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Socioeconomic Impacts of Land Acquisition for the Yogyakarta Toll Road: Using Inferential Statistics

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Abstract
Rapid infrastructure development in the transportation sector has significant implications for land acquisition, including residential and agricultural land. The conversion of agricultural land poses challenges by reducing green open spaces and disrupting the socioeconomic conditions of affected communities, particularly farming households. This study examines the socioeconomic consequences of land acquisition in the Yogyakarta toll road construction, focusing on changes in employment, agricultural productivity, and asset ownership. Data were collected through a structured questionnaire survey targeting affected households, selected using purposive sampling. The analysis employs descriptive statistics to identify patterns and trends. This study also performs correlation tests to examine relationships between variables and communities' willingness to release land. The findings indicate that 22% of respondents lost their jobs due to land acquisition, and 26% have not yet secured alternative employment, highlighting economic adaptation challenges. Additionally, 44% of respondents reported that their acquired land was agricultural. It leads to a decrease in productivity and income for farmers. Land conversion has also altered asset ownership, particularly for farmers whose livelihoods depended on their land. The study contributes empirical evidence on the socioeconomic impacts of large-scale infrastructure projects, emphasizing employment challenges, land use changes, and financial stability. The correlation analysis reveals a weak but statistically significant relationship between improved road access and residents' willingness to relinquish land. These findings provide valuable insights for policymakers, infrastructure planners, and stakeholders to develop mitigation strategies, including job creation programs, financial support for displaced farmers, and policies ensuring sustainable land management and community engagement in future land acquisition processes.

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Introduction

In Indonesia's Medium-Term Development Plan (RPJMN) for 2015–2019, which continued into 2020–2024, one of the government's major agendas was infrastructure development policy. This initiative was achieved under *Proyek Strategis Nasional* (PSN) or National Strategic Projects. The seriousness of this policy is evident from Presidential Regulation (*Perpres*) No. 58 of 2018, which amended Perpres No. 3 of 2016 concerning the Acceleration of National Strategic Projects Implementation. According to the regulation, National Strategic Projects are initiatives implemented by the central government, local governments, and/or business entities. National Strategic Projects are considered strategic for fostering growth and ensuring equitable development to enhance social welfare and national development. The scope of PSN includes infrastructure development across various sectors, such as toll and non-toll road construction, intercity rail systems, urban transit, airport revitalization and expansion, strategic port development, and the one-million-housing program. It also encompasses energy-related projects like upgrades to oil refineries, gas pipelines, LPG terminals, and waste-to-energy facilities. PSN also addresses water management through potable water systems, communal wastewater projects, flood control embankments, and cross-border facilities like border crossing posts (PLBN). Other critical components include broadband expansion, science and technology infrastructure, priority industrial zones, tourism, smelters, and agricultural and marine initiatives. Infrastructure development under PSN is pivotal in addressing Indonesia's growing economic and social demands, creating a foundation for sustainable growth, and bridging regional disparities (Mediana, 2023).

Infrastructure development policies significantly impact society, regions, or nations. These impacts can be classified into positive and negative outcomes. A study in Semarang City on road infrastructure development found several positive effects, including faster travel times between districts, smoother intercity travel, and increased land prices around infrastructure developments. It reduced urban population density due to more equitable infrastructure distribution in suburban areas (Hartatik et al., 2022).

Infrastructure development is a critical issue for countries, mainly due to urbanization. Urbanization increases the demand for infrastructure, such as transportation, to improve accessibility and mobility for communities and connect production areas with commodity markets (Huang et al., 2024). Land policy and infrastructure facilities affect living standards and urban

development patterns. Infrastructure stimulates economic and social activities and reflects economic vitality (Shrestha et al., 2022). As cities grow, the demand for supporting infrastructure and services to sustain economic activities increases, including energy, telecommunications, transportation, water supply, and sanitation. Transportation infrastructure encompasses airports, railways, roads, waterways, and ports.

Infrastructure enhances economic productivity through efficiency and affordable services. It reduces household transportation, energy, water, sanitation, and communication costs. Lower transportation costs decrease location price disparities (Elburz et al., 2025; Jia et al., 2024). Infrastructure also benefits people with low incomes by increasing the value of their assets. For example, improved rural transportation boosts agricultural land values, better roads facilitate school access, reliable electricity enhances study time and computer usage for learning, and improved water and sanitation reduce child mortality. Thus, infrastructure development helps reduce income inequality (Siatan et al., 2024; Tuan & Lan, 2025). Additionally, infrastructure policies significantly impact land-use changes, directly and indirectly. Economic development policies often indirectly affect land-use changes, while land management policies have direct impacts (Chen et al., 2020; Li et al., 2022).

Large-scale infrastructure development accelerates urbanization and agricultural land conversion (Bonye et al., 2021). Urbanization drives new developments in local environments to facilitate mobility and migration of the population, impacting social, environmental, and economic aspects (Marzuki & Jais, 2020). Infrastructure policies that result in agricultural land conversion lead to decreased agricultural land, reduced agricultural productivity, and declining food security in affected regions. It also impacts household economic, social, and environmental conditions (Li et al., 2024). Research on the YIA airport infrastructure development in Yogyakarta Province showed that the policy reduced agricultural land, decreased agricultural productivity, changed farmers' livelihoods, and lowered household income. This project also affected food security, making farming households more vulnerable to food insecurity due to land-use conversion (Nurpita et al., 2017).

Yogyakarta Special Region (DIY) is one of the provinces in Indonesia that enforces sustainable agricultural land protection, as evidenced by Regional Regulation No. 10 of 2011. However, despite the regulation, according to BPS DIY, the annual average rate of agricultural land conversion in DIY remained high at 0.4% per year as of 2020. The conversion of agricultural land into non-agricultural uses also leads to declining agricultural production, job losses for agricultural workers (e.g., farm labourers and rice mill workers), and the loss of investments in agricultural infrastructure such as

irrigation systems. Data from the DIY Regional Development Planning Agency (BAPPEDA) in 2020 highlights the province's annual increase in land-use change.

