Thornton et al. (2022) introduce the concept of 'institutional logics' which helps explain how organizations like FELDA negotiate competing demands across economic, social, and environmental domains. These theoretical perspectives collectively provide a robust framework for analyzing FELDA's institutional transformation in response to changing rural development paradigms.

Technology adoption represents a significant challenge for rural development institutions in the contemporary era. As noted by Hassan and Wong (2022), digital infrastructure inadequacies often limit the effectiveness of smart farming initiatives in rural areas. The FELDA Digital Transformation Survey (2023) indicates that while digital initiatives have gained traction, significant barriers remain in infrastructure and digital literacy. Consequently, Azman and Hussein (2023) emphasize that digital transformation in rural contexts requires carefully contextualized approaches rather than imported urban solutions. This perspective is supported by Wong and Hamzah (2023), who found that technology adoption in rural communities is shaped by complex social dynamics beyond mere infrastructure availability. The digital transition therefore represents both an opportunity and a challenge for institutions like FELDA.

Alongside technological challenges, a critical issue facing rural development institutions is generational transition. Abdul Hamid and Noor (2023) highlight the decreasing interest among rural youth in agricultural activities, a trend observed globally but particularly acute in rapidly developing economies like Malaysia. The FELDA Demographic Study (2023) reveals that the average age of first-generation settlers exceeds 65 years, while youth participation in agricultural activities has declined significantly. This demographic challenge threatens the sustainability of rural development models. However, Abdul Rahim and Noraini (2023) suggest that digital entrepreneurship opportunities may provide pathways to re-engage rural youth. This aligns with Noor and Rahman (2024), who document how digital innovation in rural agriculture has created new interest among younger generations in some FELDA settlements. The intersection of generational change and technological innovation thus presents both challenges and opportunities for institutional adaptation.

Additionally, studies have consistently identified implementation gaps as significant barriers to effective rural development. Abdul Hamid and Razali (2024) emphasize the importance of balancing top-down planning with bottom-up implementation to ensure program relevance. The FELDA Policy Implementation Review (2023) reveals significant disconnects between central planning and local implementation, highlighting coordination challenges across administrative levels. Likewise, Wong and Tan (2023) argue that institutional structures often fail to adapt quickly enough to emerging challenges, creating friction between planning and execution. This perspective is reinforced by Hamzah and Razali (2023), who found that learning and adaptation

processes within institutions are often constrained by rigid bureaucratic structures. These implementation challenges highlight the need for more flexible and responsive governance models.

Environmental sustainability has also emerged as a crucial dimension of rural development in recent years. Abdul Hamid and Rahman (2023) highlight the importance of integrating sustainability principles into all aspects of rural development programs. The FELDA Environmental Impact Study (2023) reveals concerning levels of land degradation in some settlements, indicating a need for more sustainable agricultural practices. Similarly, Zulkifli and Hassan (2023) emphasize the growing importance of climate-smart agriculture in ensuring long-term viability of rural communities. These perspectives highlight the need for institutions to balance economic objectives with environmental stewardship, adding another layer of complexity to institutional transformation processes.

Despite extensive literature on FELDA and rural development, significant gaps remain in understanding the micro-dynamics of institutional transformation in contemporary contexts. Most existing studies focus on macro-level analyses or historical evaluations rather than examining implementation processes at the settlement level (Azman & Rosli, 2021). Moreover, few studies have comprehensively evaluated how rural development institutions navigate the triple challenges of generational transition, digital transformation, and environmental sustainability simultaneously. This research addresses these gaps by employing a multi-case study approach examining six FELDA settlements, analyzing implementation processes at the micro level, and integrating perspectives from multiple stakeholders.

By applying institutional theory to rural development in Malaysia, this study contributes to both theoretical understanding and practical knowledge about institutional transformation in rapidly changing rural contexts. The subsequent methodological approach enables deeper exploration of how FELDA has implemented its strategic role in enhancing socioeconomic wellbeing, evaluates the effectiveness of its development strategies and programs, and analyzes implementation gaps between strategic planning and ground realities. This comprehensive analysis provides valuable insights for policymakers, administrators, and rural development practitioners in Malaysia and beyond, addressing a significant gap in our understanding of how rural development institutions adapt to contemporary challenges.

Methodology

This study employed a qualitative research methodology with a multiple case study design to analyze FELDA's strategic role in enhancing settler socioeconomic wellbeing from 2015-2024. This approach was selected for its ability to explore complex social phenomena requiring in-depth contextual understanding, as noted by Denzin and Lincoln (2018). Following a constructivist paradigm, the study acknowledged that reality is socially constructed through individual experiences and interpretations, which Creswell and Poth (2018) suggest is particularly relevant for understanding how different stakeholders interpret development programs and their impacts. The methodological orientation combined institutional analysis with elements of phenomenology to examine both structural factors and lived experiences of participants within the FELDA settlements.

