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Universitas Trisakti, Jakarta, Indonesia

Email: dianahendrawan@trisakti.ac.id
(<mailto:dianahendrawan@trisakti.ac.id>)

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Novri Youla Kandowanko

Jurusan Biologi FMIPA, Universitas Negeri Gorontalo, Gorontalo, Indonesia

Email: novrikandowanko@ung.ac.id
(<mailto:novrikandowanko@ung.ac.id>)

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Sunarsih

Departemen Matematika, Fakultas Sains dan Matematika, Universitas Diponegoro, Semarang, Indonesia

Email: sunarsih@lecturer.undip.ac.id (<mailto:sunarsih@lecturer.undip.ac.id>)

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Catur Retnaningdyah

Jurusan Biologi Fakultas MIPA, Universitas Brawijaya, Malang, Indonesia

Email: caturretnaningdyah@gmail.com
(<mailto:caturretnaningdyah@gmail.com>)

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I Wayan Nurjaya

Jurusan Ilmu dan Teknologi Kelautan, Fakultas Perikanan, Institut Pertanian Bogor, Bogor, Indonesia

Email: i.wayan.nurjaya@apps.ipb.ac.id
(mailto:%20i.wayan.nurjaya@apps.ipb.ac.id)

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Riana Ayu Kusumadewi

Jurusan Teknik Lingkungan, Fakultas Arsitektur Lanskap dan Teknologi Lingkungan, Universitas Trisakti, Jakarta, Indonesia

Email: rianaayu.kusumadewi@gmail.com
(mailto:%20rianaayu.kusumadewi@gmail.com)

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Nur Intan Mangunsong

Jurusan Arsitektur Lanskap, Fakultas Arsitektur Lanskap dan Teknologi Lingkungan, Universitas Trisakti, Jakarta, Indonesia

Email: nurintan@trisakti.ac.id (mailto:%20nurintan@trisakti.ac.id)

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Qurrotu Aini Besila

Jurusan Arsitektur Lanskap, Fakultas Arsitektur Lanskap dan Teknologi Lingkungan, Universitas Trisakti, Jakarta, Indonesia

Email: qurrotu@trisakti.ac.id (mailto:%20qurrotu@trisakti.ac.id)

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Martina Cecilia Adriana

Jurusan Teknik Planologi, Fakultas Arsitektur Lanskap dan Teknologi Lingkungan, Universitas Trisakti, Jakarta, Indonesia

Email: martinacecilia91@gmail.com (mailto:martinacecilia91@gmail.com)

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Reza Fauzi

Jurusan Arsitektur Lanskap, Fakultas Arsitektur Lanskap dan Teknologi Lingkungan, Universitas Trisakti, Jakarta, Indonesia

Email: reza.fauzi@trisakti.ac.id (mailto:reza.fauzi@trisakti.ac.id)

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IMPLEMENTATION OF THE TRANSIT ORIENTED DEVELOPMENT (TOD) CONCEPT AT TANAH ABANG STATION, TANAH ABANG, CENTRAL JAKARTA

Herika Muhamad Taki^{1*}, Alisha Putri Negara², Ros Dwita Gresia Parapat³

^{1,2,3}Urban and Regional Department, Faculty of Architecture Landscape and Environmental Technology, Universitas Trisakti

*E-mail: herika@trisakti.ac.id

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ABSTRACT

Reduced land for development, congestion due to the large number of private transportation, and air pollution are some of the problems of big cities like Jakarta that deserve to be solved with efficient solutions. Transit Oriented Development (TOD) is a concept for developing a transit facility that has the principle of maximizing land and improving adequate public facilities. Tanah Abang Station is one of the largest stations in Jakarta which acts as a Primary Activity Center. In this regard, planning is needed so that the Tanah Abang station is integrated with other modes of transportation to increase the effectiveness of the station in the development of the area and activities around it. The research aims to see the suitability of the application of the TOD area at Tanah Abang Station by analyzing the supporting facilities there and the availability of transportation facilities with the help of ArcGis software to determine the suitability conditions of the TOD concept.

