Analysis of the Impact of Toll Road Development on MSME Income: Case Study of Kampar Regency

Hidayat
Universitas Pasir Pengaraian; Riau, Indonesia
E-Mail: hidayatrangkuti86@gmail.com

Heffi Christya Rahayu
Universitas Pasir Pengaraian; Riau, Indonesia
E-Mail: heffirahayu@upp.ac.id

Muhammad Fajri
Universitas Pasir Pengaraian; Riau, Indonesia
E-Mail: mfajri5512@gmail.com

Roza Elfira
Universitas Pasir Pengaraian; Riau, Indonesia
E-Mail: roza.elfira5512@gmail.com

Hani Permata Dewi
Universitas Terbuka; Indonesia
E-Mail: Hnprmt@gmail.com

Febiana Gitya
Universitas Gadjah Mada; Yogyakarta, Indonesia
E-Mail: febigitya@gmail.com

Submitted:
MAY 2025

Accepted:
AUGUST 2025

ABSTRACT

Development is a demand of society to achieve progress and prosperity. This study aims to analyze the impact of toll road construction on the income of MSMEs in Kampar Regency. This study uses a quantitative approach with the data source in this study being primary data derived from questionnaire data collection with field observations. Observations were conducted using interview techniques with respondents from MSME actors who were directly affected by the construction of the Pekanbaru-Bangkinang Toll Road in Kampar Regency. This study analyzes how toll road construction affects accessibility and MSME income, using Structural Equation Modeling based on Partial Least Squares (SEM-PLS) to explore the causal relationship between variables. The results of the study indicate that while accessibility mediates the relationship between toll road construction and MSME income, the direct effect of toll road construction is statistically insignificant. These findings indicate that infrastructure alone will not provide optimal benefits for MSMEs without measures such as improving distribution networks and training. The recommendations given in this study are the creation of rest areas for MSMEs, strategic placement of toll exits, and the involvement.

Keywords*: Accessibility, Development Impact, Economic Performance, MSMEs Income, Toll Roads.*

JIMKES

Jurnal Ilmiah Manajemen Kesatuan
Vol. 13 No. 5, 2025
pp. 3827-3838
IBI Kesatuan
ISSN 2337 – 7860
E-ISSN 2721 – 169X
DOI: 10.37641/jimkes.v13i5.3464

ABSTRAK

Pembangunan adalah tuntutan masyarakat untuk mencapai kemajuan dan kemakmuran. Penelitian ini bertujuan untuk menganalisis dampak pembangunan jalan tol terhadap pendapatan UMKM di Kabupaten Kampar. Penelitian ini menggunakan pendekatan kuantitatif dengan sumber data dalam penelitian ini adalah data primer yang berasal dari pengumpulan data kuisioner dengan observasi lapangan. Observasi yang dilakukan menggunakan teknik wawancara dengan responden para pelaku UMKM yang terdampak langsung oleh pembangunan Jalan tol Pekanbaru-Bangkinang di Kabupaten Kampar. Studi ini menganalisis bagaimana pembangunan jalan tol memengaruhi aksesibilitas dan pendapatan UMKM, menggunakan Structural Equation Modeling berbasis Partial Least Squares (SEM-PLS) untuk mengeksplorasi hubungan kausal antar variabel. Hasil penelitian menunjukkan bahwa sementara aksesibilitas memediasi hubungan antara pembangunan jalan tol dan pendapatan UMKM, efek langsung dari pembangunan jalan tol secara statistik tidak signifikan. Temuan tersebut menunjukkan bahwa infrastruktur saja tidak akan memberikan manfaat optimal bagi UMKM tanpa disertai langkah-langkah seperti peningkatan jaringan distribusi dan pelatihan. Rekomendasi yang diberikan dalam penelitian ini yakni pembuatan rest area untuk UMKM, penempatan exit toll yang strategis, dan pelibatan UMKM dalam perencanaan proyek infrastruktur untuk meningkatkan kemampuan adaptasi dan kinerja ekonomi mereka..

***Kata kunci**: Aksesibilitas, Dampak Pembangunan, Jalan Tol, Kinerja Ekonomi, Pendapatan UMKM.*

INTRODUCTION

Development is a demand for society to achieve progress and prosperity. The main goal of development is to encourage economic growth by improving infrastructure, investment, and the availability of development funds in order to create jobs and reduce unemployment and poverty (Puspita et al., 2020). When the population increases, the needs also increase (Rochaida, 2016). One form of effort from the equitable development carried out by the government is infrastructure development (Kirana et al., 2019). The government has a role in meeting the needs of the community by striving for equitable distribution of infrastructure development (Loh & Kim, 2021; Saaida & Saaidah 2023). One form of infrastructure provided by the government is road construction.