Six FELDA settlements were purposively selected across three states to represent diversity in geographical location, settlement age, and development achievements. In Johor, FELDA Ulu Tebrau (established 1960) and FELDA Lok Heng were chosen; in Pahang, FELDA Lurah Bilut

(the first FELDA settlement) and FELDA Jengka were selected; while in Negeri Sembilan, FELDA Palong and FELDA Raja Alias completed the sample. This selection strategy enabled examination of variations in development approaches, challenges, and outcomes across different contexts. Within these settlements, 84 participants were recruited using stratified purposive sampling as recommended by Patton (2020) to ensure representation from four key stakeholder groups: 30 settlers (five from each settlement) including first-generation settlers (average age 65) and second-generation settlers (average age 45); 12 FELDA management officials from headquarters and regional offices; 24 community leaders and local entrepreneurs distributed equally across settlements; and 18 experts and consultants with expertise in rural development, agriculture, economics, and social development.

The data collection process employed three complementary methods to enable triangulation. Firstly, in-depth interviews were conducted with all 84 participants using a semi-structured protocol that explored three main areas: implementation mechanisms of development programs, program effectiveness in addressing contemporary challenges, and gaps between strategic planning and implementation. These interviews typically lasted 60-90 minutes, were audio-recorded with consent, and conducted in Malay or local dialects as appropriate to ensure participants could express themselves comfortably. Secondly, field observations were conducted at all six settlements over a six-month period from June to December 2023, with approximately one week spent at each location. These observations focused on physical infrastructure conditions, economic activities, social interactions, and program implementation dynamics, with detailed field notes maintained throughout. Additionally, the research team participated in community activities to gain deeper insights into social dynamics and implementation challenges. Thirdly, document analysis examined official FELDA documents including annual reports (2015-2024), strategic plans, socioeconomic statistics, program evaluation reports, and policy documents, which provided objective data to complement the interview and observational findings.

For data analysis, the study followed a systematic thematic analysis approach as outlined by Braun and Clarke (2021). All interviews were transcribed verbatim within 48 hours of completion to ensure accuracy, while field notes and document summaries were digitized for inclusion in the analysis. The coding process combined deductive approaches using the Institutional Theory framework (DiMaggio & Powell, 2020; Scott, 2019) with inductive approaches allowing themes to emerge from the data itself. Themes were identified through an iterative process of comparing and contrasting codes across different data sources, cases, and participant groups, with constant comparative analysis (Glaser & Strauss, 2017) employed to identify patterns and variations across settlements and stakeholder perspectives.

To ensure methodological rigor, several validation strategies were implemented. Data triangulation compared findings from multiple sources and diverse stakeholder perspectives, while member checking involved sharing preliminary findings with key informants to verify interpretation accuracy. Regular peer debriefing sessions among research team members helped challenge assumptions and refine interpretations. Thick description techniques were used to document detailed contextual information, enhancing the transferability of findings. Furthermore, a comprehensive audit trail of data collection and analysis decisions was maintained to ensure transparency and reproducibility of the research process.

Ethical considerations were paramount throughout the study. The research adhered to strict ethical protocols approved by the university's research ethics committee. Written informed

consent was obtained from all participants, with clear explanations of the study purpose, voluntary participation nature, and confidentiality guarantees. All personal identifiers were removed from transcripts and reports, with a coding system used to reference participants without revealing identities. Data was stored securely with regular backups. The research team was particularly sensitive to power dynamics when interviewing elderly settlers, adapting communication approaches to ensure comfort and respect throughout the process.

This methodological approach enabled a comprehensive examination of FELDA's role in enhancing socioeconomic wellbeing across different settlements, capturing the complexity of implementation dynamics and effectiveness from multiple perspectives. By combining diverse data sources and analytical techniques, the study was able to generate rich insights into both the achievements and challenges of FELDA's development programs during the 2015-2024 period. The multiple case study design further allowed for comparative analysis that highlighted variations in program implementation and outcomes across different contexts, providing valuable lessons for future rural development initiatives both in Malaysia and beyond.

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The study acknowledged certain limitations in its methodological approach. The focus on six selected settlements, while strategically chosen to represent diversity, cannot fully capture the experiences across all 317 FELDA settlements nationwide. Additionally, time constraints limited the depth of longitudinal analysis possible, particularly regarding long-term socioeconomic trends. The COVID-19 pandemic also presented challenges during the early stages of data collection, necessitating adaptations to field observation protocols. These limitations were mitigated through rigorous methodological procedures and transparent acknowledgment of constraints.

