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# Application of Transit Oriented Development (TOD) Concept in Gelora Bung Karno Area

Herika Muhammad Taki <sup>1, a)</sup>

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**Abstract:** In the present era, many individuals rely on public transportation to meet their daily needs, particularly in Jakarta, Indonesia. Various options, such as trains and buses, serve as the primary choices for public transportation. This study, which focuses on the Gelora Bung Karno Stadium (GBK) area, explores the implementation of the Transit Oriented Development (TOD) concept. TOD is a planning strategy that aims to create compact, mixed-use communities centered around transit stations, with the intention to enhance economic growth, facilitate access to integrated public transportation, and reduce reliance on private vehicles to mitigate air pollution levels in the city. The research findings indicate that applying this concept can positively impact economic development and the efficiency of public transportation while concurrently fostering a cleaner and more sustainable environment for urban communities. This study is pertinent to current dynamics, where an increasing number of individuals are opting for public transportation as a primary solution to address urban mobility challenges.

**Keywords:** Public Transportation, Transit Oriented Development, Gelora Bung Karno Stadium, Integrated Public Transportation

## INTRODUCTION

In the era of urbanization and rapid economic development like today, public transportation is crucial in meeting people's mobility needs, especially in urban areas such as Jakarta, Indonesia (Ibraeva et al., 2020). Reliance on public transport is increasingly becoming a trend among individuals in response to the demands of modern life (Knowles et al., 2020). One of the areas that is the focus of research in this regard is around Gelora Karno Stadium (GBK), which is one of the important activity centers in Jakarta. By observing this trend, this research explores the application of Transit Oriented Development (TOD) in the area around Gelora Karno Stadium. This concept is not only seen as a solution to improve the efficiency of public transportation but also as an effort that can significantly boost the economic growth of the local community, fostering a promising future for the area (Lund, 2006). This area is considered strategic because it is a central point in public transportation services, including trains and buses, which are the backbone of mobility in Jakarta (Taki et al. 1, 2017).

Through this study, it is hoped that new insights can be found on the impact of implementing the TOD concept in the area around GBK, both in terms of economic growth and increasing the efficiency of the integrated public transportation system (Taki et al. 1, 2017). In addition, this study also seeks solutions to the problem of dependence on private vehicles, which is a potential source of air pollution in urban environments. By detailing this background, this study aims to significantly contribute to understanding the concept of Transit Oriented Development and its application in urban contexts, especially around Gelora Karno Stadium.

## LITERATURE REVIEW

Transit-oriented development (TOD) is the restructuring of urban development by maximizing mixed land and integrating it with healthy lifestyles (walking and cycling) and focusing on mass-scale urban transit facilities (Taki et al., 2018). TOD is widely seen in the integrated development of train stations and bus rapid transit as mass transportation facilities for commuters (Taki & Maatouk, 2018). The concept of TOD was introduced by Taki, who used a mixed space pattern to encourage people to live around transit facilities to reduce dependence on driving private vehicles by becoming commuters (Taki & Maatouk, 2018).

The components in the development of the TOD concept are as follows:

1. There is a circulation network (road);
2. Bus Rapid Transit and its stops;
3. Pedestrian and cyclist facilities to save the movement of motor vehicles;
4. Public facilities such as parks, schools, libraries, etc.;
5. Dedicated parking area

With development concentrated on developing residential and commercial areas around mass transit stations, the TOD concept will reduce the use of private vehicles and encourage intensive use of public transportation (Carlton, 2009). According to Cervero (2004), the TOD area should have three essential aspects, namely density, diversity, and design. Density discusses high land use intensity, then diversity discusses the diversity of land use and types of activities in the area, and finally, design related to the design of areas that are friendly to pedestrians and cyclists (Taki et al. 1, 2018).

