The impact of toll road exit infrastructure development on land use and land values in adjacent areas (Case: eastern toll road exit in Probolinggo Regency)

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ABSTRACT
The development of trans-Java road infrastructure is intended to increase regional accessibility and mobility. Probolinggo Regency is one of the regencies traversed by the Trans Java Road, one of its six toll road exits being the eastern toll road exit. By comparing conditions before and after the existence of the eastern toll road exit, this study sought to investigate changes in land usage and land values in the vicinity of the exit. This study employed a qualitative method, collecting data through in-depth interviews and observation. The results indicate that the identification of land use changes after the construction of the toll road exit is not significant because the changes occurred at a greater distance from the location of the exit. By designating the region as toll road infrastructure, settlements, and areas of activity, the paddy fields and dry fields surrounding the exit have been transformed into built-up land. However, since the construction of the eastern toll road exit, land value fluctuations have climbed by between 104% and 140%. In other words, the presence of constructed infrastructure does not necessarily have a direct effect on land use changes. Nonetheless, it can have a substantial impact on land prices in settlements near the toll road exit.

KEYWORDS
Land use, land prices, and east exit toll

INTRODUCTION
Toll road is one of the government-created infrastructures designed to expedite interregional transportation. According to a government regulation (PP No. 15, 2005), Toll roads are national roads that are part of the road network and for which users must pay. The development of toll road infrastructure can have an effect on the surrounding area through which it passes. The Trans Java toll road is one of the toll roads in Indonesia.
The Trans Java Toll Road is a 1,167-kilometer-long freeway that connects Serang Banten and Banyuwangi, East Java. The construction of the Trans Java Toll Road is a form of regional autonomy intended to improve the well-being of each region's inhabitants. Regional autonomy policy as a stage of assistance, local governments as assistance in achieving the goal of constructing expressways, utilizing the advantages of their respective regions in accordance with Law Article 18 paragraph 6 regarding the central government's authority to stipulate regional regulations and other regulations, to implement autonomy and assistance level.

The construction of toll roads includes toll exits to facilitate the transfer of traffic from the National Road to the freeway. The location of the toll exit will have an effect on the neighborhood. The location of the exit toll has a significant impact on the absorption of labor and the creation of new jobs, as the regional economy grows Percoco (2016).

Concerning the construction of the east exit toll in the Probolinggo Regency, we wished to evaluate the impact of the toll road exit construction on land use and land prices. These changes occurred at a greater distance from the construction and were insignificant after the existence of infrastructure. Meanwhile, according to Putri & Buchori (2015), the development of road infrastructure will have varying effects in each region.

Lisdiyono (2004) stated that land-use change is inevitable in the process of implementing development. Meanwhile, according to Lillesand & Kiefer (1994), humans alter the land over time, which results in land-use changes.

Concerning changes in land prices, unit values expressed in nominal units per square meter of land area. According to Mayasari et al. (2009), land value is a measurement of the value of land based on the land's economic capacity regarding productivity and financial strategy. Meanwhile, Ermando et al. (2018) stated that the most expensive land is located near toll gate interchanges, and prices decrease as one approaches the border.

The relationship between land-use change from 2016 to 2020 and the construction of the easter toll road exit, or vice versa, is the focus of investigation with area studies employing a ring buffer of up to 2 kilometers. Regarding changes in land prices based on conditions before and after the construction of the eastern toll road exit, this study has two objectives: (1) measuring how far the land-use changes around the construction of the eastern toll road exit with a 2-kilometer observation distance, and (2) identifying changes in land prices after the construction of the eastern toll road exit in Sumberkedawung Village, Clarak Village, Jorongan Village, Kerpangan Village, Leces Village, Pondok Leces, and Pondok Leces Village.

LITERATURE REVIEW

Toll exit road is the entrance and exit to a freeway or toll road from an area or city. Examining the conditions that prevailed prior to the construction of toll roads and exits in a region or city can reveal how the existence of an exit affects the surrounding area. The relationship between toll road exit development and land-use change, according to (III et al., 1979), reveals that topography, population, accessibility, facilities and infrastructure, and environmental carrying capacity are the causes of land-use changes. Changes in land use signify a transformation from one land use to another (Zhang & Winoto, 1996).
The exchange of toll road exit flows has affected land use, land value, development, employment opportunities, travel patterns, and taxes, according to research studies (Land, 2000). Meanwhile, the conversion of agricultural land is caused by strategic land, government regulations, land prices, land ownership status, and population growth (Fauzi et al., 2016). According to Aji et al. (2020), after the construction of toll road infrastructure and exit toll roads, infrastructure development has the effect of transforming land use from undeveloped land to developed land. With new infrastructure, there are indications of changes in land use, characterized by accessibility and mobility, which lead to an increase in nearby development activities.