Table 1. Division of the Solo–Yogyakarta–Yogyakarta International Airport (YIA) Kulon Progo Toll Road Sections

Section	Connector	The length of the Road
I	Kartosuro to Purwomartani	42,37 km
II	Purwomartani to Gamping	23,43 km
III	Gamping to Purworejo	30,77 km

Source: KemenPUPR, 2023

Table 1 explains the toll road sections from Solo-Yogyakarta-YIA. The first section of the toll road connects the Trans-Java network between Semarang and Solo. The presence of this first section is expected to positively impact the economy of the "golden triangle" region that includes Yogyakarta, Solo, and Semarang, commonly referred to as Joglosemar. Meanwhile, the second and third sections of the toll road are also expected to contribute positively to smoother traffic flow and create a multiplier effect for economic growth in the surrounding areas, particularly in the Borobudur tourist area (PricewaterhouseCoopers, 2024).

The construction policy for the Solo–Yogyakarta–Yogyakarta International Airport (YIA) Kulon Progo toll road, especially in Purwomartani Village, has led to the conversion of agricultural land into non-agricultural use (Utami et al., 2024). It indicates a potential reduction in agricultural land, decreased agricultural productivity, lower household income for farming families, and weakened food security for the affected farming households. Additionally, it is anticipated to impact the economic conditions of the local community.

The massive infrastructure development policies, particularly in the transportation sector, including toll roads, affect land acquisition. The acquired land is not limited to residential or yard areas but includes agricultural land. One significant issue is the impact of land-use conversion on socioeconomic lives. This study examines the social and economic consequences of land-use conversion resulting from the Yogyakarta toll road construction on affected communities.

This research aims to fill these gaps by examining the socioeconomic impacts of toll road construction in Yogyakarta, focusing on employment, agricultural productivity, and community resilience. This study utilizes primary data from affected households, which provides a detailed analysis of how land acquisition affects livelihoods and the adaptation strategies employed by displaced communities. While previous studies have offered broad analyses of infrastructure impacts, this research contributes a novel localized perspective, emphasizing actionable insights to support

equitable infrastructure development. This study offers valuable recommendations for policymakers to ensure that infrastructure projects drive economic growth and protect vulnerable populations' welfare by addressing these issues.

Literature Review

Infrastructure development plays a crucial role in shaping regional economic growth, making its impacts a subject of extensive empirical analysis. Previous studies examined the impact of infrastructure development on inclusive economic growth in North Sumatra Province by using economic and infrastructure indicators in the region. The study employed a simultaneous equation model using the Two Stage Least Square (TSLS) method. Data has been obtained from regencies/cities in North Sumatra Province from 2013 to 2017. The results indicated that road infrastructure development positively impacts employment opportunities and reduces income inequality in North Sumatra Province (Panjaitan et al., 2020).

The impact of transportation, energy, and ICT infrastructure development policies on economic growth is investigated using the tourism-led growth in the United States. The study introduces a new perspective for future research by exploring the impact of the fourth industrial revolution (Industry 4.0), particularly in the United States. The study verifies this argument by investigating how Information and Communication Technologies (ICTs) affect the link between Foreign Direct Investment (FDI) and GDP. The findings confirm a link between the Industry 4.0 era and the role of ICTs, which drive significant changes in lifestyles and productivity. These changes have accelerated technological advancements, surpassing the progress of previous industrial revolutions. Based on the empirical results, the study offers policy recommendations concerning the role of natural resources, emerging technologies, and tourism in influencing US GDP while highlighting the positive impact of ICTs on FDI in the context of Industry 4.0. (Adedoyin et al., 2020).

Urbanization is a consequence of population growth. The increasing population contributes to expanding urban areas as cities attempt to accommodate more people and enhance urban facilities. One of the effects of urbanization is that infrastructure development policies often require additional land, which sometimes leads to the conversion of agricultural land, historically a primary livelihood source for farmers, into non-agricultural land to meet urban development needs. A study examined the relationship between urban sprawl and its impact on Malaysia's agricultural productivity and food security. This research employed a qualitative exploratory approach and a systematic literature review supported by secondary data. Data collection involved relevant literature, including archives, academic writings, and publications. These data were analyzed and grouped using Atlas.ti 8 software,

focusing on thematic analysis. The results indicated that urbanization affects Malaysia's food self-sufficiency and security, particularly in agricultural production. Urban sprawl in Malaysia has led to the conversion of agricultural land, reducing agricultural output and thereby threatening food security (Marzuki & Jais, 2020).

Infrastructure development also impacts regional food security, as studied using panel data from 31 Chinese provinces from 1990 to 2021. This study employs the entropy method to evaluate the level of urban-rural integration and food security, with their interrelationships explored through a fixed effects model. In addition, the study also conducts thorough robustness and endogeneity tests, as well as detailed heterogeneity analysis across different dimensions and regions. The results highlight the important role of urban-rural integration in enhancing food security, especially in spatial, social, and economic aspects, although challenges remain in ecological integration. Moreover, the effect of urban-rural integration on food security varies across food-producing regions, showing significant benefits in primary production and distribution centers while having little effect in regions with balanced food production. These findings emphasize the need to fine-tune urban-rural integration policies to strengthen food security. Therefore, it is important to consider the distribution of resources and the stage of development in each region to ensure food security and promote sustainable agriculture when designing agricultural policies for different regions (Chen & Yu, 2024).