## RESULT AND DISCUSSION

Gelora Karno Station (GBK) is a Jakarta MRT station located in the Gelora Karno area, Central Jakarta. This station is part of MRT Jakarta Phase 2A, inaugurated on March 24, 2022. Gelora Karno Station is located under Jalan Pintu Satu Senayan, precisely in front of door 6 Gelora Karno. The station has two train lines and two platforms. The station also has an escalator, elevator, and toilet facilities. Gelora Karno Station serves trips from Lebak Bulus to Bundaran, HI, and vice versa. This station is also one of the stations that is a transit point for MRT Jakarta and Transjakarta users (Taki et al. 1, 2023).

Gelora Karno Station has several advantages, including:

1. Strategic location near Gelora Karno, Senayan City, and the DPR/MPR RI Building.
2. Good accessibility, because it can be accessed through public transportation MRT Jakarta, Transjakarta, KRL Commuter Line, and public buses.
3. Complete facilities, including escalators, elevators, toilets, waiting rooms, food and beverage outlets, automatic ticket machines, and travel information.

Gelora Karno Station is expected to become one of the most visited Jakarta MRT stations, primarily when significant events are held at Gelora Karno. The condition of intermodal integration around the Gelora Karno area is quite adequate. However, it is just that there are still many people who use private vehicles, causing congestion around the area. Accessibility to the station and bus stop and pedestrian and cyclist paths are adequate. There are several KRL, MRT, and Busway Stop stations around the GBK area, namely:

### KRL Station

1. Sudirman Station
2. BNI City Station
3. Rubber Station
4. Palmerah Station
5. Kebayoran Station

### MRT Station

1. BNI Dukuh Atas Station
2. Setia Budi Astra Station
3. Downstream Dam Station

4. Istora Mandiri Station
5. Senayan Station

#### Busway Stop

1. Dukuh Atas Bus Stop
2. Halte Karet Sudirman
3. Lower Dam Stop
4. Halte Polda Metro Jaya
5. Hold Gelora Karno
6. Halte Bunderan Senayan
7. Halte Masjid Agung
8. Keep Simprung
9. Kebayoran Lama Market Stop