In addition to land use following toll road exits, there is evidence of rising land prices in villages adjacent to toll exits. Land prices are defined as land valuations based on the nominal price of the money unit per applicable land market unit area (Haim Darin-Drabkin, 1977). According to Yunus & Jolis (2007), increasing accessibility at a location will result in rising land prices near regional, city, and regional infrastructure and facilities. Regarding changes in land use and land prices in the area surrounding the exit toll road, it was discovered that the construction of exit tolls led to a change in land use from undeveloped to developed land, followed by an increase in land prices in urban villages in the area of the toll road exits. Thus, the post-development of the east exit toll requires the identification of the relationship between the construction of toll road exits in a room area and changes in land use and land prices in Probolinggo Regency, which has an impact according to theory and the findings of previous studies in various locations.

METHODS

This study employed a qualitative descriptive method. According to Agha et al. (2018), the illustrative system is a research method commonly used to examine the condition of natural objects that is based on the philosophy of postpositivism. We acted as a binding agent and describes a situation objectively or on the basis of observable facts; meanwhile, according to Nazir (1998), the descriptive text describes a recurring phenomenon and offers predictions and causal relationships.

Descriptive research is characterized by describing and interpreting existing data. A rational analysis was conducted by confirming the investigation to interested parties and basing the analysis on the employed theory. In this study, both primary and secondary data collection methods were employed. Field observations, particularly land prices per m2, and in-depth interviews with relevant parties from the district, sub-district, and village government levels were used to collect preliminary data. Secondary data obtained from the agency survey included image data for 2016 and 2020, Bappeda Study Documents, and BPS Probolinggo Regency statistical data, namely District in Figures 2015-2021.

The first analysis of land use using the overlay method was conducted with a GIS application using image data from 2016 and 2020. The overlay analysis queues image data and superimposes it with a buffer or assumed distance of influence. The ring buffer can help achieve the first research objective, which is to quantify the impact of the east exit toll on land-use changes. In this study, the ring buffer distance is restricted to a maximum of 2 kilometers from the east toll exit. The distance between research on land use is as follows:

(a) From the point of construction of the eastern toll road exit, Ring 1 is between 0 and 500 meters away.
(b) The distance between Ring 2 and the exit construction point is between 500 and 1000 meters.
(c) The distance between Ring 3 and the construction site of the toll road exit is between 1000 and 1500 meters.
(d) The distance between Ring 4 and the point of construction for the toll road exit is between 1,500 and 2,000 meters.

In the second analysis, data on land prices obtained from the village office with the condition of land prices before and after the construction of the eastern toll road exit, as an identification of the increase in land per m² and leading to the second research objective, which was to identify changes in land prices in the village adjacent to the east exit toll.

On the basis of in-depth interviews, the results of an analysis of land-use changes and land prices were confirmed to the Probolinggo Regency local government. The concluding findings become a comprehensive discussion with prior researchers from various locations and the employed theory.

RESULTS

Probolinggo Regency is one of East Java’s regencies. Probolinggo Regency is located at 111°0 50’ – 113°0 13’ East Longitude and 7°0 40’ – 8°0 10’ South Latitude, spanning 56 km along the north coast of Java Island and covering an area of 1,696,616,65 Ha. There are 24 sub-districts, 325 villages, and 5 urban villages in the Probolinggo Regency. The eastern toll road exit is located in Leces District, which administratively consists of ten towns. Sumberkedawung Village, Clarak Village, Jorongan Village, Kerpangan Village, Leces Village, and Pondokwuluh Village were selected for this study because they are located close to the exit.

| Village                  | Wide Village (km²) | 2016     | Density Population | Total Population | Density Population |
|--------------------------|--------------------|----------|--------------------|------------------|--------------------|
| Sumberkedawung Village   | 3.82               | 11,303   | 2,959              | 11,021           | 2,885              |
| Clarak Village           | 1.77               | 2,248    | 1,270              | 2,255            | 1,274              |
| Jordan Village           | 2.01               | 9,279    | 4,616              | 9,138            | 4,546              |
| Kembangan Village        | 2.26               | 5,718    | 2,530              | 5,657            | 2,503              |
| Leces Village            | 1.65               | 6,404    | 2,417              | 6,338            | 2,392              |
| Pondokwuluh Village      | 3.56               | 5,948    | 1,671              | 6,293            | 1,768              |
| Total                    | 40,900             | 15,463   | 15,368             |                  |                    |