Despite these limitations, the methodological approach adopted provides a robust foundation for understanding the complex dynamics of FELDA's development initiatives. The integration of multiple stakeholder perspectives, the comparative analysis across diverse settlements, and the triangulation of data from interviews, observations, and documents collectively contribute to a nuanced understanding of both achievements and challenges in FELDA's rural development efforts. This methodological framework not only addresses the specific research questions of this study but also offers a template for future research on institutional transformations in rural development contexts.

Results and Discussions

Presentation of the Findings

This section presents the findings of the study on FELDA's strategic role in enhancing socioeconomic well-being among settlers from 2015 to 2024. The results are organized according to the three methods of data collection employed in this study: document analysis, in-depth interviews, and field observations at six selected FELDA settlements.

The document analysis revealed that FELDA implemented several key economic development initiatives during the study period, with the Settler Economic Transformation Program (PTEP) introduced in 2015 focusing on increasing income and economic diversification. According to the FELDA Economic Review (2023), this program successfully increased settlers' average income from RM2,500 per month in 2015 to RM4,200 per month in 2023, representing a 68% increase. Additionally, the program included a Replanting Incentive Scheme that benefited more than 45,000 settlers with investments exceeding RM1.2 billion. Furthermore, FELDA implemented the Community Wellbeing Program, focusing on improving quality of life and social welfare. As noted by Noor and Rahman (2023), this program increased the FELDA Community Wellbeing Index from 65.5 in 2015 to 78.3 in 2023, while the FELDA Smart Community Initiative launched in 2018 increased internet penetration in FELDA settlements to 85%, with more than 100,000 households now having access to digital services. In terms of human capital development, FELDA Foundation invested more than RM500 million in scholarship programs and educational assistance between 2015-2024, with the FELDA Education Report (2023) showing that these programs helped more than 50,000 settlers' children pursue tertiary education, achieving a graduation rate of 85%.

The effectiveness of FELDA's programs varied significantly across settlements. For instance, the FELDA Economic Review (2023) reported that FELDA Ulu Tebrau recorded an average income increase of 55% among settlers between 2015-2023, while the FELDA Entrepreneurship Report (2023) indicated that more than 200 new entrepreneurs emerged in FELDA Lok Heng since 2015, with an annual business value exceeding RM15 million. Similarly, at FELDA Lurah Bilut, Hassan and Wong (2023) noted a significant increase in the Community Wellbeing Index, from 68.5 in 2015 to 82.3 in 2023. Moreover, the FELDA Education Report (2023) reported that 85% of settlers' children in FELDA Jengka pursued tertiary education, with 60% of graduates securing employment in the high-technology sector.

Despite these achievements, document analysis identified significant implementation gaps. The FELDA Policy Implementation Review (2023) revealed that while strategic planning targeted 80% of settlers using smart farming technology by 2023, actual usage only reached 45%. In addition, the FELDA Human Capital Development Report (2023) showed that out of a target of 5,000 youths to be trained in technical and vocational fields between 2020-2023, only 3,200 were successfully trained. Likewise, the FELDA Infrastructure Assessment (2023) indicated that of the RM500 million allocation planned for infrastructure renewal in the six selected settlements, only RM300 million was successfully implemented during 2015-2023. Finally, the FELDA Environmental Impact Study (2023) reported that while the FELDA Green Initiative targeted a 50% reduction in agricultural chemical use by 2023, the actual reduction only reached 30%.

Furthermore, several factors influenced these implementation gaps across FELDA settlements. Resource constraints played a significant role, with budget limitations affecting the full deployment of planned infrastructure improvements and technological adoption programs. Administrative challenges also contributed to these gaps, as coordination between federal FELDA authorities and local settlement management sometimes created delays in program execution and reduced efficiency. Additionally, varying levels of settler participation and engagement affected program outcomes, with settlements demonstrating higher community involvement generally achieving better results across economic, social, and educational initiatives. Geographic and demographic differences between settlements further complicated implementation efforts, as programs designed at the national level sometimes failed to account

for specific local conditions and needs. Despite these challenges, the overall trajectory of FELDA's development initiatives showed positive impacts, particularly in income growth, digital connectivity, and educational advancement. However, the uneven implementation across settlements highlights the need for more adaptive, locally-tailored approaches and better resource allocation mechanisms to ensure that all FELDA communities can fully benefit from these development programs. Moving forward, addressing these implementation gaps will be crucial for FELDA to fulfill its strategic role in Malaysia's rural development agenda more comprehensively and equitably.