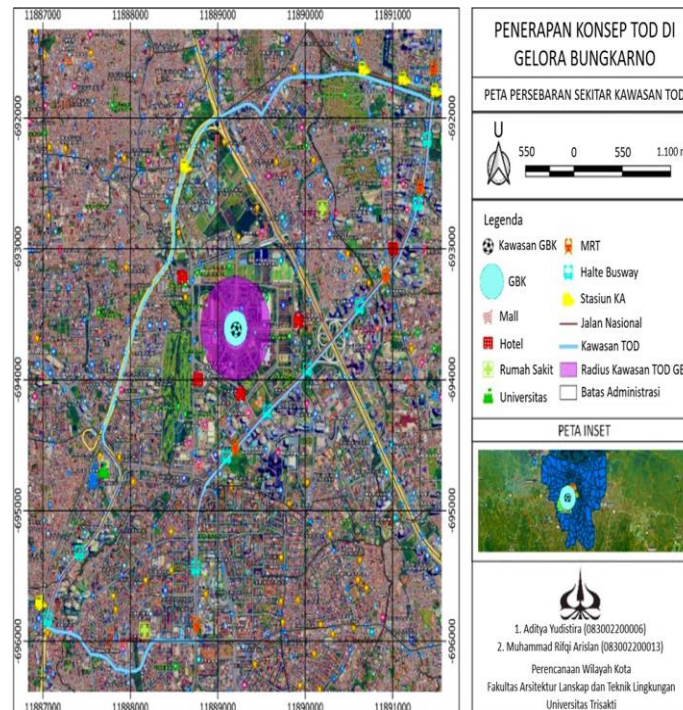


FIGURE 1. Map Around TOD Area

## CONCLUSION

This study explores the application of the concept of Transit Oriented Development (TOD) around Gelora Karno Stadium (GBK) with the aim of increasing economic growth, facilitating access to integrated public transportation, and reducing dependence on private vehicles to reduce air pollution levels in the Jakarta area. Gelora Karno Station, as part of MRT Jakarta, is one of the important transit points with a strategic location and complete facilities. Good accessibility through public transportation modes such as MRT Jakarta, Transjakarta, KRL Commuter Line, and public buses provides advantages for users. Although intermodal integration is adequate, challenges related to dependence on private vehicles still exist, causing congestion. Nevertheless, awareness of the importance of public transportation is increasing in the community. In the context of TOD development, the implementation of the concept around GBK shows positive potential for economic growth and efficiency of public transportation, with the presence of MRT stations, KRL, and busway stops. Further efforts are needed to increase public awareness of switching to public transportation, as well as further coordination between related parties to maximize the potential of Transit Oriented Development around Gelora Karno, in accordance with the current dynamics that place public transportation as the main solution in facing urban mobility challenges and building a sustainable environment.

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# Application of Transit Oriented Development (TOD) Concept in Gelora Bung Karno Area

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**Abstract:** In the present era, many individuals rely on public transportation to meet their daily needs, particularly in Jakarta, Indonesia. Various options, such as trains and buses, serve as the primary choices for public transportation. This study, which focuses on the Gelora Bung Karno Stadium (GBK) area, explores the implementation of the Transit Oriented Development (TOD) concept. TOD is a planning strategy that aims to create compact, mixed-use communities centered around transit stations, with the intention to enhance economic growth, facilitate access to integrated public transportation, and reduce reliance on private vehicles to mitigate air pollution levels in the city. The research findings indicate that applying this concept can positively impact economic development and the efficiency of public transportation while concurrently fostering a cleaner and more sustainable environment for urban communities. This study is pertinent to current dynamics, where an increasing number of individuals are opting for public transportation as a primary solution to address urban mobility challenges.

**Keywords:** Public Transportation, Transit Oriented Development, Gelora Bung Karno Stadium, Integrated Public Transportation

## INTRODUCTION

In the era of urbanization and rapid economic development like today, public transportation is crucial in meeting people's mobility needs, especially in urban areas such as Jakarta, Indonesia (Ibraeva et al., 2020). Reliance on public transport is increasingly becoming a trend among individuals in response to the demands of modern life (Knowles et al., 2020). One of the areas that is the focus of research in this regard is around Gelora Karno Stadium (GBK), which is one of the important activity centers in Jakarta. By observing this trend, this research explores the application of Transit Oriented Development (TOD) in the area around Gelora Karno Stadium. This concept is not only seen as a solution to improve the efficiency of public transportation but also as an effort that can significantly boost the economic growth of the local community, fostering a promising future for the area (Lund, 2006). This area is considered strategic because it is a central point in public transportation services, including trains and buses, which are the backbone of mobility in Jakarta (Taki et al. 1, 2017).

Through this study, it is hoped that new insights can be found on the impact of implementing the TOD concept in the area around GBK, both in terms of economic growth and increasing the efficiency of the integrated public transportation system (Taki et al. 1, 2017). In addition, this study also seeks solutions to the problem of dependence on private vehicles, which is a potential source of air pollution in urban environments. By detailing this background, this study aims to significantly contribute to understanding the concept of Transit Oriented Development and its application in urban contexts, especially around Gelora Karno Stadium.

## LITERATURE REVIEW

Transit-oriented development (TOD) is the restructuring of urban development by maximizing mixed land and integrating it with healthy lifestyles (walking and cycling) and focusing on mass-scale urban transit facilities (Taki et al., 2018). TOD is widely seen in the integrated development of train stations and bus rapid transit as mass transportation facilities for commuters (Taki & Maatouk, 2018). The concept of TOD was introduced by Taki, who used a mixed space pattern to encourage people to live around transit facilities to reduce dependence on driving private vehicles by becoming commuters (Taki & Maatouk, 2018).