Road infrastructure development, particularly toll roads, is vital for enhancing economic activities in Indonesia. Toll roads help alleviate congestion on main roads and facilitate the efficient distribution of goods and services, especially in rapidly developing areas (Wang et al., 2023; Shahrier et al., 2024; Mahdi et al., 2024). They can trigger significant changes in the social and economic conditions of local communities (Seddon et al., 2021; Raihan, 2023; Sena & Anondho, 2024). Social changes involve shifts in lifestyle, culture, and social systems, while economic changes focus on improving the quality of life. The construction of toll roads affects livelihood patterns, income, and social status (Siswanto et al., 2019). Additionally, toll road development is viewed as a strategic government investment, capable of creating employment opportunities, reducing transportation and production costs, promoting economic growth, and enhancing regional connectivity (Lembhe, 2024; Wahyuni et al., 2024).

Toll road development has positive effects, such as supporting regional economic equality, providing employment opportunities, and enhancing inter-regional connectivity. However, it also has negative impacts on social, cultural, environmental, and economic aspects (Khasanah et al., 2017). The construction often involves the acquisition of agricultural land, leading to the loss of land owned by residents (Song et al., 2016). This loss forces residents to change professions or lose their jobs (Indartini & Istiqaroh, 2015). Many residents experience a decline in income after their land is acquired for toll road construction (Irfan et al., 2021). The decline in income is primarily due to farmers needing to purchase replacement land at higher prices and smaller areas

than before (Nangoi et al., 2021). Despite these negative impacts, toll road construction can still boost the economy in exit toll areas and rest areas.

The construction of the Pekanbaru-Bangkinang toll road opens up opportunities for the growth of MSMEs. Ahmad (2022) and Wartono et al. (2023) explained that toll road construction provides benefits for regional economic growth. The existence of toll roads has the potential to contribute to regional economic development (Vadali, 2008). An area is industrially successful when it can create specialized production factors (Umasugi, 2018). The construction of the Trans Sumatra Toll Road (*Jalan Tol Trans Sumatra*/JTTS) has triggered new business growth, especially in the trade and financial services sector around the Bangkinang exit toll. The Pekanbaru-Bangkinang toll road, which will be completed in 2022 with a length of 31 km, connects the main economic corridors in Riau Province, including Kampar Regency and Rokan Hulu Regency.

The Pekanbaru-Bangkinang toll road aims to ease travel distance, and the distribution of goods should support economic growth. Although the toll road can increase sales of Pekanbaru MSME products, some MSMEs face obstacles in development, including a lack of effective promotion and marketing. Therefore, research on the impact of toll road construction on MSMEs in Kampar Regency needs to be carried out with the aim of analyzing the effect of toll road construction on MSME accessibility, the effect of accessibility on MSME income, the direct effect of toll road construction on MSME income and analyzing the mediating role of accessibility in the relationship between toll road construction and MSME income. This research is expected to enrich the literature on the impact of infrastructure on the MSME sector, particularly through the mediation approach in structural models. The study's results can provide valuable insights and input for stakeholders in determining MSME development policies that incorporate infrastructure development.

LITERATURE REVIEW

Micro, Small, and Medium Enterprises (MSMEs) Income

Tambunan in Putra Wicaksono (2021) and Suhirman and Aminy (2022) explains that MSMEs are independently established business units carried out by individuals or business entities in all economic sectors. Based on Government Regulation No. 7/2021, MSMEs are grouped into 3 business categorized based on the amount of capital required, namely micro businesses, small businesses, and medium businesses. According to Pererva et al. (2021) and Quyet and Phung (2023) in terms of activities, business types can be categorized into 3 groups: distribution, production, commercial. According to Setyawati (2018), Asraf et al. (2024), and Wasfika et al. (2024), MSMEs have a strategic role in accelerating change and improving people's lives, and becoming a forum for joint business activities between producers and consumers. In addition, MSMEs also contribute to income equality and foster new businesses based on science and technology.

Hypothesis Development

The definition of infrastructure generally refers to public facilities or goods. Infrastructure is divided into 2 groups, namely economic and social infrastructure. Economic infrastructure plays a very important role in promoting economic growth in a country. Infrastructure is defined as public facilities such as roads, bridges, and sewers (Mankiw, 2015). Transportation infrastructure is seen as social capital and the foundation of economic development because its existence plays a role in lowering transaction costs and promoting economic growth (Zhang et al., 2020). Haughwout (2001), argues that the existence of infrastructure has a significant contribution in encouraging the improvement of people's social welfare. With the improvement of infrastructure, productivity among producers can increase (Wylie, 1996).

In the context of toll road development, recent studies have shown that accessibility plays an important role in influencing the income of Micro, Small, and Medium Enterprises (MSMEs). Irfan et al. (2021) found that increasing accessibility via toll roads has a positive impact on MSME income, with the results highly dependent on the strategic

placement of toll gates and adequate supporting infrastructure. This study highlights that good accessibility can open up opportunities for MSMEs to reach broader markets and enhance their competitiveness.

In addition, Santoso et al. (2022) reported that increasing access to markets and resources can lead to a 20% increase in local MSME income. This finding suggests that accessibility not only contributes to increased income but also to the desire and growth of MSMEs in areas affected by toll road development. The importance of accessibility as a key factor in the relationship between toll road development and MSME income highlights the need for effective infrastructure planning. By prioritizing accessibility, the government and stakeholders can create a more supportive environment for MSMEs, thereby significantly improving their economic performance. Therefore, further research in this area is needed to understand more complex dynamics and to formulate better policies to support the growth of MSMEs in the era of rapid infrastructure development.