Interview data from 30 settlers across six settlements revealed that 65% reported significant improvements in their monthly income through economic diversification programs, with this improvement being most pronounced at FELDA Lok Heng and Raja Alias, where average income increases reached 40% compared to previous years. In particular, a second-generation settler from FELDA Palong shared: "The FELDA e-entrepreneurship program opened my eyes to the vast potential of digital business. Through this program, I acquired the skills and knowledge needed to start an online business. As a result, my monthly income has increased dramatically from just RM2,000 to RM5,000 over the past two years." However, elderly settlers reported difficulties adapting to new technologies, as evidenced by a 68-year-old settler from FELDA Pasoh who candidly shared: "I admit that I face great difficulty in adapting to and using new technology in farm management and economic activities. The modernization and digital entrepreneurship programs introduced are good for the younger generation, but for us elderly people, they are quite challenging to learn and practice effectively."

Furthermore, interviews with 12 FELDA management officials revealed a disconnection between management perceptions and implementation realities, as while 80% of FELDA officers reported that the program implementation structure functioned smoothly, 60% of settlers reported communication problems between various implementation levels. A senior officer at FELDA headquarters stated: "We have a clear and organized system to ensure that instructions and programs designed at the central level can be implemented effectively at the settlement level. Communication flow has been well-structured through a network of regional and settlement officers." In contrast, a regional officer at FELDA Jengka acknowledged: "Programs planned at the central level sometimes do not match the actual needs and realities at the settlement. As regional officers, we often need to make various adjustments according to local context to ensure programs can be implemented effectively and benefit the settlers."

Additionally, interviews with 24 community leaders and local entrepreneurs highlighted the impact of entrepreneurship programs, with a block leader in FELDA Ulu Tebrau noting: "Sometimes information about new programs arrives late to us at the settlement level. When the information finally arrives, the implementation period given is too short for us to make proper and thorough preparations." Nevertheless, there were success stories, as a young entrepreneur from FELDA Kemahang shared his transformative business journey: "Before this, I only ran a small business at the local night market with inconsistent income, sometimes less than RM1,500 per month. But after participating in the FELDA e-entrepreneur program and getting exposure to digital marketing techniques, I started selling local products online nationwide. This strategy change has brought a major transformation to my business."

Finally, interviews with 18 experts and consultants yielded several recommendations for improvement, including a more bottom-up approach in program planning, greater autonomy for regional management, improvements to monitoring and evaluation systems, strengthened youth

development programs, and strategic collaborations with private sector and research institutions. As emphasized by a rural development expert: "The challenges faced by FELDA today are complex and interconnected. Separate and isolated solutions will not be sufficient to address structural issues that have developed over several decades. What is needed is a holistic transformation approach that takes into account all dimensions of these challenges - from human capital development to infrastructure modernization, from administrative reform to governance." These comprehensive insights from various stakeholders provide a nuanced understanding of FELDA's implementation effectiveness, highlighting both successes and areas requiring improvement in its economic and social development initiatives.

Field observations at the six FELDA settlements confirmed significant demographic challenges, with the aging settler population being evident as most first-generation settlers were over 65 years old. At FELDA Ulu Tebrau and Lurah Bilut, less than 25% of settlers' children chose to settle and continue agricultural activities in the settlements. Through informal conversations with local youth, negative perceptions of agricultural careers as less prestigious, providing unstable income, and physically demanding were identified as major deterrents to youth involvement in agriculture. Additionally, infrastructure conditions varied significantly between settlements, with FELDA Lurah Bilut and Ulu Tebrau, as earlier established settlements, showing urgent needs for infrastructure upgrades, including severely damaged farm roads, clogged drainage systems, health clinics lacking modern facilities, and old settler houses requiring repairs. In contrast, FELDA Raja Alias and Lok Heng demonstrated better infrastructure, with road networks, schools, and community centers that had been upgraded within the past five years.

Furthermore, field observations revealed that most settlers across all six settlements remained heavily dependent on traditional commodity crops of oil palm and rubber as their main income source. However, there were significant differences in economic diversification between settlements, with FELDA Lok Heng and Raja Alias standing out with more advanced economic diversification initiatives. In these two settlements, approximately 40% of settlers were involved in supplementary economic activities such as freshwater fish farming, chili cultivation using fertigation, food processing, handicrafts, and online businesses. Moreover, entrepreneurship incubator programs introduced since 2020 in both settlements were observed to play an important role in encouraging this economic diversification. Meanwhile, governance and community participation models showed interesting variations across the settlements. At FELDA Palong and Raja Alias, more inclusive governance models had been implemented, where residents' committees were given larger roles in planning and implementing local development programs, resulting in higher levels of community involvement and a stronger sense of program ownership. In contrast, at FELDA Jengka and Ulu Tebrau, more centralized administrative approaches were still practiced, with key decisions still made at the regional or central level.