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With development concentrated on developing residential and commercial areas around mass transit stations, the TOD concept will reduce the use of private vehicles and encourage intensive use of public transportation (Carlton, 2009). According to Cervero (2004), the TOD area should have three essential aspects, namely density, diversity, and design. Density discusses high land use intensity, then diversity discusses the diversity of land use and types of activities in the area, and finally, design related to the design of areas that are friendly to pedestrians and cyclists (Taki et al. 1, 2018).

## RESULT AND DISCUSSION

Gelora Karno Station (GBK) is a Jakarta MRT station located in the Gelora Karno area, Central Jakarta. This station is part of MRT Jakarta Phase 2A, inaugurated on March 24, 2022. Gelora Karno Station is located under Jalan Pintu Satu Senayan, precisely in front of door 6 Gelora Karno. The station has two train lines and two platforms. The station also has an escalator, elevator, and toilet facilities. Gelora Karno Station serves trips from Lebak Bulus to Bundaran, HI, and vice versa. This station is also one of the stations that is a transit point for MRT Jakarta and Transjakarta users (Taki et al. 1, 2023).

Gelora Karno Station has several advantages, including:

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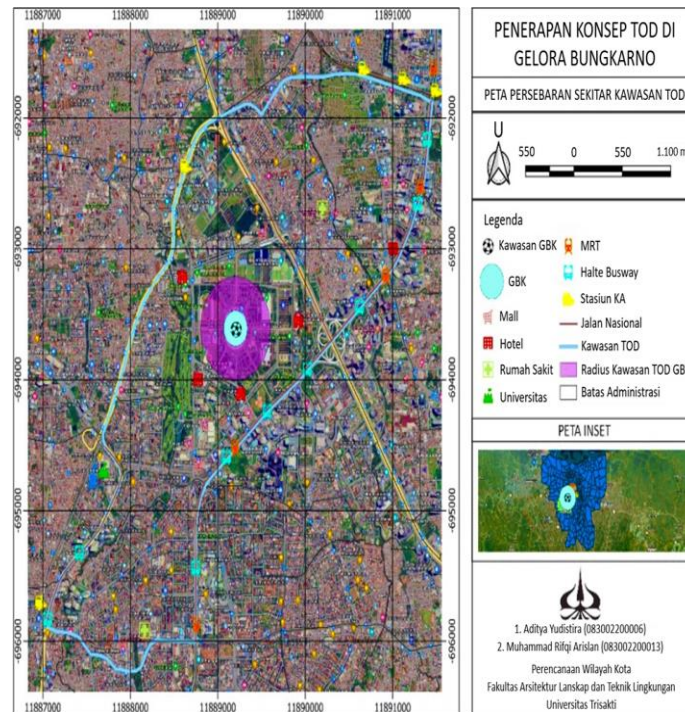


FIGURE 1. Map Around TOD Area

## CONCLUSION

This study explores the application of the concept of Transit Oriented Development (TOD) around Gelora Karno Stadium (GBK) with the aim of increasing economic growth, facilitating access to integrated public transportation, and reducing dependence on private vehicles to reduce air pollution levels in the Jakarta area. Gelora Karno Station, as part of MRT Jakarta, is one of the important transit points with a strategic location and complete facilities. Good accessibility through public transportation modes such as MRT Jakarta, Transjakarta, KRL Commuter Line, and public buses provides advantages for users. Although intermodal integration is adequate, challenges related to dependence on private vehicles still exist, causing congestion. Nevertheless, awareness of the importance of public transportation is increasing in the community. In the context of TOD development, the implementation of the concept around GBK shows positive potential for economic growth and efficiency of public transportation, with the presence of MRT stations, KRL, and busway stops. Further efforts are needed to increase public awareness of switching to public transportation, as well as further coordination between related parties to maximize the potential of Transit Oriented Development around Gelora Karno, in accordance with the current dynamics that place public transportation as the main solution in facing urban mobility challenges and building a sustainable environment.



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