According to Fuadi and Nasrudin (2022), toll road infrastructure is a form of government service for its people. Toll road development has an impact on society, especially in areas that are crossed by toll roads (Ahmad, 2022). Toll road development also contributes to the economy through direct construction activities that arise because of investment in new toll road projects (Shatz et al., 2011). The presence of toll roads has a positive influence on economic growth, especially in the goods and services distribution service industry, which is useful in supporting economic growth and increasing equitable development and justice (Huda, 2010). Toll road construction aims to improve service efficiency in distribution services to support increased regional economic growth (Hidayat, 2018). Toll roads not only have a positive impact but also have a negative impact on the socio-economy, especially MSME players.

The socio-economic impacts of toll road construction on Micro, Small, and Medium Enterprises (MSMEs) are mixed. While toll roads can enhance accessibility, their benefits are not uniform. Irfan et al. (2021) found that improved accessibility positively influences MSME income, but this depends on the strategic placement of toll exits. Similarly, Sena and Anondho (2024) noted that toll roads can improve market access for some MSMEs while disadvantaging others by altering traffic patterns. Thus, the outcomes of toll road construction on MSMEs hinge on infrastructure planning and local business readiness, highlighting the need for further research to inform effective policy decisions.

H1: Toll road construction has a significant effect on accessibility.
H2: Accessibility has a significant effect on MSME income.
H3: Toll road construction has a significant effect on MSME income.
H4: Accessibility as a mediator between toll road construction has a significant effect on MSME income

Research Framework

Figure 1 is a fishbone diagram that illustrates the research roadmap from 2015 to 2028. The research began with a focus on marketing and small business development, then continued to issue of infrastructure, regional inequality, and socio-economic impacts, including the impact of the Covid-19 pandemic. Furthermore, the research highlights the performance of BUMDes, the entrepreneurial marketing approach, and the impact of toll road construction on MSME income. Each stage of the research is interconnected and forms the basis for the final goal, namely, developing an integrated and sustainable Community-Based Tourism Model in 2025–2028. This diagram shows a consistent and systematic research direction towards strengthening the local community-based economy

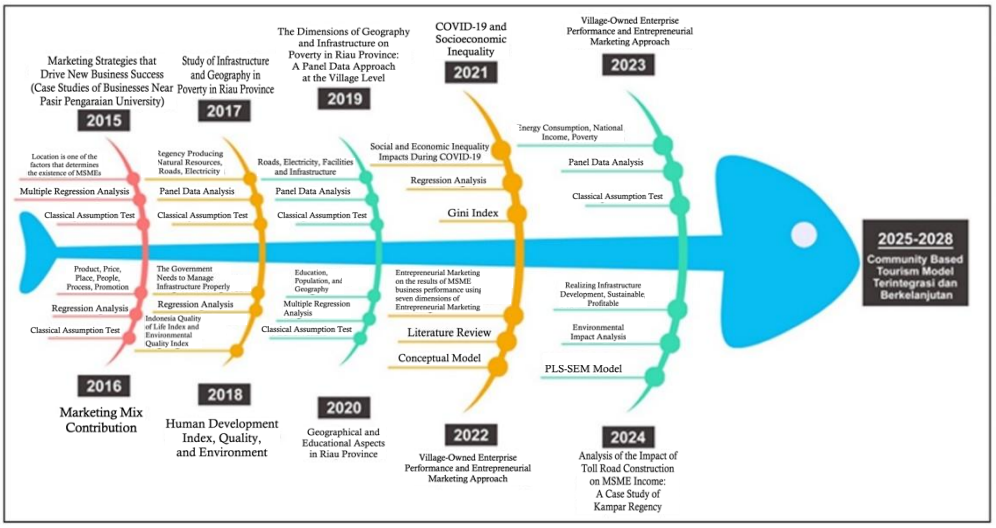

Figure 1. Roadmap Research

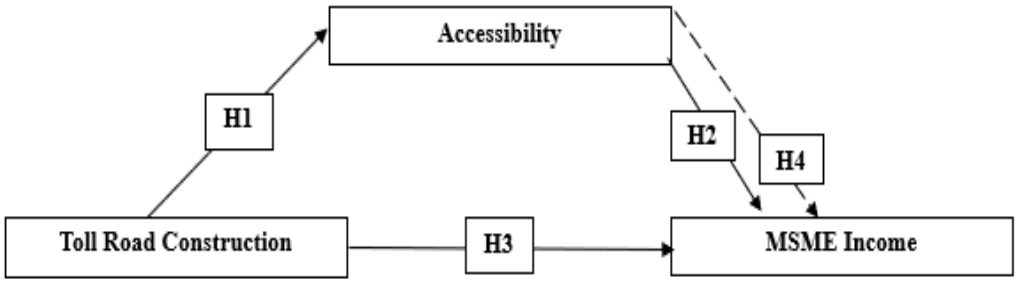

Figure 2. Research Framework

Figure 2 is a conceptual framework that illustrates the relationship between toll road construction, accessibility, and MSME income, with accessibility as a mediating variable. In this model, toll road construction is assumed to have an effect on increasing accessibility (H1), and this accessibility then affects the increase in MSME income (H2). However, the direct relationship between toll road construction and MSME income is shown to be insignificant (H3), thus confirming that the effect does not occur directly. Therefore, the fourth hypothesis (H4) suggests that accessibility acts as a mediator, bridging the effect of toll road construction on MSME income. In other words, the positive impact of new infrastructure development will be felt by MSME actors if the infrastructure really increases the ease of access and movement of goods and services.