This research addresses these gaps by focusing on the socioeconomic effects of toll road construction in Yogyakarta, providing localized insights into employment disruptions, agricultural productivity losses, and community adaptation strategies. Using primary data from affected households reveals critical details about the challenges and opportunities encountered by displaced individuals, which are underrepresented in the existing studies. The key contribution of this study lies in its empirical analysis of land acquisition impacts, particularly in quantifying job losses, agricultural land reduction, and shifts in asset ownership, which provide a foundation for evidence-based policymaking. Furthermore, the findings highlight the importance of effective government interventions, equitable compensation practices, and personalized support for vulnerable populations. These offer valuable guidance for minimizing socioeconomic disruptions in future infrastructure projects. This study is particularly urgent as it aligns with national development goals. Furthermore, it also emphasizes the need for policies that balance infrastructure growth with equitable socioeconomic outcomes.

Method

The data utilized in this research includes both secondary and primary data. Primary data is

directly collected and processed from the source by an organization or researcher. Meanwhile, secondary data consists of data that an organization gathers from external sources already prepared for analysis (Hidayati, 2020). This study involves a sample of 100 households selected using purposive sampling. Purposive sampling is the deliberate selection of respondents based on specific criteria relevant to the research objectives or the issue under investigation (Hidayati, 2020). In this case, the inclusion criteria were households impacted by land acquisition due to the Yogyakarta toll road construction.

This study employs descriptive statistics to analyze the data. Descriptive statistics is a range of techniques used to collect, organize, and summarize data in tables and graphs. This method helps illustrate the relationships and variations among the variables in the study (Nuryadi et al., 2017). Furthermore, descriptive statistics can be extended to analyze central tendency (mean, median, mode), measures of variability (range, variance, standard deviation), and frequency distributions, offering insights into patterns within the data (Nuryadi et al., 2017). Descriptive statistics enhance understanding of relationships, trends, and variations among variables, making the data more interpretable by presenting data in tabular or graphical formats. This study also integrates multiple data sources to strengthen the findings. Secondary data might include government reports, previous surveys, or existing studies on similar land acquisition projects, which provide context and comparisons. This approach ensures a comprehensive understanding of the impacts of land acquisition on the local community, combined with the primary data gathered directly from the affected households.

This study utilizes the triangulation method that integrates both qualitative and quantitative data, which can further enhance the reliability and validity of the findings (Creswell & Poth, 2023). This study aims to capture a nuanced understanding of the specific effects of toll road construction on households by employing both purposive sampling and descriptive statistical analysis. It also contributes to broader discussions on land acquisition and its socioeconomic consequences.

Result and Discussion

All respondents own the land that was acquired for the toll road construction. It indicates that all respondents who filled out the questionnaire were individuals whose land was acquired due to the toll road construction. The findings in Figure 1 indicate a high level of acceptance among the affected communities, with 92% demonstrating awareness and willingness to release their land for the toll road construction. It suggests that most of the community understands the necessity and potential benefits of the project, possibly due to effective communication and outreach efforts by

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relevant authorities. However, 8% of respondents were unwilling to highlight critical land acquisition challenges. Their reluctance primarily stems from emotional and historical attachments to the land, as it holds significant familial and cultural value as inherited property. Additionally, concerns over perceived inadequacy or unfairness in compensation show the potential gaps in the valuation process or negotiation transparency. Tailored strategies are required to address these issues, such as offering personalized consultations to resolve emotional concerns and ensuring fair and transparent compensation practices. These steps could improve community satisfaction and mitigate resistance to future land acquisition attempts.

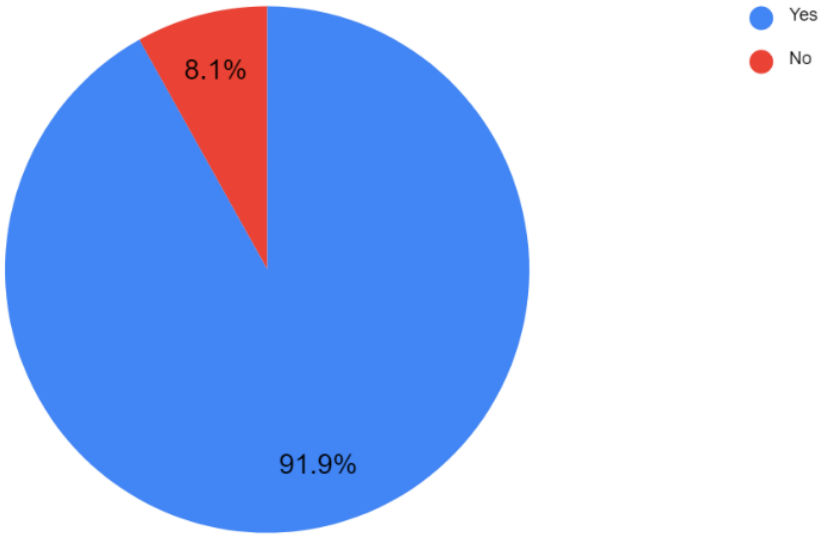

Fig 1. Willingness of the Affected Community to Release land for the Yogyakarta Toll Road construction

The findings align with previous research on land acquisition acceptance based on Figure 1. For example, Bonye et al. (2021) found that effective stakeholder engagement and transparent compensation processes significantly influence community willingness to release land for infrastructure projects. Similarly, Chen et al. (2020) highlighted that communities with high awareness of a project's long-term benefits tend to demonstrate greater acceptance, particularly when authorities implement clear communication strategies. However, Tuan and Lan (2025) emphasized that emotional and historical attachments to land can be major barriers to voluntary land

release. Thus, it requires tailored approaches such as culturally sensitive negotiations and enhanced compensation mechanisms.