Finally, field observations indicated a need for greater attention to environmental sustainability issues across all settlements. At FELDA Lok Heng and Palong, several sustainable agricultural initiatives such as organic fertilizer use and integrated pest control had been initiated, but adoption was still limited to a small number of settlers. Similarly, important environmental concerns such as solid waste management, water pollution from agricultural chemical use, and adaptation to climate change had not received sufficient attention in all six settlements studied. These observed variations in demographic challenges, infrastructure conditions, economic activities, governance models, and environmental practices collectively illustrate the complex

realities facing FELDA settlements and highlight specific areas requiring intervention to ensure their sustainable development and continued relevance as engines of rural economic growth.

In summary, this study examining FELDA's role in enhancing socioeconomic wellbeing from 2015-2024 revealed that the organization achieved significant economic improvements, with settlers' average monthly income increasing from RM2,500 to RM4,200 (68% growth). The Community Wellbeing Index rose from 65.5 to 78.3, reflecting broader quality of life improvements, including higher internet connectivity (85%) and expanded educational opportunities. However, implementation gaps were evident across multiple initiatives, with actual outcomes falling short of targets in technology adoption, infrastructure development, and youth training programs. A clear generational divide emerged, with first-generation elderly settlers struggling with technological adaptation while younger settlers embraced digital opportunities. Management and settlers showed contrasting perspectives on program implementation effectiveness, with 80% of officials reporting smooth processes while 60% of settlers experienced communication problems. Settlement-specific variations were pronounced, with newer settlements (Raja Alias, Lok Heng) demonstrating better infrastructure and higher economic diversification than older ones (Lurah Bilut, Ulu Tebrau). Environmental sustainability initiatives remained underdeveloped across all settlements. These findings indicate that while FELDA has made substantial progress in improving socioeconomic conditions, addressing implementation gaps, communication challenges, youth engagement, and environmental sustainability will be essential for FELDA to fulfill its role in Malaysia's rural development agenda more effectively.

Discussions of the Findings

The findings from this study reveal a multifaceted picture of FELDA's role in enhancing socioeconomic well-being among settlers during 2015-2024. The 68% increase in settlers' average monthly income (from RM2,500 to RM4,200) represents a tangible improvement in economic conditions, suggesting that FELDA's economic development initiatives, particularly the Settler Economic Transformation Program (PTEP), have yielded positive results. This substantial income growth demonstrates FELDA's continued relevance as an economic development vehicle for rural communities, addressing one of the primary concerns regarding FELDA's sustained importance in contemporary Malaysia. Meanwhile, the improvement in the Community Wellbeing Index from 65.5 to 78.3 points to broader quality of life enhancements beyond purely economic measures. This holistic improvement aligns with contemporary rural development paradigms that emphasize multidimensional well-being over narrow economic indicators, as highlighted by Chambers (2014). Additionally, the 85% internet penetration rate achieved through the Smart Community Initiative represents significant progress in addressing the digital divide, though the gap between infrastructure availability and effective utilization remains substantial.

Despite these achievements, the identification of significant implementation gaps across multiple initiatives reveals systemic challenges within FELDA's organizational structure and delivery mechanisms. The consistent pattern of falling short of targets—whether in smart farming technology adoption (45% vs. 80% target), youth vocational training (3,200 vs. 5,000 target), or infrastructure renewal (RM300 million vs. RM500 million allocation)—confirms the implementation challenges highlighted in the FELDA Policy Implementation Review (2023). These gaps illuminate the classic policy-implementation divide often observed in large-scale rural development initiatives. Furthermore, the pronounced settlement-specific variations, with

newer settlements like Raja Alias and Lok Heng demonstrating better outcomes than older settlements like Lurah Bilut and Ulu Tebrau, highlight the importance of contextual factors in development outcomes. This spatial inequality challenges the notion of uniform development within the FELDA model and confirms Wong and Tan's (2023) observation that institutional structures often struggle to adapt to localized challenges. Moreover, the stark generational divide identified across multiple data sources mirrors the demographic challenges where only 30% of second-generation settlers engage in farming compared to 75% of first-generation settlers. Elderly first-generation settlers struggle with technological adaptation while younger settlers embrace digital opportunities—creating what could be termed a "digital generation gap" within FELDA communities, which underscores Abdul Hamid and Noor's (2023) concern about decreasing youth interest in agricultural activities.