RESEARCH METHOD

This study uses a quantitative approach to analyze the impact of toll road construction on the income of Micro, Small, and Medium Enterprises (MSMEs) in Kampar Regency. The quantitative approach was chosen because it allows statistical testing of causal relationships between variables, so that it can provide a clearer picture of the impact of infrastructure development on the local economy. Primary data were obtained through field observations conducted by interviews and questionnaires. Respondents in this study were MSME actors who were directly affected by the construction of the toll road, so that the data obtained could reflect real conditions in the field. In addition, secondary data as supporting data was obtained from relevant agencies, such as the Transportation Agency and the local Cooperative and MSME Agency.

The population in this study was all MSME actors in Kampar Regency who were affected by the construction of the toll road. The sample was taken purposively, namely, MSME actors who directly felt the impact of the project. This was done to ensure that

respondents involved in the study had experience relevant to the topic being studied. The instruments used in this study consisted of questionnaires designed to measure independent and dependent variables. The independent variables (X) include toll road development, consisting of toll road length and toll road quality (X1), number of toll gates and access to MSME areas (X2), travel time from production centers to markets (X3), and impact on transportation costs (X4). Meanwhile, the dependent variable (Y) is MSME income, consisting of changes in sales volume before and after toll road construction (Y1), increased competitiveness of MSME products in local and regional markets (Y2), and MSME annual income levels (Y3).

The data analysis method used is Partial Least Squares-based Structural Equation Modeling (SEM-PLS). SEM-PLS was chosen because of its advantages in handling complex models, small to medium sample sizes, and non-normally distributed data (Ketchen, 2013). The analysis was conducted using the latest version of SmartPLS software, which encompasses the stages of evaluating the measurement model (outer model) and evaluating the structural model (inner model). Mediation testing was carried out to test the significance of the indirect effect through the indirect effect approach. Thus, this study is expected to provide in-depth insights into how toll road construction affects MSME income and the factors that mediate this relationship, as well as provide recommendations for policymakers to increase the benefits of infrastructure for the community.

RESULTS

Data analysis was carried out using the Structural Equation Modeling (SEM) method based on Partial Least Squares (PLS) at the outer model evaluation stage, showing the outer loadings value, which determines how well the indicators measure latent constructs.

Table 1. Outer Loadings Results

Variables	Outer Loadings
Accessibility (M1)	0.970
Accessibility (M2)	0.635
Toll Road Construction (X2)	0.962
Toll Road Construction (X3)	0.758
MSME Income (Y1)	0.963
MSME Income (Y2)	0.938
MSME Income (Y3)	0.865

Table 1 shows that most of the indicators in this study show very good values, with a loading value of more than 0.70, namely the M1 Indicator (0.970), X2 (0.962), and Y1 (0.963). While the M2 indicator (0.635) is slightly lower than 0.70, it is still acceptable in this study because the AVE value and composite reliability of the Accessibility construct (M) still meet the criteria.

Table 2 shows that the AVE values for all constructions are greater than 0.50, which indicates good convergent validity. Convergent validity has been well met because the outer loadings of the indicators are above 0.70 and the AVE of the constructs is greater than 0.50. Overall, the constructions used in this study show good convergent validity.

Table 2. Construct Validity and Reliability

Variables	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Accessibility (M)	0.970	0.970	0.970	0.970
Toll Road Construction (X)	0.635	0.635	0.635	0.635
MSME Income (Y)	0.962	0.962	0.962	0.962

Table 3 shows that all HTMT values are well below 0.85, which indicates that discriminator validity has been well met. The composite reliability values for all constructs

are above 0.7, indicating that the model has good reliability. Although Cronbach's Alpha value for Accessibility (M) is slightly lower (0.598), the composite reliability value of the construct still meets the requirement (0.797), indicating that the construct is still reliable. Overall, the reliability of the measurement model is well met based on composite reliability, which shows sufficient internal consistency. Cronbach's Alpha value for Accessibility (M) is slightly lower than expected, but still acceptable.

Table 3. Heterotrait-Monotrait Ratio

Variable	Heterotrait-monotrait ratio (HTMT)
Accessibility (M)	0.251
Toll Road Construction (X)	0.449
MSME Income (Y)	0.159

Table 4 shows the inner model stage, the Variance Inflation Factor (VIF < 5) value is used to ensure there is no multicollinearity between constructs. All VIF values are below 5 (even far below), so there is no multicollinearity problem in this model.