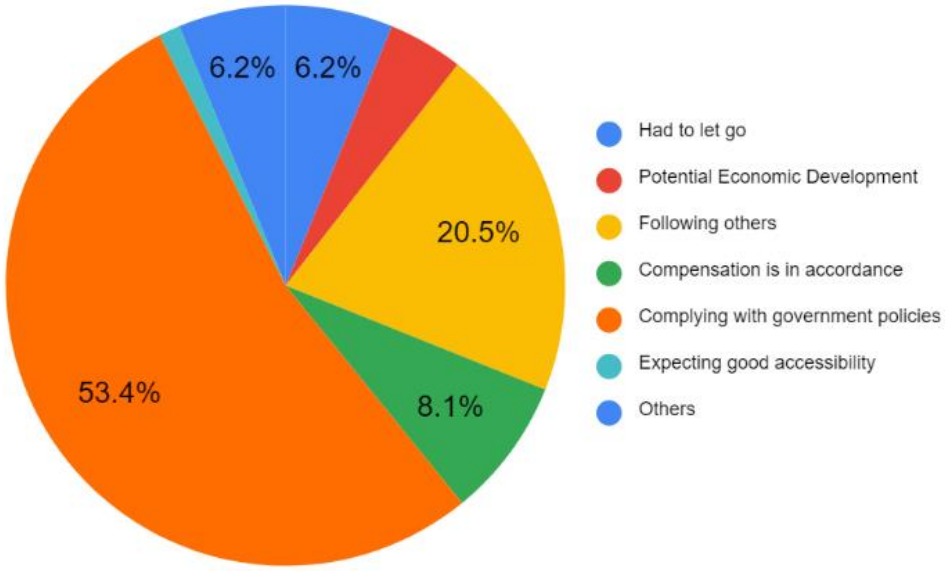

Fig 2. Factors Influencing the Affected Community's Willingness to Release Land for The Yogyakarta Toll Road Construction

The results highlight in Figure 2 that more than half of the respondents (54%) released their land primarily out of compliance with government policies. It indicates a strong adherence to authority and trust in governmental decisions, which is significant in facilitating land acquisition. Such compliance may reflect the perceived legitimacy of the project and effective communication strategies implemented by the government. Diverse practical and personal considerations drove the willingness of the remaining respondents. Some were influenced by social conformity, as they followed the actions of others in the community. Others were motivated by satisfactory compensation, suggesting that fair land valuation is crucial in garnering support. Additionally, anticipating potential economic development and enhanced accessibility in the future were key factors, reflecting residents' optimism about the project's long-term benefits. These insights underscore the importance of maintaining transparent communication and fair compensation

practices and showcasing the tangible benefits of infrastructure projects to encourage broader community support.

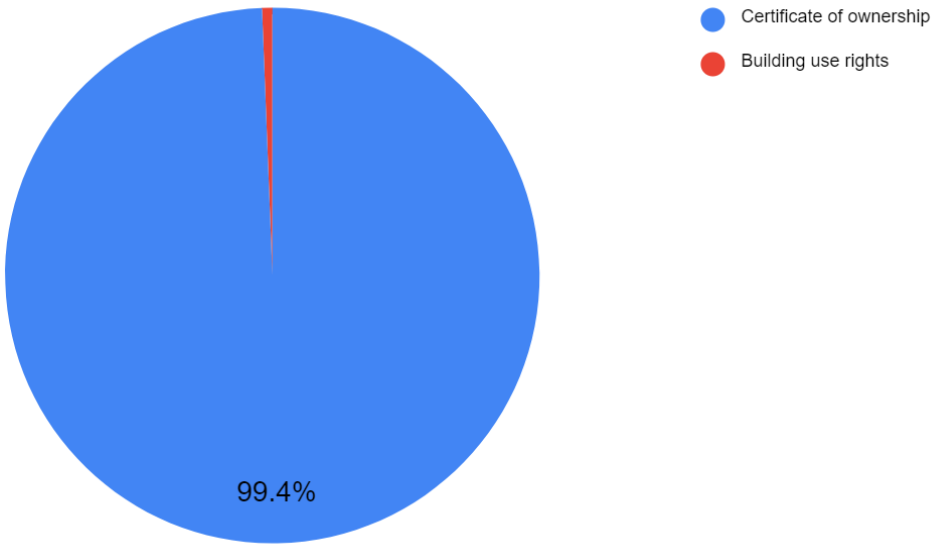

Fig 3. The Ownership Status of The Released Land for Yogyakarta Toll Road Construction

Figure 3 indicates that the majority of the acquired land for the construction of the Yogyakarta Toll Road (99%) had a Certificate of Ownership (SHM) status, signifying fully owned private land. It reflects the dominance of SHM land in the affected areas, highlighting a straightforward legal framework for the acquisition process. The clear ownership rights likely facilitated negotiations and compensation arrangements, as SHM is the highest form of land ownership under Indonesian law, granting the holder complete control over the property. In contrast, only 1% of the land had a Right to Build (HGB) status, which typically involves limited rights for construction and use over a set period, often linked to leases or business operations. Acquiring HGB land may involve additional coordination with private and state entities, though the minimal proportion of such land in this case suggests limited complexity. These results underline the importance of clear and formalized land ownership documentation in expediting land acquisition processes for infrastructure projects. The findings of this study also align with research by Firmansyah (2014). It suggests that clear and formalized land ownership documentation, such as SHM, is essential to ensure legal certainty and protect individual rights, expediting infrastructure projects' land acquisition process.