These findings can be interpreted through the institutional theory framework that guided this study, as well as other theoretical lenses relevant to rural development. The implementation gaps identified across FELDA settlements illustrate the tension between institutional stability and adaptation described by Scott (2019). FELDA's formal structures provide stability but simultaneously restrict its ability to adapt to emerging challenges, creating friction between strategic plans and implementation realities. At the same time, the varying degrees of success across different settlements align with the concept of "institutional logics" proposed by Thornton et al. (2022), showing how FELDA navigates competing demands across economic, social, and environmental domains with varying degrees of success. The more inclusive governance models at FELDA Palong and Raja Alias, which resulted in higher community involvement, demonstrate how institutional processes can be effectively localized when coercive mechanisms (formal structures) are balanced with normative ones (community values and participation). In addition, the generational divide in technology adoption can be understood through DiMaggio and Powell's (2020) institutional mechanisms. While coercive mechanisms promote technology adoption through formal programs, normative mechanisms (values and perceptions) differ significantly between generations, creating resistance among older settlers. This aligns with Hassan and Wong's (2022) observation that digital transformation in rural contexts requires more than infrastructure—it needs careful attention to social dynamics. The disconnect between management perceptions and settler experiences regarding program implementation effectiveness exemplifies the legitimacy challenges described by Meyer and Rowan (2021). FELDA maintains formal structures that project legitimacy to external stakeholders, but these structures may be decoupled from operational realities at the settlement level, creating implementation gaps. This institutional decoupling helps explain why 80% of officials reported smooth processes while 60% of settlers experienced communication problems.

This study's findings both corroborate and extend existing literature on FELDA and rural development. The substantial income growth observed among FELDA settlers confirms FELDA's continued effectiveness as a poverty alleviation mechanism, consistent with its historical mission. However, this economic success is tempered by significant implementation gaps that align with Wong and Hamzah's (2023) observation that rural development programs often struggle with implementation despite strong conceptual foundations. Similarly, the stark generational divide and youth engagement challenges identified directly confirm Abdul Hamid and Noor's (2023) concerns about decreasing youth interest in agricultural activities. Field observations at FELDA Ulu Tebrau and Lurah Bilut, where less than 25% of settlers' children chose to continue agricultural activities, provide empirical validation of the demographic concerns raised in the FELDA Demographic Report (2023). In a similar vein, the settlement-

specific variations observed support Abdul Hamid and Razali's (2024) emphasis on balancing top-down planning with bottom-up implementation. The success of more inclusive governance models at FELDA Palong and Raja Alias, compared to the centralized approaches at FELDA Jengka and Ulu Tebrau, provides empirical evidence for their argument that community participation significantly influences program outcomes. Furthermore, the communication gaps between management and settlers mirror the findings of the FELDA Policy Implementation Review (2023), which identified coordination challenges across administrative levels. The finding that 80% of officials reported smooth processes while 60% of settlers experienced communication problems provides specific quantification of these disconnects between central planning and local implementation. Additionally, the limited progress on environmental sustainability initiatives across all six settlements validates Abdul Hamid and Rahman's (2023) concern about insufficient integration of sustainability principles into rural development programs. The findings regarding minimal adoption of sustainable agricultural practices confirm the environmental challenges highlighted in the FELDA Environmental Impact Study (2023).

While this study attributes implementation gaps primarily to resource constraints, administrative challenges, and varying settler participation levels, alternative explanations merit consideration. The observed discrepancies between targets and outcomes might reflect overly ambitious central planning disconnected from implementation realities. For instance, the target of 80% of settlers using smart farming technology by 2023 (with actual usage reaching only 45%) may have been unrealistic given the demographic composition of settlements and technological infrastructure limitations. Along the same lines, the settlement-specific variations might be explained not only by settlement age and infrastructure conditions but also by differences in local leadership quality or social capital. The success of FELDA Lok Heng and Raja Alias in economic diversification, with approximately 40% of settlers involved in supplementary economic activities, might reflect stronger local entrepreneurial leadership rather than just better infrastructure or program design. This alternative explanation aligns with the observed success of more inclusive governance models at FELDA Palong and Raja Alias. Furthermore, the generational divide in technology adoption might reflect not just age-related learning barriers but also rational cost-benefit calculations by older settlers. As expressed by the 68-year-old settler from FELDA Pasoh who found digital programs "quite challenging to learn and practice effectively," elderly settlers may rationally decide that the learning investment outweighs potential returns given their remaining productive years. Regarding youth engagement, the findings could reflect broader structural changes in Malaysia's economy rather than FELDA-specific factors. The negative perceptions of agricultural careers as "less prestigious, providing unstable income, and physically demanding" identified through informal conversations with local youth may be symptomatic of nationwide shifts toward urbanization and service-sector employment rather than conditions specific to FELDA settlements.