Source: Leces District in Figures in 2016 and 2021

Land use change around the eastern toll road exit

Before and after the construction of the toll road exit, there are two distinct land-use conditions in the vicinity of the exit point. The first condition can display an image of the surrounding area, which is juxtaposed with the second condition to show how the land has changed since the exit was constructed. Conversion of land for the eastern toll road exit utilizing the ArcGIS mapping application with a ring buffer from the exit point/interchange, and focusing on a land area with a maximum research study range of 2 kilometers
comprised of the first ring of 500 meters, the second ring of 1000 meters, the third ring of 1500 meters, and the fourth ring of 2000 meters.

**Condition before the Eastern Toll Road Exit Construction**

Figure 1 is a map of land use surrounding the eastern toll road exit prior to the existence of the exit, based on 2016 data with land area classification, including lakes, industry, meadow, agriculture area, fields, settlements, and places of activity.

![Map of land use in 2016](image)

**Figure 1. Land use in 2016**

*Source: Authors (2021)*

A projection map with a 2 km ring buffer reveals land use prior to the 2016 construction of the eastern toll road exit. The following Table 2 details land use within the 2-kilometer buffer zone.

**Table 2. Land use in 2016**

| Land Classification                        | Maximum buffer zone 2 km | Total | %   |
|--------------------------------------------|--------------------------|-------|-----|
|                                            | 500 m | 1000 m | 1500 m | 2000 m |       |
| Industry                                  | 2.5   | 2.4    | 0.0    | 18.1   | 23.1  | 2.1%  |
| Lake                                      | 0.0   | 0.0    | 4.4    | 0.4    | 4.8   | 0.4%  |
| Meadow                                    | 0.0   | 0.0    | 1.4    | 0.0    | 1.4   | 0.1%  |
| Settlements and places of activity        | 10.2  | 61.9   | 158.9  | 114.3  | 345.3 | 31.7% |
| Agriculture area                          | 67.8  | 177.2  | 184.6  | 160.1  | 589.8 | 54.2% |
| Moor/field                                | 0.0   | 0.1    | 22.4   | 101.7  | 124.2 | 11.4% |
| National Strategic Project                | 0.0   | 0.0    | 0.0    | 0.0    | 0.0   | 0.0%  |
| **Total**                                 | 80.5  | 241.6  | 371.8  | 394.7  | 1088.6| 100.0%|

*Source: Authors (2021)*

Table 2 of 2016 land use, divided into rings 1 - 4, reveals that ring 4 with 394.7 ha and 1.5 km - 2.0 km distance has the most extensive land use. The percentage of built-up land with industrial and settlements and
activity classifications is 33.8%, while the percentage of undeveloped land classified as lakes, moors, meadows, and agricultural areas is 66.2%

**Condition after the eastern toll road exit construction**

Following the construction of the toll road and the eastern toll road exit, the land use has changed. Some territories have altered the implementation of infrastructure construction. The projected land use in 2020 is depicted as a map image (Figure 2).

![Figure 2. Land Use in 2020](image)

Source: Authors (2021)

Based on the projected land use in 2020 within a 2-kilometer study radius, the area is computed as shown in Table 3:

| Land Classification                              | ultimate buffer zone 2 km | Total  | %     |
|-------------------------------------------------|---------------------------|--------|-------|
|                                                 | 500m | 1000 m | 1500 m | 200 0 m |       |        |
| Industry                                        | 2.5  | 2.4    | 0.0    | 18.1    | 23.1  | 2.1%   |
| Lake/situ                                       | 0.0  | 0.0    | 4.4    | 0.4     | 4.8   | 0.4%   |
| Meadow                                          | 0.0  | 0.0    | 1.4    | 0.0     | 1.4   | 0.1%   |
| Settlements and places of activity              | 11.1 | 63.9   | 164.0  | 118.1   | 357.0 | 32.8%  |
| Agriculture area                                | 63.3 | 163.9  | 163.8  | 151.0   | 541.9 | 49.8%  |
| Moor/field                                      | 0.0  | 0.1    | 22.4   | 100.9   | 123.3 | 11.3%  |
| National Strategic Project                      | 3.6  | 11     | 15.8   | 6.3     | 37.1  | 3.4%   |
| **Total**                                       | 80.5 | 241.6  | 371.8  | 394.7   | 1088.6| 100.0% |