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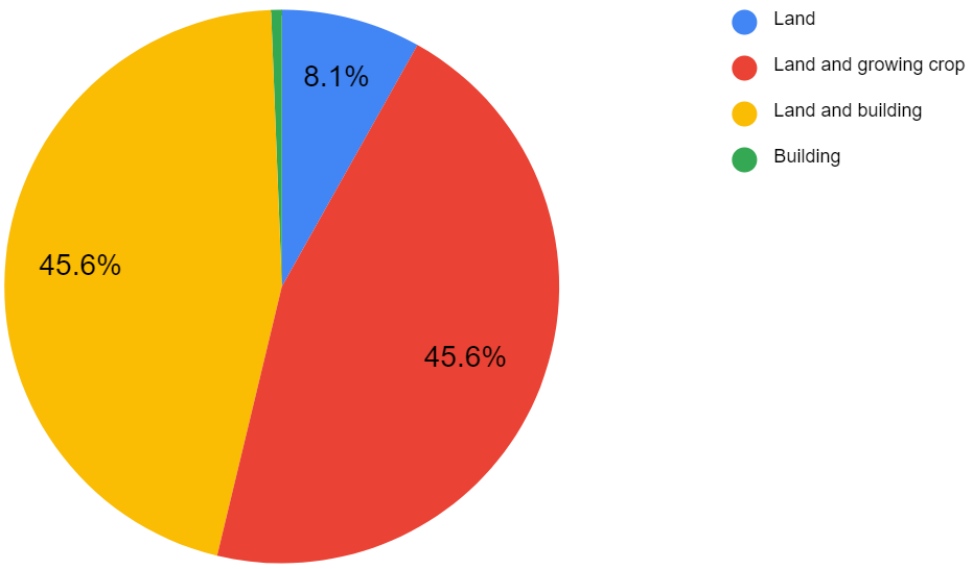

Fig. 4 Types of Acquired Assets for the Construction of the Yogyakarta Toll Road

Based on Figure 4, the findings highlight that nearly half of the acquired land (46%) consisted of land with buildings. It indicates that the toll road development directly affected residential or commercial properties. It suggests significant changes to affected residents' living conditions and livelihoods, requiring adequate compensation and relocation strategies to minimize disruptions. Similarly, acquiring agricultural land (45%) underscores the toll road's impact on local farming communities. It could result in the displacement of agricultural activities and a potential loss of income for farmers, particularly if the acquired land were their primary source of livelihood. These results emphasize the need for comprehensive mitigation measures. It includes fair compensation, support for economic transition, and assistance finding alternative farming opportunities or housing solutions for those affected. Proper planning and community engagement are crucial to address these diverse needs and ensure the project's long-term social and economic sustainability. These outcomes also correspond with the research by Treviño-Lozano (2022) that examines the conditions under which community engagement in urban infrastructure public-private partnerships can be transformational and create social value. It argues that a transformational approach to community engagement, which includes fair compensation and support for economic transitions, is essential for the social sustainability of infrastructure projects.

Next, Figure 5 shows a diverse range of land areas affected by the Yogyakarta Toll Road project. The largest proportion of respondents (53%) had land areas ranging from 100 to 500 square meters,

suggesting that a significant number of respondents were affected by moderate-sized land acquisitions. This group likely represents a mix of residential and small-scale commercial properties. The second largest group (25%) had land areas between 500 and 1000 square meters, indicating that these respondents may have been owners of larger plots, potentially including larger residential properties or small agricultural holdings.

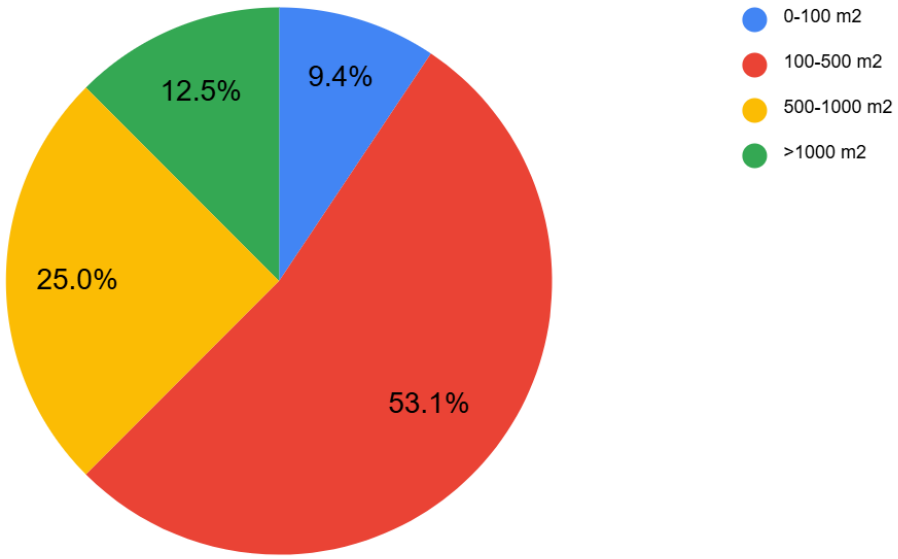

Fig. 5. Land Area of Residents Acquired for the Yogyakarta Toll Road Construction

Interestingly, Figure 5 also shows that only 9% of respondents had land areas smaller than 100 square meters, which may represent smaller residential plots or urban areas. In contrast, 13% of respondents owned land larger than 1000 square meters, which could be agricultural or larger residential plots. This variation in land sizes highlights the diverse impact of the project across different community members, with the need for tailored compensation and support strategies depending on the size and type of land affected.

Figure 6 reveals that most acquisitions (55%) involved only the land, not including buildings. It suggests that the project primarily impacted open land or properties without significant structures, including agricultural land or vacant plots. These acquisitions may have had less immediate disruption to residents since they did not involve displacing buildings or businesses. The second-largest group (28%) had buildings with areas ranging from 100 to 500 square meters, indicating that a significant portion of the affected landowners had residential or *smaller* commercial buildings.