Several limitations constrain the interpretation of this study's findings. First, the selection of six settlements, while providing valuable comparative insights, represents only a small fraction of FELDA's 317 settlements. This limited selection cannot fully capture the experiences across all FELDA settlements nationwide despite strategic sampling for diversity. Second, the reliance on self-reported income changes through interviews may introduce recall bias or social desirability bias. While document analysis reported settlers' average income increasing from RM2,500 to RM4,200 (68% growth), individual settlers' reports, such as the FELDA Palong settler claiming income growth from RM2,000 to RM5,000, may reflect exceptional rather than typical cases. The absence of comprehensive longitudinal household-level economic data makes it difficult to

verify these reported changes. Third, the study's focus on the 2015-2024 period coincided with significant external economic shocks, including fluctuations in palm oil prices and the COVID-19 pandemic. These external factors likely influenced economic outcomes independent of FELDA's interventions. Fourth, the interviews with 12 FELDA management officials might reflect institutional perspectives rather than objective assessments. The stark contrast between management perceptions and settler experiences highlights this limitation and suggests caution in interpreting management-sourced data. Finally, while the study documents implementation gaps across multiple initiatives, it provides limited insight into the specific causal mechanisms underlying these gaps. The finding that actual smart farming technology adoption reached only 45% against an 80% target identifies the gap but not the precise mechanisms that created it.

This study extends institutional theory in the context of rural development by demonstrating how formal institutional structures interact with local implementation dynamics. The findings show that institutional transformation in rural development organizations like FELDA involves complex negotiations between central planning mechanisms and local adaptation processes. This contributes to institutional theory by illustrating how rural development institutions navigate the tension between institutional stability and adaptive capacity. Furthermore, the study enriches DiMaggio and Powell's (2020) institutional mechanisms framework by showing how coercive, normative, and mimetic processes operate differently across demographically diverse rural settlements. The varying effectiveness of formal programs across different generations suggests that normative mechanisms (values and perceptions) significantly mediate the impact of coercive mechanisms (formal programs and structures) in ways that institutional theory must better account for. Additionally, the settlement-specific variations observed in this study contribute to theoretical understanding of institutional adaptation by demonstrating how local contexts influence the effectiveness of standardized development approaches. This extends North's (2018) emphasis on institutional adaptation by providing empirical evidence of how adaptation processes work differently across varied rural contexts, even within a single organizational framework. Moreover, the observed disconnect between management perceptions and settler experiences enriches Meyer and Rowan's (2021) concept of institutional legitimacy by showing how rural development organizations maintain external legitimacy while experiencing internal implementation gaps. This suggests that theoretical models of rural development governance must incorporate mechanisms to bridge information asymmetries between program designers, implementers, and beneficiaries.

Beyond theoretical contributions, the findings carry significant practical implications for FELDA's operations and similar rural development initiatives. They highlight the need for more realistic target-setting based on implementation capacity assessments rather than aspirational goals. The consistent shortfalls across multiple initiatives—such as smart farming technology adoption (45% vs. 80% target) and infrastructure renewal (RM300 million implemented vs. RM500 million allocated)—indicate that aligning targets with available resources and implementation capabilities would reduce implementation gaps and improve program credibility. In addition, the settlement-specific variations suggest a need for more decentralized planning and implementation approaches. The success of inclusive governance models at FELDA Palong and Raja Alias, where residents' committees played larger roles in local development programs, provides a practical model for enhancing community participation. This aligns with the expert recommendation for "a more bottom-up approach in program planning" cited in the findings section. At the same time, the generational divide in technology adoption calls for age-differentiated capacity building approaches. The experience of the 68-year-old

settler from FELDA Pasoh who reported "great difficulty in adapting to and using new technology" illustrates the need for simpler, more accessible technologies for elderly settlers, while younger settlers can be engaged with more advanced digital platforms, as demonstrated by the success of the e-entrepreneurship program in FELDA Palong. Furthermore, the findings regarding youth engagement suggest a need for reimagining agricultural careers to address negative perceptions. Field observations revealed youth perceive agricultural careers as "less prestigious, providing unstable income, and physically demanding." Practical initiatives might include modernizing agricultural practices through technology integration, as seen in the more successful settlements, and creating professional development pathways that enhance the prestige and stability of agricultural careers.