Keywords: ArcGis Software; Public Transportation; Tanah Abang Station; Transit Oriented Development (TOD); TOD Concept

1. INTRODUCTION

In the last few decades, population growth has increased massively. Thus, population density is increasing day by day in various regions. Of course, urban areas are one of the areas most significantly affected. Some of the impacts triggered by regional density include a decline in the quality of the living environment, the emergence of slum areas in urban areas with inadequate housing, and also traffic jams (Guthrie & Fan, 2016).

Jakarta is a dense and busy capital, because it is the center of various economic and government activities. These activities are supported by various modes of transportation. It is not surprising that transportation is one of the obstacles to people's mobility when traffic jams occur. According to data from the DKI Jakarta Central Statistics Agency (BPS) for 2022, the number of motorized vehicles continues to increase every year. In the last five years, the most rapid increase occurred in 2021, namely 7.60 percent. The government is trying to change people's behavior to switch to public transportation (Stojanovski, 2020).

One way to change people's behavior to switch to public transportation is by implementing a Transit Oriented Development (TOD) based development concept. TOD is a city area development idea that is oriented towards providing maximum access to passengers. Especially public transportation such as trains and buses with the aim of creating a comfortable atmosphere that is environmentally friendly and equipped with various facilities such as parking, parks, offices, etc., this requires a compact and mixed combination of residential and commercial areas to facilitate the development of transportation. general transit area-based (Mohamad et al., 2021).

In the Jakarta city area, especially in the Tanah Abang area, the TOD concept is being developed. This area already has a Tanah Abang station and a Transjakarta bus stop which are integrated with various facilities located nearby. Tanah Abang Station is a TOD (Transit Oriented Area) center which serves trade and office activities in Central Jakarta (Suryani et al., 2020).

2. METHODS

This research is qualitative in nature using secondary data. Qualitative research is research that intends to understand phenomena about what is experienced by research subjects, for example behavior, perceptions, motivations, actions, etc. holistically, and by means of descriptions in the form of words and language, in a special natural context and by utilizing various natural methods. To describe the implementation of the TOD area at Tanah Abang Station, various data obtained from agency websites as well as government documents and related articles, journals and theses are needed (Taki & Maatouk, 2018).

3. RESULT AND DISCUSSION

In principle, the TOD concept in station design aims to provide alternatives and solutions to the problems and growth of passengers using train services who tend to experience sprawling/expansion problems. By creating a system that is interconnected and within reach of pedestrians with a travel time of less than 15 minutes to change modes of

transportation and reach the center of commercial and office activities. It is hoped that the accumulation of transit patterns can provide solutions in the transportation system in the Jakarta sub-city area(Taki et al., 2024).

The objectives in designing stations with a TOD system include:

1. Accelerate community accessibility in reaching commercial points in the Tanah Abang area.
2. Increasing mobility to support productive city progress.
3. It is hoped that it can change people's mindset to use it more.
4. public transportation rather than private vehicles.
5. Take part in improving the quality of public services, especially in the field of transportation services.
6. Obtain a new basic foundation in designing a station that is able to provide solutions to existing problems.

Some of the benefits of designing stations with the TOD concept are:

1. Increasing accessibility and mobility of city residents and surrounding areas.
2. Reducing people's dependence on the use of private vehicles.
3. As a design reference in designing a station.
4. Reduce traffic congestion in the area or around the station location.
5. Effective in time and costs in traveling.
6. Increasing economic growth and development of the surrounding area.