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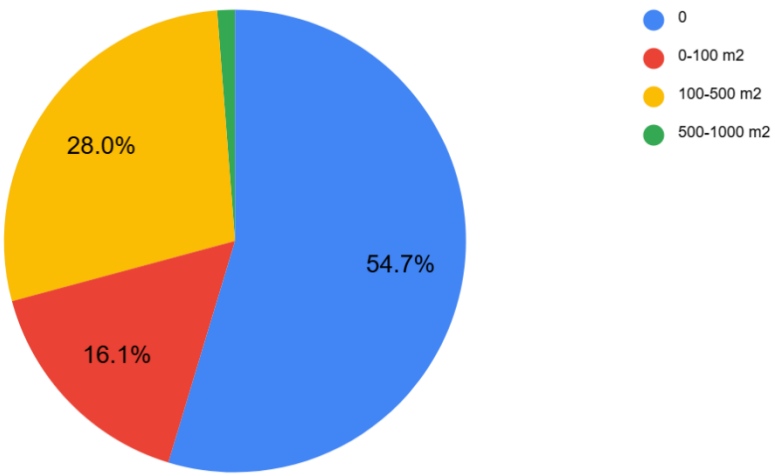

Fig. 6. Acquired Building Area for the Yogyakarta Toll Road Construction

These acquisitions likely affected the community more, requiring relocation or compensation for the land and the structures. The smallest group (1%) had buildings between 500 and 1000 square meters. It likely represents larger residential or commercial properties. Although this group represents a small percentage of respondents, the impact on these landowners could be significant due to the size of the buildings and potential disruptions to their businesses or livelihoods. Overall, the findings suggest that while most acquisitions were limited to land, a notable portion involved buildings. The impacts vary depending on the size and nature of the structures affected. Tailored compensation and relocation assistance are essential to address the diverse needs of the affected community.

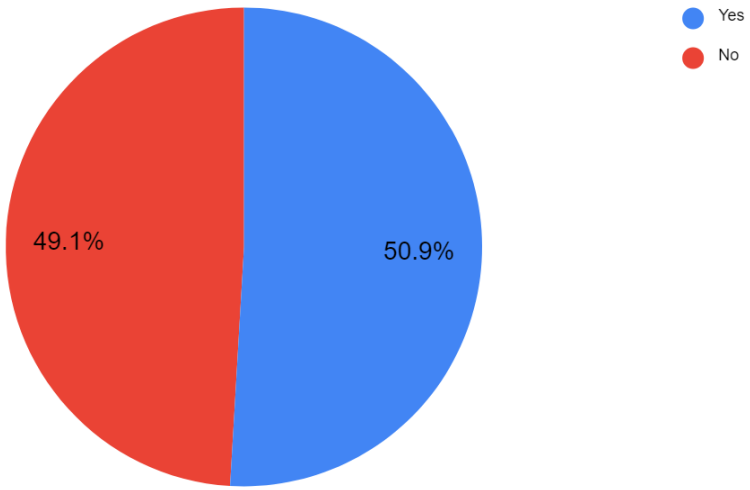

Fig. 7. Farming Occupation in the Affected Community by the Yogyakarta Toll Road Construction

Figure 7 indicates that a significant portion of the affected households (51%) rely on farming or livestock breeding as a primary occupation. It suggests that agriculture and livestock are key sources of livelihood for many of the community impacted by the Yogyakarta Toll Road construction. It highlights the importance of addressing the needs of these families, particularly in terms of compensation or relocation support that considers the potential disruptions to their agricultural activities. On the other hand, 49% of respondents do not have family members working in agriculture or livestock breeding. It implies that their livelihoods may be related to other sectors, such as commerce or services. For these households, the impact of land acquisition might be less direct on farming. However, it could still affect their community involvement or property values. Overall, the findings emphasize the need for tailored support, especially for agricultural families, who may face more significant challenges if their land is acquired for toll road construction.

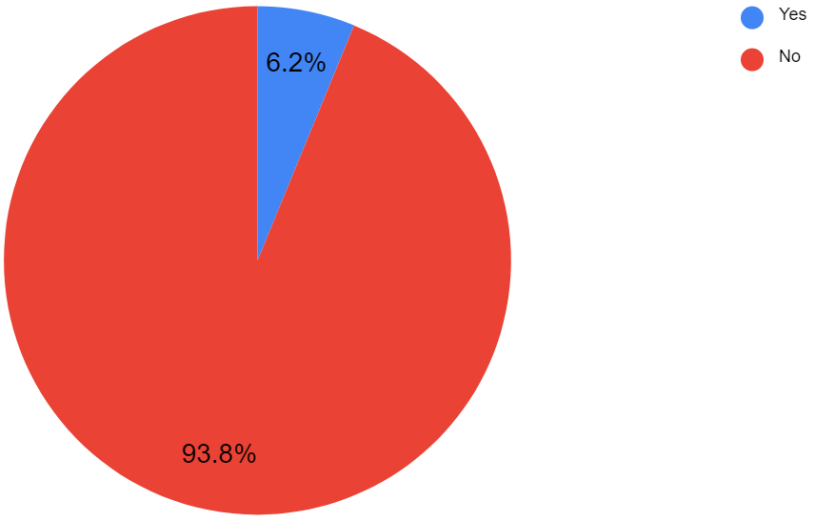

Fig 8. Successors in Farming Occupations Among Community Affected by the Yogyakarta Toll Road Construction

Figure 8 reveals that most respondents (94%) do not have children interested in continuing the family tradition of farming or livestock breeding. It suggests a possible generational shift away from agricultural work. It is likely due to changing economic opportunities, urbanization, or the need for alternative careers that offer better financial stability or less physical work. On the other hand, 6% of respondents indicated that their children are interested in pursuing farming or livestock breeding. Even though it shows a small proportion, it highlights that agriculture remains a valued profession passed on to some families. This group may place high importance on maintaining agricultural practices, potentially due to cultural or economic reasons related to farming and livestock

breeding. Overall, the data suggests that while agriculture plays a crucial role in many affected families' lives, farming's future as a family occupation may face challenges due to fewer young people interested in continuing these traditional careers. This shift could affect long-term agricultural sustainability in the region, leading to the need for programs that encourage agricultural innovation and make the profession more attractive to younger generations.