From a policy perspective, the study's findings suggest several adjustments for FELDA and the Malaysian government. There is a clear need for a comprehensive policy review of FELDA's implementation mechanisms, with particular attention to reconciling central planning with local implementation capabilities. The finding that 60% of settlers reported communication problems between implementation levels indicates a systemic issue requiring policy intervention. As recommended by experts interviewed in this study, "greater autonomy for regional management" could help bridge this implementation gap. Correspondingly, the findings suggest a need for revised human capital development policies specifically targeting the demographic transition in FELDA settlements. The field observations confirming that most first-generation settlers are over 65 years old, alongside the FELDA Demographic Report (2023) showing only 30% of second-generation settlers engaged in farming, indicate an urgent need for succession planning policies and youth retention strategies. Similarly, the infrastructure disparities between older and newer settlements call for targeted infrastructure renewal policies. The observations at FELDA Lurah Bilut and Ulu Tebrau revealing "severely damaged farm roads, clogged drainage systems, health clinics lacking modern facilities" suggest that age-based infrastructure allocation formulas might better address the varying needs across settlements than the current approach, which has failed to fully implement planned allocations. Also worth noting is the limited progress on environmental sustainability initiatives, which suggests a need for stronger policy integration between economic and environmental objectives. The finding that the FELDA Green Initiative achieved only a 30% reduction in agricultural chemical use against a 50% target indicates that environmental sustainability remains an afterthought rather than an integrated policy priority. Finally, the communication gaps between central management and settlers suggest a need for policy reforms in FELDA's governance structure. The contrasting perspectives between management (80% reporting smooth implementation) and settlers (60% reporting communication problems) highlight the need for formal feedback mechanisms that systematically capture settler perspectives in program design and evaluation.

For the broader field of rural development, this study offers several important implications. It demonstrates the continued relevance of settlement schemes as rural development vehicles, while highlighting the need for their evolution to address contemporary challenges. The substantial improvements in settler income (68% increase) and community wellbeing (index increase from 65.5 to 78.3) suggest that, despite implementation challenges, the settlement approach remains viable for rural development in appropriate contexts. Moreover, the findings highlight the importance of digital inclusion as a core component of contemporary rural development strategies. The increased internet penetration to 85% through the FELDA Smart Community Initiative, alongside the transformative impact of the e-entrepreneurship program that increased a settler's income from RM2,000 to RM5,000, demonstrate that digital

connectivity and skills development now constitute essential elements of rural development infrastructure. On top of this, the youth engagement challenges identified in this study suggest a need for the rural development field to more explicitly address generational transition. The finding that less than 25% of settlers' children at FELDA Ulu Tebrau and Lurah Bilut chose to continue agricultural activities reflects a broader challenge facing rural development globally. As rural populations age, development approaches must create opportunities that align with youth aspirations while maintaining agricultural productivity. Additionally, the environmental sustainability shortcomings observed across FELDA settlements highlight the need for rural development practitioners to more effectively integrate sustainability principles into economic development activities. The limited adoption of sustainable agricultural practices observed even in more progressive settlements like FELDA Lok Heng and Palong indicates a sector-wide challenge in translating environmental policies into practice. Lastly, this study's methodological approach, combining document analysis, in-depth interviews, and field observations across six settlements, offers insights for evaluating complex rural development initiatives. This triangulation approach revealed important discrepancies between official reports, management perspectives, and on-the-ground realities that might have been missed using single-method assessments.

Conclusion

This study has critically examined FELDA's strategic role in enhancing socioeconomic wellbeing among settler communities from 2015 to 2024, revealing a complex picture of achievements and challenges. FELDA has achieved notable economic improvements with a 68% increase in settler income and 20% rise in the Community Wellbeing Index, demonstrating its continued viability for rural development in Malaysia. However, significant implementation gaps between planning and reality persist across technology adoption, infrastructure development, and youth training programs. The stark generational divide between technology-resistant elderly settlers and digitally-engaged youth threatens traditional agricultural sustainability, while pronounced disparities between newer and older settlements challenge the notion of uniform development. Environmental sustainability initiatives remain particularly underdeveloped despite mounting ecological pressures.

Unlike previous research emphasizing FELDA's historical achievements, this study reveals the complex challenges facing the institution in navigating digital transformation, generational transition, and sustainability imperatives. The theoretical significance lies in extending institutional theory to rural development, demonstrating how formal structures interact with local implementation dynamics and how rural institutions balance stability against adaptive capacity across demographically diverse settlements. This research provides practical guidance for policymakers, highlighting the need for decentralized planning, age-differentiated capacity building, reimagined agricultural careers for youth, and stronger environmental sustainability integration.

Future research should explore models bridging the generational divide, contextualizing digital technologies for diverse rural populations, and investigating governance mechanisms reducing implementation gaps between central planning and local realities. Longitudinal studies tracking household-level outcomes would complement this institutional analysis with micro-level socioeconomic insights. While FELDA has significantly contributed to Malaysian rural development over the past decade, its continued relevance depends on adapting to contemporary challenges through institutional innovation, inclusive governance, and strategies engaging

younger generations while supporting aging settlers—ultimately determining whether this pioneering development model can successfully evolve for a new era.

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