Table 4. Collinearity Statistics (VIF) Results

Variable	VIF
Accessibility (M)	1.051
Toll Road Construction (X)	1.000
MSME Income (Y)	1.051

Table 5 shows that Accessibility (M) has an R^2 value of 0.048, which means that only about 4.8% of the variation in accessibility can be explained by the Toll Road Development variable (X). This value is classified as very weak, indicating that toll road development has not strongly explained changes in MSME accessibility. MSME income (Y) has an R^2 value of 0.197, meaning that 19.7% of the variation in MSME income can be explained by Toll Road Development (X) and Accessibility (M) together.

Table 5. Results of the Coefficient of Determination (R2)

Variable	R-square
Accessibility (M)	0.048
MSME Income (Y)	0.197

Table 6 shows that the f-square value, it is known that the significant and substantial influence comes more from Accessibility ($f^2 = 0.234$) than from Toll Road Development ($f^2 = 0.000$). This means that the increase in MSME income in this model is more influenced by how well accessibility improves, rather than by toll road construction directly. This is also consistent with the f-square value of 0.051 (small effect), which shows the small contribution of variable X to M.

Table 6 shows the results of path analysis, the relationship between the Accessibility (M) variable and MSME Income (Y) has a significant influence. This can be seen from the coefficient value of 0.444, the T-statistic value of 2.151, which exceeds the threshold of 1.96, and the p-value of 0.032, which is smaller than 0.05. This means that the higher the accessibility felt by MSME actors, the higher the income they earn. Meanwhile, the relationship between Toll Road Development (X) and Accessibility (M) shows a coefficient of 0.219, but with a T-statistic of 0.834 and a p-value of 0.405, which indicates that this relationship is not statistically significant. Likewise, in the direct relationship between Toll Road Development (X) and MSME Income (Y), a very small coefficient of -0.001 was obtained, with a T-statistic of 0.003 and a p-value of 0.997, so it can be concluded that there is no direct influence of toll road development on MSME income. Thus, although toll road development does not have a direct impact on accessibility or MSME income, the accessibility variable still plays an important role as a mediator that can bridge the influence of toll road infrastructure development on increasing the income of MSME actors.

Table 6. Path Significance Test Results and F Square

Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistics (|O/STDEV|)	P-Values	f-square
Accessibility (M) -> MSME Income (Y)	0.444	0.473	0.207	2.151	0.032	0.234
Toll Road Development (X) -> Accessibility (M)	0.219	0.165	0.263	0.834	0.405	0.051
Toll Road Development (X) -> MSME Income (Y)	-0.001	0.027	0.162	0.003	0.997	0.000

To see the predictive ability of the model using the blindfolding technique ($Q^2 > 0$ indicates predictive relevance). The Q^2 (Predictive Relevance) values obtained for the model are: a. Q^2 Accessibility (M) = 0.0014 b. Q^2 MSME Income (Y) = 0.0642 Both Q^2 values are very low, indicating that the model's predictive ability of the accessibility and MSME income variables is weak. Q^2 values > 0 indicate predictive relevance, but values below 0.1 indicate that the predictions provided by the model are not yet reliable for practical purposes.

From the indirect effect results, it is found that toll road construction has an indirect effect on MSME income through accessibility of 0.097. Although it shows a positive mediation effect, the effect is small and insignificant. Data from Smart PLS 4 shows that toll road construction can improve accessibility, which impacts MSME income, but the direct relationship is not significant. This suggests that infrastructure has not provided optimal benefits to MSMEs. Additional approaches, such as better distribution channels and market adaptation training, are needed for the benefits of infrastructure to be felt. Accessibility serves as a mediator in this relationship.

Figure 2 visualizes the SEM-PLS structural model that has been analyzed using the SmartPLS 4 application. This model consists of three main constructions: Infrastructure Development (X) - as the independent variable, Accessibility (M) - as the mediating variable, and MSME Income (Y) - as the dependent variable. This model explains the relationship between variables and their path coefficient values. First, the arrow from Infrastructure Development (X) to Accessibility (M) shows a coefficient of -0.142, meaning a negative influence. Second, the arrow from Accessibility (M) to MSME Income (Y) shows a value of 0.638, which means a positive and strong influence. Third, the direct path from Infrastructure Development (X) to MSME Revenue (Y) has a value of 0.006, indicating a very small and insignificant direct effect. Research concludes that accessibility is important in the influence of toll road development on MSME income, with hypotheses that strengthen the mediating role of accessibility.