The Impact of Road Accessibility on the Willingness of the Community to Relinquish Land for Acquisition

The correlation analysis was conducted to determine the relationship between road accessibility (X1) and the community's willingness to release land for the Yogyakarta Toll Road (Y). However, while the discussion references a correlation model, the explicit model equation is not shown. The model representing this relationship can be stated as follows:

$$Y = \beta_0 + \beta_1 X_1 + \in \quad (1)$$

Where Y represents the benefits expected from the successful toll road construction, X_1 denotes the availability of good road access influencing the decision to release land for acquisition, β_0 is the intercept, β_1 is the coefficient of correlation, and ϵ is the error term.

Table 2. Correlation Result

	Y	X_1
Y	1	
X_1	0.24	1
Pr = 0 .002		

Table 2 shows the correlation test results between road accessibility and the community's willingness to release land for the Yogyakarta Toll Road construction. Note that Y is the benefit to be received if the toll road construction is successful, and X_1 is the availability of good road access as a factor in the decision to relinquish land for acquisition. This study conducted a Chi-Square test using the Stata-17 software to analyze the relationship between the benefits of toll road construction and good road access as a factor in the decision to relinquish land for acquisition. The hypotheses tested are as follows: Null Hypothesis (H0), which states that a relationship exists between the benefits to be received if the toll road construction is successful. Good road access is a factor in the decision to release land for acquisition. The Alternative Hypothesis (H1) states that there is no relationship between the benefits of toll road construction and good road access as a factor in the decision to

release land for acquisition. In this test, the decision criteria are: H0 is accepted if the p-value (Pr) is ≤ 0.05, and H1 is accepted if the p-value (Pr) is > 0.05.

This statistical analysis helps to determine whether good road access significantly influences the willingness of the community to release their land for the toll road project. The Chi-Square test results show a p-value of 0.002 less than the 0.05 threshold. It indicates a statistically significant relationship between benefits to be received from the toll road construction and the presence of good road access as a factor in the decision to relinquish land for acquisition. It means that the null hypothesis (H0), which posits that there is a relationship between these two factors, is accepted.

However, the correlation coefficient of 24% indicates a weak positive relationship between the two variables. It suggests that while road access improvement slightly increases the perceived benefits from the toll road project, the correlation is not strong enough to make road access a dominant factor in the decision-making process. Essentially, although better road access may influence the willingness of the community to release land, it is only a minor factor compared to other potential determinants, such as compensation, economic development, or personal circumstances. In conclusion, while good road access does have some impact on the community's decision to release land for the toll road, it is not a major determinant. It indicates that other factors likely play a more significant role in influencing their willingness to participate in the land acquisition process. Previous research has also found that while improved road access may have a positive effect, it is not the primary determinant in community decisions to release land for infrastructure projects. Comprehensive approaches addressing compensation, economic development, and community involvement are more effective in facilitating land acquisition processes (Rohman et al., 2017; Hidayat et al., 2019).

The Impact of Land Use Change on Job Losses Among Communities Affected by Land Acquisition for the Yogyakarta Toll Road Construction

The acquired land for the toll road construction project consists of various properties. The data revealed that the most common form of land acquisition is land and buildings, which are 49% of the cases. Surprisingly, the second most common type of land acquisition is land with crops and vegetation, which makes up 44%. It indicates that the toll road construction has a significant impact on the agricultural and plantation land of the community. Thus, it is important to consider the effects

on the agricultural sector in the planning and implementation of the project (Salim & Faoziyah, 2022; Marlina et al., 2021; Makbul et al., 2022).

Figure 9 highlights the connection between land use and the livelihoods of the affected community, with many relying on the land for farming, trading, livestock breeding, and other occupations. A deeper economic analysis is necessary to understand the broader consequences for the local economy, while these statistics show the proportion of land and other resources impacted. The community displacement and the conversion of agricultural or commercial land into infrastructure often lead to job losses, reduced agricultural productivity, and disruptions in local business activities. The 22% of respondents who reported job losses highlight a significant shift in economic livelihoods, as land-use changes directly affect income-generating activities tied to farming, livestock breeding, and other rural occupations.

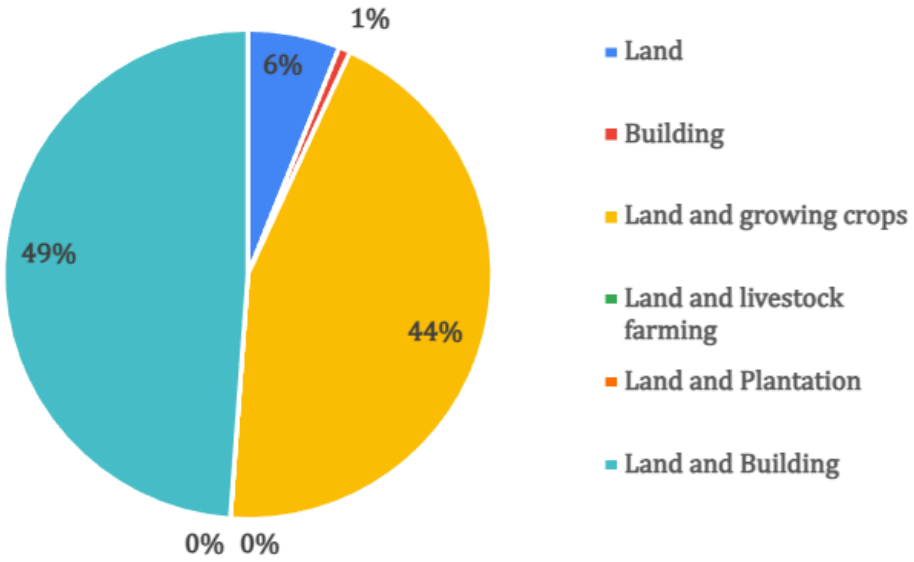

Figure 9. Types of Assets of the Community Whose Land Was Acquired for the Yogyakarta Toll Road Construction

Figure 9 illustrates how infrastructure projects can lead to structural economic adjustments, reducing employment opportunities in traditional sectors. Additionally, the loss of productive land affects food supply chains and regional markets, which may increase dependency on external resources or create inflation pressures. It is critical to examine how compensation mechanisms, retraining programs, or policy interventions are implemented to mitigate these negative effects for a more comprehensive understanding. Linking the statistical outcomes of the survey to broader economic frameworks—such as the multiplier effect of infrastructure investments, land valuation changes, and shifts in labor market dynamics—can provide a clearer, more detailed picture of the

socioeconomic transformations induced by toll road construction (Arganata & Swasto, (2022); Mahdi et al., (2024); Andani et al., (2019)).