Source: Authors (2021)

According to Table 3 of 2020 land use, which is divided into rings 1 through 4, the most extensive land use is in ring 4 with 394.7 ha and a distance between 1.5 km and 2.0 km. In 2020, the total area of each round will remain the same, but the classification of the site will change. The percentage of land that has been
developed for industrial classification, toll roads, settlements, and places of business is 38.4 percent. In the meantime, the rate of undeveloped land is 61.6%.

Comparing 2016 and 2020 data

The land use in 2016 and 2020 is compared to determine if there is a change. In this case, it is evident that there is an opportunity for land-use change, as it has been demonstrated that the percentage of built-up land use in 2016 would decrease by 33.8%, rising to 38.4% in 2020, and increasing the rate of the area by 4.6%. The rate of undeveloped land use decreased from 66.2 percent in 2016 to 61.6 percent in 2020, or by 4.6 percent. Consequently, the land use in 2016 and 2020 is compared in one form of Table 4.

Table 4. Recapitulation of land use conditions in 2016 and 2020

| Category | Multiring buffer 2 km (Ha) | 500 meters | 1000 meters | 1500 meters | 2000 meters | Gap |
|----------|---------------------------|------------|-------------|-------------|-------------|-----|
|          |                           | 2016       | 2020        | 2016        | 2020        | 2016 | 2020 | 2016 | 2020 | 2016 | 2020 | 2016 | 2020 |
| Industry |                           | 2.5        | 2.5         | 2.4         | 2.4         | 0.0  | 0.0  | 0.0  | 0.0  | 18.1 | 18.1 | 0.0  | 0.0  |
| Lake/situ|                           | 0.0        | 0.0         | 0.0         | 0.0         | 4.4  | 4.4  | 0.0  | 0.0  | 0.4  | 0.4  | 0.0  | 0.0  |
| Meadow   |                           | 0.0        | 0.0         | 0.0         | 0.0         | 1.4  | 1.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Settlements & places of activity | | 10.2       | 11.1        | 6.1         | 6.3         | 2.0  | 158.9| 164.0| 5.1  | 114.3| 118.1| 3.8  |
| Agriculture area | | 67.8       | 63.3        | 4.5         | 177.2       | 163.9| -13.3| 184.6| 163.8| -20.8| 160.1| 151.0| -9.1 |
| Moor/field | | 0.0        | 0.0         | 0.1         | 0.1         | 0.0  | 22.4 | 22.4 | 0.0  | 101.7| 100.9| -0.8 |
| National Strategic Project | | 0.0        | 3.6         | 3.6         | 0.0         | 11.4 | 11.4 | 0.0  | 15.8 | 15.8 | 0.0  | 6.3  | 6.3  |

(-) : Categorization of the area that shrunk in size.
(+): Classification of the region that expanded in size.

Source: Authors (2021)

Table 4 demonstrates that the land classification has shifted from undeveloped to developed. This is accomplished by identifying altered land in each ring buffer, as shown in Table 5. The following are the alterations to land use during 2016–2020:

Table 5. Changes in land use in 2016 – 2020

| Year          | Multiring buffer 2 km (Ha) | Grand total | %     |
|---------------|----------------------------|-------------|-------|
|               | 500m | 100 0 m | 1500 m | 2000 m | total |       |
| Agriculture area | Settlements & places of activity | 0.9 | 1.9 | 5.1 | 6.7 | 14.6 | 28.05% |
| Agriculture area | Toll road infrastructure       | 3.6 | 11.4 | 15.8 | 2.5 | 33.3 | 64.13% |
| Moor/field     | Settlements & places of activity | 0 | 0 | 0 | 0.3 | 0.3 | 0.63% |
| Moor/field     | Toll road infrastructure       | 0 | 0 | 0 | 0.5 | 0.5 | 0.97% |
| Settlements & places of activity | Toll road infrastructure | 0 | 0 | 0 | 3.2 | 3.2 | 6.22% |
| Total          |       | 4.6 | 13.3 | 20.9 | 13.2 | 52.0 | 100% |

Source: Authors (2021)

Based on Table 5, land-use changes from 2016 to 2020 indicate the following changes in land
classification:
1. Changes in land use occur further away from the eastern toll road exit position, specifically in ring 3 of 20.9 Ha.
2. With a classification of 64.13 percent for the toll road infrastructure area and 28.05 percent for the settlements and places of business, the agricultural land became developed.
3. The moor/field has become developed land with a road infrastructure classification of 0.97 percent and the area of settlements and places of business at 0.63 percent.
4. The area of settlements and places of business has been reduced by 6.22 percent due to road infrastructure.