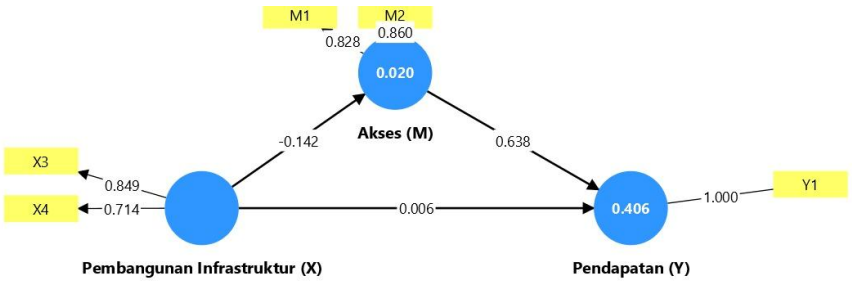

Figure 2. SEM-PLS Model Data Processing Results

DISCUSSION

The results of the SEM-PLS analysis on the Pekanbaru-Bangkinang Toll Road's impact on MSME income in Kampar Regency reveal nuanced dynamics between infrastructure development, accessibility, and economic outcomes. The findings indicate that while toll road construction aims to enhance mobility and economic performance, its benefits for MSMEs are not straightforward. Specifically, H1 shows that toll road

construction does not significantly affect accessibility, with a p-value of 0.405 and a t-statistic of 0.834. This suggests that the anticipated improvements in mobility have not fully materialized for MSMEs, likely due to non-strategic toll exit placements or inadequate supporting infrastructure, such as rest areas or market access points. This aligns with Khasanah et al. (2017), who argue that infrastructure development must be tailored to local economic contexts to deliver tangible benefits. Their study on the Solo-Kertosono toll road similarly found that poorly planned infrastructure can fail to enhance local economic activity, particularly for small-scale businesses reliant on local traffic.

In contrast, H2 confirms that accessibility significantly influences MSME income, with a p-value of 0.032 and a t-statistic of 2.151. This highlights the crucial role of market and resource access in driving the economic performance of MSMEs. Irfan et al. (2021) corroborate this, noting that enhanced accessibility through toll roads can increase MSME sales and competitiveness by up to 20% when infrastructure facilitates better market reach. Their analysis of the Trans Sumatra toll road highlights how strategic toll gate placement can amplify economic benefits for MSMEs, a factor that appears lacking in the Pekanbaru-Bangkinang case. The significant role of accessibility suggests that MSMEs thrive when infrastructure directly supports their ability to connect with broader markets, a finding echoed by Santoso et al. (2022), who emphasize that improved access to resources and customers can significantly boost local business income.

However, H3 reveals no direct effect of toll road construction on MSME income, with a p-value of 0.997 and a t-statistic of 0.003. This indicates that the toll road alone does not automatically translate into increased patronage or revenue for MSMEs. Sena and Anondho (2024) offer a similar perspective, noting that toll roads can divert traffic away from local businesses, thereby reducing foot traffic for MSMEs that rely on proximity to main roads. Their study on the Soroja toll road highlights how altered traffic patterns can disadvantage certain MSMEs, particularly those not located near toll exits. This explains the weak direct impact in Kampar Regency, where MSMEs may face challenges adapting to new traffic flows without targeted support.

H4 further clarifies that accessibility mediates the relationship between toll road construction and MSME income, though the indirect effect (0.097) is small and statistically insignificant. This mediation underscores that infrastructure's economic benefits are contingent on improved accessibility, which was not sufficiently achieved in this case. Lembhe (2024) supports this, arguing that infrastructure projects must be complemented by initiatives like training programs or market access strategies to maximize economic impacts. Similarly, Ahmad (2022) notes that toll roads can stimulate regional growth only when paired with policies that enhance local business capabilities, such as marketing or distribution support. The weak mediation effect in this study suggests that the Pekanbaru-Bangkinang toll road has not been adequately integrated with such complementary measures.

These findings highlight the complexity of leveraging infrastructure for local economic growth. While toll roads are designed to foster economic activity, their effectiveness for MSMEs depends on strategic planning and local readiness. The insignificant direct impact on accessibility and income aligns with Song et al. (2016), who found that infrastructure projects can disrupt local economies when they lead to land loss or altered economic patterns without sufficient mitigation. To address these challenges, stakeholders must prioritize inclusive infrastructure planning. The implications of this study are clear: local governments should develop MSME-specific rest areas, strategically place toll exits near economic hubs, and engage MSMEs in project planning to enhance adaptability. Additionally, training in digital marketing and logistics can equip MSMEs to capitalize on new infrastructure. By integrating these strategies, policymakers can ensure that toll roads deliver equitable economic benefits, fostering sustainable growth for MSMEs in Kampar Regency and beyond.

CONCLUSION

Based on the SEM-PLS model analysis of the impact of the Pekanbaru-Bangkinang Toll Road infrastructure development on MSME income in Kampar Regency, with accessibility as a mediating variable, several key findings emerge. Firstly, infrastructure development has a negative influence on accessibility, as indicated by a path coefficient of -0.142. This suggests that despite the intention to enhance mobility, the current infrastructure may not be inclusive, and MSME actors may not be prepared to utilize it effectively. Secondly, accessibility positively affects MSME income, with a coefficient of 0.638, highlighting the importance of access to raw materials, markets, and distribution facilities in supporting economic performance. However, infrastructure development shows no direct effect on MSME income, with a direct coefficient of only 0.006, indicating a weak and statistically insignificant relationship. Furthermore, there is a negative effect of infrastructure development on MSME income through accessibility, with a mediation value of -0.102, suggesting that disrupted accessibility can lead to reduced income.