Tanah Abang Station (THB) or Jakarta Tanah Abang Station is a large type A class train station located in Kampung Bali sub-district, Tanah Abang sub-district, Central Jakarta city, precisely to the east of the West Flood Canal and south of the Kalibaru Flyover Bridge. This station, which is located at an altitude of +9 meters, only serves the KRL Commuter Line. Tanah Abang Station is also the terminal station for the Rangkasbitung Commuter Line to the southwest region of Jabodetabek such as most of South Jakarta, Tangerang Regency, South Tangerang City, and northern parts of Bogor Regency and Lebak Regency, Banten(Taki et al., 2018).

Table 1. Implementation of TOD based on ITDP Indicators

Variables/Indicators	Strategy Implementation	Target
<i>Walk (walk), connect (connect)</i>	The existence of a multi-purpose pedestrian bridge makes pedestrians feel safe and comfortable connecting to stations, bus stops and shopping areas. 	Pedestrian safety and comfort accompanied by easy and integrated access

	Figure 1 Pedestrian Bridge in Tanah Abang	
Compact (close up) and transit (transport general), shift (switch)	Availability of public transport, ie <i>Commuter line</i> trains , Transjakarta buses, Mikrotrans Jaklingko, as modes cheap, safe and transportation comfortable.  Figure 2 Busway stop in Tanah Abang  Figure 3 <i>Commuter line</i> train at Tanah Abang station Apart from that, there are Gojek and Grab <i>shelters</i> to make it easier to order online motorbike taxis  Figure 4 Online Motorcycle Taxi Shelter	Create society Switch to vehicles general so reduce pollution air and congestion.

<i>Density _</i>	It was recorded that 170,428 people used the commuterline to mobilize.  Figure 5 Commuter Line Train Users at Tanah Abang Station	
Mix (Mixed)	Provided television as scheduling train arrivals which can include advertisements, as well as various kinds of food and drink sales there so that KRL users (especially those who transit) no need to leave the station.  Figure 6 Train Scheduling Television  Figure 7 Various shops selling at Tanah Abang station	Addition income from means of advertising and shop rental, as well create user KRL be comfortable because of complete facilities and infrastructure

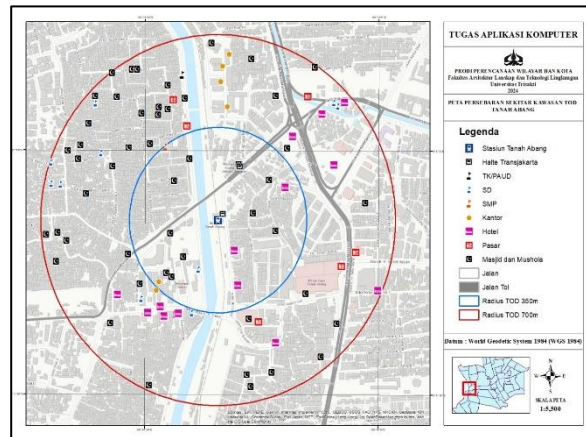


Figure 1. Distribution around Tanah Abang TOD Area

The zoning of the Tanah Abang TOD area consists of :

1. Transjakarta bus stop (Jaklingko 2)
This bus stop serves Central Jakarta routes, such as Tanah Abang-Gondangdia Station (1H), Blok M-Tanah Abang (1N), Tanah Abang-Senen (1R), Kampung Melayu-Tanah Abang (5F), Kampung Melayu-Tanah Abang Via Cikini (5M), Kebayoran Lama-Tanah Abang (8C), Tanah Abang-Batu Sari Kebon Jeruk (8K) and Pasar Minggu-Tanah Abang (9D).
2. Existing building objects
Within the TOD radius area of Tanah Abang Station there are several building.

4. CONCLUSION

The application of the TOD concept at Tanah Abang Station is very beneficial for the community, especially for pedestrians who travel to work or school in the Tanah Abang area. The station is close to the JPO and Transjakarta bus stop, making the Tanah Abang station area suitable for use as a TOD area. Tanah Abang Station has started to be organized like public transportation which has special lanes to pick up and drop off passengers at the station so they don't crowd on the shoulder of the road.

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