Next, Figure 10 explains that among the 22% of the affected community members who lost their jobs, 26% have not yet found replacement employment. However, the majority have found alternative sources of income. These individuals have started new businesses such as laundry services, printing shops, small retail stores, LPG gas stations, and hair salons. Additionally, some have purchased carts for rental or bought land for farming and livestock breeding. The other affected community members have opted to rent land from others, work as farm laborers, or increase the number of their livestock.

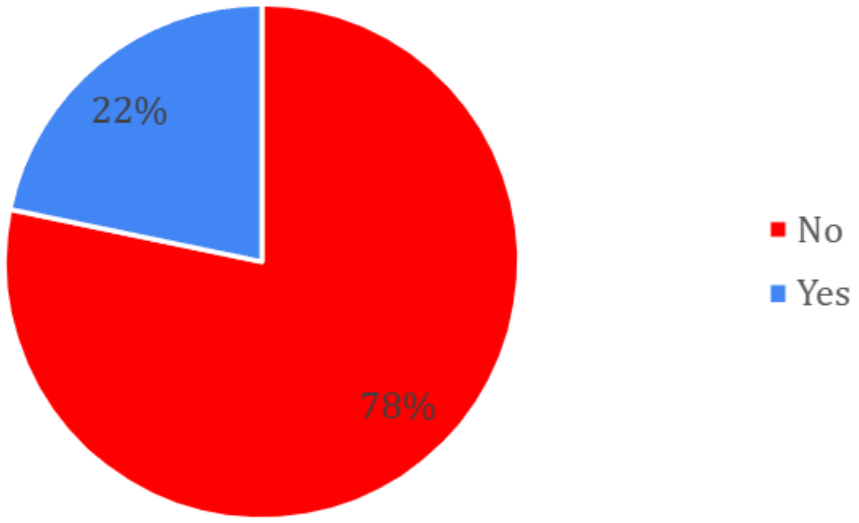

Figure 10. Employment Loss Status of the Community Whose Land Was Acquired for the Yogyakarta Toll Road Construction

These choices demonstrate the creativity and adaptability of the community in responding to economic challenges. They have created new opportunities by leveraging their existing resources and skills, reflecting a strong entrepreneurial spirit in the face of adversity. Despite losing their previous jobs, these individuals are finding ways to sustain their livelihoods, showing resilience and innovation in overcoming the economic disruption caused by land acquisition for the toll road project.

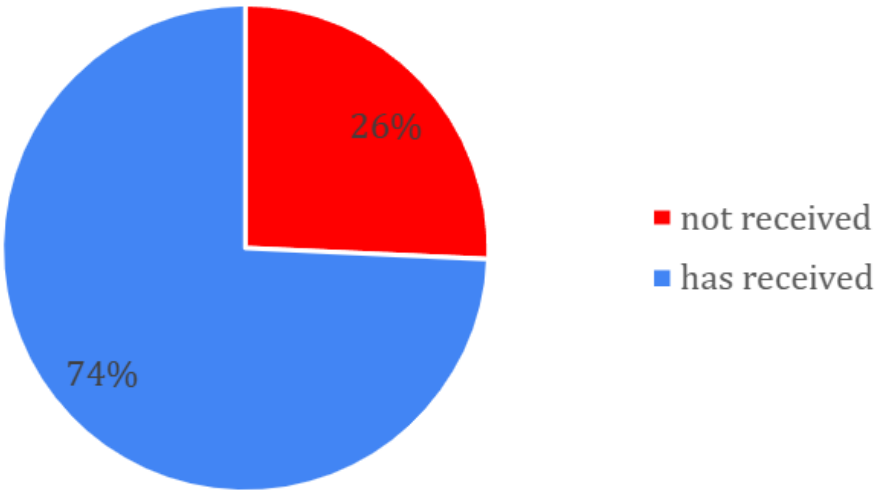

Fig. 11. Availability of Replacement Jobs

However, based on Figure 11, the remaining 26% who have not yet found new employment highlight a critical issue. Thus, the government should intervene to address the gap in job opportunities. The government should implement proactive steps to ensure that those who lost their livelihoods due to land acquisition have sufficient support, such as creating new employment opportunities or job training programs (Downing et al., 2021; Mchome & Nzoya, 2023). The long-term economic impact on these individuals could be adverse without such support. It potentially increases unemployment and social unrest (Kebede et al., 2021;Tadesse & Baye, 2024).

Conclusion

This study examines the socioeconomic impacts of land acquisition on the Yogyakarta toll road construction, highlighting employment challenges, agricultural land reduction, and changes in asset ownership. The findings reveal that 22% of the affected community lost their jobs, with 26% still unemployed, while 44% of respondents reported losing productive farmland, leading to decreased agricultural productivity and income. These changes underscore the broader socioeconomic consequences of large-scale infrastructure projects. This study contributes empirical evidence on land conversion effects, emphasizing the need for mitigation strategies. Policymakers should prioritize job creation, vocational training, financial assistance, and comprehensive impact assessments while ensuring active community engagement to support affected populations.

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