By juxtaposing the findings of the analysis, field observations, and informant responses, it was possible to confirm the findings of in-depth interviews with the parties involved, in this case the Probolinggo Regency agency, with the findings of the analysis. The following Table 6 provides confirmation of the findings.

Table 6. In-depth interviews and field observation

| Observation Field | In-depth Interview Results | PUP | DPMPTSP | Local Government Agency | Bappeda | Agriculture |
|-------------------|----------------------------|-----|---------|-------------------------|---------|-------------|
| As a safeguard for toll road projects, an increase in community activities, and a residential area, the land surrounding the eastern toll road exit has been reduced. | After the eastern toll road exit construction, land modifications have taken place. Changes in land use occur further from the eastern toll road exit. The significance of agricultural land management. With the procurement of infrastructure and the establishment of settlements, land changes in the region surrounding the eastern toll road exit, specifically agricultural land, have slowed. | √   | √       | √                       | √       | √           |

Source: Authors (2021)

The following is an excerpt from the in-depth interview results: (our translation).

“The change in land use has not been significant, but it has occurred. Given that the east toll exit was operational in 2019, significant changes require more time. Utilizing agricultural land and minimizing the impact of compensation for the area of settlements or historical sites as compensation for land acquisition for toll road construction, the current land conversion provides land for toll road infrastructure development. Agricultural land that has changed or is associated with LP2B initially experienced conflict, but LP2B can be replaced by new land of a comparable size. Concerns about future land conversion necessitate the regulation of the surrounding area. As a result of other factors following the east toll exit, the value of land near the east toll exit has increased significantly.”
Based on the results of the recapitulation of the in-depth interviews, specifically the response from the Probolinggo Regency government agency, if the land-use change in the area surrounding the toll road exit has not been maximized due to the relatively young age of the eastern toll road exit. Control of agricultural land or undeveloped land reveals an increase in built-up land from rural land classification to settlements and places of business, as determined by an analysis of the surrounding area. Therefore, if there is no regulation, the area surrounding the eastern toll road exit will experience an increase in developed land.

Changes in land prices in the villages around the eastern toll road exit

Each village's market land price is divided into land classes with varying prices based on the location or location of the land. The market price of land lacks a definite standard; it is determined by the agreement between the landowner and land purchaser. The village released the average land price based on transaction data and the market price approach in each municipality; Table 7 displays the land cost around the east exit toll area.

Table 7. Land price changes for m² in villages around the eastern toll road exit

| Land Class | Sumberkedawung | Clarak | Jorong | Kerpangan | Leces | Pondokwuluh | Average |
|-----------|---------------|--------|--------|-----------|-------|-------------|---------|
|           | IDR 900,000   | IDR 750,000 | IDR 850,000 | - | IDR 80,000 | IDR 150,000 | IDR 546,000 |
| 1          | IDR 2,000,000 | IDR 1,500,000 | IDR 1,150,000 | - | IDR 210,000 | IDR 300,000 | IDR 1,032,000 |
| 2          | IDR 600,000   | IDR 400,000 | IDR 950,000 | - | IDR 135,000 | IDR 250,000 | IDR 467,000 |
| 3          | IDR 107,000   | IDR 75,000 | IDR 700,000 | - | IDR 50,000 | IDR 200,000 | IDR 226,400 |
| Land Price Changes | IDR 1,100,000 | IDR 750,000 | IDR 300,000 | - | IDR 130,000 | IDR 150,000 | IDR 486,000 |
| 1          | IDR 325,000   | IDR 150,000 | IDR 500,000 | - | IDR 85,000 | IDR 150,000 | IDR 242,000 |
| 3          | IDR 77,000    | IDR 0    | IDR 500,000 | - | IDR 10,000 | IDR 125,000 | IDR 142,400 |
| Percent % | 122.2 100.0 35.3 | - | 162.5 100.0 | 104 | 118.2 60.0 111.1 | - | 170.0 150.0 122 | 256.7 0.0 250.0 | - | 25.0 166.7 140 |