The implications of these findings suggest that local governments should prioritize building MSME rest areas, opening exit tolls in productive areas, and involving MSME players in planning processes. Additionally, providing training on digitization and efficient transportation/logistics is essential for adapting to infrastructure changes. Limitations of this study include the focus on a single region, which may not generalize to other contexts. Future research should investigate the long-term impacts of infrastructure development on MSMEs across diverse settings and explore the role of technology in enhancing accessibility and increasing income.

REFERENCES

[1] Ahmad, F. S. (2022). Dampak pembangunan jalan tol Trans Jawa terhadap pertumbuhan ekonomi di Jawa Tengah. *Jurnal Ekonomi dan Kebijakan Pembangunan, 11*(1), 1–18.

[2] Asraf, A., Hakim, A., Bagea, A., & Paluala, K. (2024). The human resource development and product innovation of MSMEs in Kendari City. *Jurnal Ilmiah Manajemen Kesatuan*, *12*(4), 913-924.

[3] Fuadi, F., & Nasrudin, R. (2022). Dampak pembangunan jalan tol Trans Sumatera terhadap alih fungsi lahan permukiman dan persawahan masyarakat ditinjau dalam perspektif ekonomi Islam. *Edunomika, 6*(2), 1–7.

[4] Hidayat, A. (2018). Toll road construction and its implications for regional economic growth. *Transportation Research Part A: Policy and Practice, 112*(1), 123-134.

[5] Huda, A. (2010). *Analisis perubahan pergerakan akibat perubahan infrastruktur jalan lokal sebagai dampak pembangunan jalan tol Semarang-Solo* (Bachelor Dissertation, Universitas Diponegoro).

[6] Haughwout, A. F. (2001). *Infrastructure and social welfare in metropolitan America*. *Economic Policy Review*, New York: Federal Reserve Bank of New York.

[7] Indartini, M., & Istiqaroh, C. R. (2015). Dampak alih fungsi lahan pertanian terhadap alih profesi dan kesejahteraan petani di Kota Madiun. *Jurnal Ilmu Ekonomi, Manajemen, dan Akuntansi (EKOMAKS), 4*(1), 121-131.

[8] Irfan, A., Rosalia, F., & Maryanah, T. (2021). Analisis dampak pembangunan jalan tol Trans Sumatera (JTTS) ruas Terbanggi Besar–Gunung Sugih terhadap usaha rumah makan dan usaha mikro kecil menengah (UMKM). *Wacana Publik, 15*(2), 95–103.

[9] Ketchen, D. J. (2013). A primer on partial least squares structural equation modeling. *Long Range Planning*, *46*(1–2), 184–185.

[10] Khasanah, U., Nugraha, N., & Kokotiasa, W. (2017). Dampak pembangunan jalan tol Solo-Kertosono terhadap hak ekonomi masyarakat Desa Kasreman Kecamatan Geneng Kabupaten Ngawi. Citizenship: Jurnal Pancasila dan Kewarganegaraan, 5(2), 108-118.

[11] Lembhe, P. (2024). Toll road impact on regional economic development. *Journal of Economics & Management Research, 5*(1), 1–7.

[12] Loh, C. G., & Kim, R. (2021). Are we planning for equity? Equity goals and recommendations in local comprehensive plans. *Journal of the American Planning Association*, *87*(2), 181-196.

[13] Kirana, A., Noor, M., & Dama, M. (2019). Pembangunan infrastruktur di Kecamatan Laham Kabupaten Mahakam Ulu. *eJournal Ilmu Pemerintahan, 7*(2), 781–796.

[14] Mahdi, A., Hidayat, A., Falatehan, F., & Economics, E. (2024). A systematic literature review on the impact of toll road development to the local. *Journal of Economics, 8*(1), 55–69.

[15] Mankiw, N. G. (2015). *Principles of Economics*. Dalam C. Monga & J. Y. Lin (Eds.), *The Oxford Handbook of Africa and Economics: Volume 1: Context and Concepts* (pp. 39–48). Oxford University Press.

[16] Nangoi, T. R. R., Laoh, E. O. H., & Baroleh, J. (2021). Dampak alih fungsi lahan pertanian terhadap pendapatan petani di Desa Solog Kecamatan Lolak Kabupaten Bolaang Mongondow. *AGRIRUD, 3*(3), 401–408.

[17] Puspita, D. P., Militina, T., & Effendi, A. S. (2020). Employment opportunities and poverty levels in Provinsi Kalimantan Timur. *International Journal of Economics, Business and Accounting Research (IJEBAR), 4*(1), 141–157.

[18] Pererva, P., Kuchynskyi, V., Kobielieva, T., Kosenko, A., & Maslak, O. (2021). Economic substantiation of outsourcing the information technologies and logistic services in the intellectual and innovative activities of an enterprise. *Eastern-European Journal of Enterprise Technologies*, *4*(13), 112-124.

[19] Putra Wicaksono, B. (2021). Pengaruh tingkat pendidikan, pengalaman usaha dan informasi akuntansi terhadap keberhasilan usaha pelaku UMKM di Kecamatan Mejayan Kabupaten Madiun. *Gastronomía Ecuatoriana y Turismo Local*, *1*(69), 5–24.