Class 1: Land adjacent to the National Road

Class 2: Land that is included in the environmental road and has a minimum distance of 0.5 km – 1.5 km from the National Road

Class 3: Land that is far from access to environmental roads or village roads >1.5 km

Source: Authors (2021)

The changes in land prices in villages adjacent to the eastern toll road exit construction are depicted in Table 7 of the analysis results. Figure 3 depicts the results of the analysis table in the form of a graph depicting the relationship between changes in land prices.
After the construction of the eastern toll road exit, Figure 3 illustrates an increase in the surrounding region’s interior. The increase was confirmed to the community in which the east exit toll was constructed. The following Table 8 confirms the increase in land to the municipality:

Table 8. Confirmation of land increase around eastern toll road exit based on in-depth interviews

| Observation Field | In-depth Interview Results | Probolinggo Regency Regional Agencies |
|-------------------|-----------------------------|--------------------------------------|
| Incorporating infrastructure appears to have led to an increase in land prices. | The exit results in a substantial increase in land prices. | Sumberkedawung 
| - In the toll area near the eastern toll road exit, access is simplified and mobility is enhanced. | Sumberkedawung was the location where prices increased the most. | Leces 
| The average increase in land prices was between 104 and 140 percent. | Leces 

The following is extracted from the interview:

"The construction of the eastern toll road exit has altered the surrounding area, particularly the land prices, which have risen significantly. The increase was caused by exit factor, which was based on increased transportation activities and ease of access, causing land prices to increase. The growth was greatest in villages with convenient access to public facilities."

Source: Authors (2021)
zone indicates that these changes have occurred. Nonetheless, these modifications occur further from the construction of the eastern toll road exit. In the 2 km buffer zone, undeveloped land with agricultural land and field classification transformed into developed land with toll road infrastructure. The area occupied by settlements and places of business was 93.78 percent. Infrastructure has a 104 percent to 140 percent impact on the land prices in the surrounding area, resulting in a price increase of 104 percent to 140 percent.

DISCUSSION

The construction of the eastern toll road exit in Leces District influences land use and land prices, as determined by research and confirmed with related parties. According to the effects research, the changes after the existence of infrastructure were not significant and occurred at a greater distance; the same was found at the eastern toll road exit in Probolinggo Regency, with no significant differences in land use changes. This is evidenced by the decline in the proportion of undeveloped to developed land.

Land-use changes occur when undeveloped land is classified as developed land or physical development (Aji et al., 2020). The research demonstrate similar findings. This current study's converted land consists of agricultural land and fields converted to toll road infrastructure and settlements and places of activity.

The identification results indicate that the structure of the eastern toll road exit has a significant impact on the price of village land located near the exit toll. This is similar to previous findings that the construction of exit tolls resulted in a change in land use from undeveloped to developed land, followed by an increase in land prices. (Masykuroh & Rudiarto, 2016).

CONCLUSION

Land-use changes have occurred between 2016 and 2020, but they have not been significant. The construction of the toll road exit, which alters land use in areas further from the exit toll, demonstrates this. Sumberkedawung Village, Clara Village, and Jorongan Village, which are located near the National Road and the eastern toll road exit, experienced significant changes in land prices. The findings suggest multiple recommendations.

After the eastern toll road exit was constructed, the Probolinggo Regency government must regulate land use in the surrounding area and adjust the tax value. Changes in land use can be observed in the transformation of agricultural land into residential land; this will be a cause for concern if there is no oversight of a farming area that will be transformed into settlements and community activities surrounding the construction of the eastern toll road exit infrastructure. Changes in land use necessitate a need for authority and control over the issuance of permits. Regarding changes in land prices, it is necessary to reassess the property's tax value following the exit. In addition, at the sub-district and village levels, it is necessary to coordinate with the community in order to take advantage of the eastern toll road exit opportunity by developing a community empowerment program in the micro-business trade sector in conjunction with the Probolinggo Regency program.

Along the National Road to eastern toll road exit, it is hoped that the community can take advantage
of the opportunity for infrastructure to be more productive in the field of entrepreneurship, in an effort to improve living standards through entrepreneurship or the development of the trade sector. Finally, future researchers should examine the significance of studying the social impact of administratively divided villages following the construction of toll roads and eastern toll road exit.

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