[20] Quyet, N. X., & Phung, T. K. (2023). Comparative analysis of information security policies at Big 4 logistics companies in the world. *INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEACH AND GROWTH EVALUATION*, *4*(6), 675-682.

[21] Raihan, A. (2023). A review of the global climate change impacts, adaptation strategies, and mitigation options in the socio-economic and environmental sectors. *Journal of Environmental Science and Economics*, *2*(3), 36-58.

[22] Rochaida, E. (2016). Dampak pertumbuhan penduduk terhadap pertumbuhan ekonomi dan keluarga sejahtera di Provinsi Kalimantan Timur. *Forum Ekonomi, 18*(1), 14–24.

[23] Saaida, M., & Saaidah, I. (2023). Understanding the Dynamics of Failure Development in Marginalized Areas: A Comprehensive Analysis. *Alpha-Beta*, *4*(5), 85-97.

[24] Santoso, D., Prabowo, H., & Wibowo, R. (2022). The impact of market access on MSME income: A case study. *Journal of Small Business Development, 29*(3), 123-135.

[25] Seddon, N., Smith, A., Smith, P., Key, I., Chausson, A., Girardin, C., ... & Turner, B. (2021). Getting the message right on nature-based solutions to climate change. *Global change biology*, *27*(8), 1518-1546.

[26] Sena, R. R., & Anondho, B. (2024). Analisis dampak infrastruktur jalan tol Soroja terhadap pertumbuhan bisnis kecil dan menengah. *JMTS: Jurnal Mitra Teknik Sipil, 7*(1), 1–10.

[27] Setyawati, I. (2018). Peran usaha mikro kecil menengah (UMKM) dalam perekonomian nasional. *Majalah Ilmiah Widya, 26*(288), 50–57.

[28] Shahrier, M., Hasnat, A., Al-Mahmud, J., Huq, A. S., Ahmed, S., & Haque, M. K. (2024). Towards intelligent transportation system: A comprehensive review of electronic toll collection systems. *IET Intelligent Transport Systems*, *18*(6), 965-983.

[29] Shatz, H. J., Kitchens, K. E., & Rosenbloom, S. M. (2011). The effects of highway infrastructure on economic activity. *In Highway infrastructure and the economy, 2*(1), 15-42.

[30] Siswanto, V. A., Wahjuningsih, T. P., & Murtini, M. (2019). Dampak pembangunan jalan tol terhadap faktor sosial, ekonomi dan lingkungan pada usaha batik dan perhotelan di Kota Pekalongan. *Jurnal Litbang Kota Pekalongan, 17*, 83–92.

[31] Song, J., Ye, J., Zhu, E., Deng, J., & Wang, K. (2016). Analyzing the impact of highways associated with farmland loss under rapid urbanization. *ISPRS International Journal of Geo-Information, 5*(6), 94-104.

[32] Suhirman, G., & Aminy, M. M. (2022). The economic independence of pesantren and its impact on the development of Micro, Small, and Medium Enterprises (MSMEs). *International journal of health sciences*, *6*(5), 4046-4063.

[33] Umasugi, L. (2018). Pemetaan kawasan sentra produksi bagi UMKM di Kota Ternate. Agrikan: *Jurnal Agribisnis Perikanan, 11*(1), 43, 123-133.

[34] Vadali, S. (2008). Toll roads and economic development: Exploring effects on property values. *Annals of Regional Science, 42*(3), 591–620.

[35] Wahyuni, I., Herawati, H., Suharmiati, S., & Salim, I. N. (2025). Analysis of financial performance on stock prices with earning growth as a mediator variable on infrastructure in Indonesia. *Jurnal Ilmiah Akuntansi Kesatuan*, *13*(3), 467-484.

[36] Wang, L., Liu, H., Wang, D., & Florez-Perez, L. (2023). Delivery of private toll roads: Incentive strategies for improving service quality and social welfare. *Socio-Economic Planning Sciences*, *86(1)*, 101501-101512.

[37] Wartono, W., Sidabutar, Y. F., Indrawan, M. G., & Panusunan, P. (2023). The impact of fly over construction at simpang ramayana mall in an effort to reduce traffic logs and community economic growth in Tanjungpinang City. *JMKSP (Jurnal Manajemen, Kepemimpinan, Dan Supervisi Pendidikan), 8*(1), 225-236.

[38] Wasfika, H., Aswat, I., & Karpriana, A. P. (2024). Marketing strategy of small business management in improving business profit. *Jurnal Ilmiah Manajemen Kesatuan*, *12*(5), 1585–1594

[39] Wylie, Peter J. "Infrastructure and Canadian economic growth 1946-1991." *The Canadian Journal of Economics/Revue canadienne d'Economique* 29 (1996): S350-S355.

[40] Zhang, X., Hu, Y., & Lin, Y. (2020). The influence of highway on the local economy: Evidence from China's Yangtze River Delta region. *Journal of Transport Geography*, 82, 102600-102612.

Impact of Toll Road Development on MSME Income

3838