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Passengers' Deviant Behavior Mapping in Duri Train Station

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Abstract. *The lack of train station facilities influences the passengers' deviant behavior. This paper aims to analyze the Pattern of Commuter Line passengers' behavior in Duri Station. In collecting data regarding the passengers' behavior, we observed the passengers using the Place Centeres Mapping method. This observation technique aims to understand how people utilize or accommodate their behavior at a particular time and location in the train station. This research model is divided into two stages. The first stage consists of observation and semi-structured interviews with the passengers. The second stage examines the passengers' behavior based on location within the train station. In this study, we analyzed the data through data triangulation and spatial analysis, along with several theoretical discussions about where, when, and why the passengers conduct deviant behavior. The results showed that passengers' deviant behavior was based on three components of the station zones: the arrival zone, main facilities zone, and platform zone. The main facilities and platform zones are more prone to passengers' deviant behavior. The most common deviant behaviors are pickpocketing and verbal harassment, whereas the least deviant is sitting on the platform floors. These deviant behaviors occur mainly due to the fact that during peak hours, there are less security guards than there are passengers.*

Keywords: *deviant behavior, train station, passengers, commuter line, peak hour*

1. Introduction

The term Commuter Line was not invented until 2010. Prior to 2010, the Commuter Line was called the economy-class train, where the train cars had no air conditioning (AC), the doors and windows could not be closed, unauthorized vendors freely roamed to sell their merchandise, trash was scattered everywhere on the floors, and it was common occurrence that many passengers would climb up the roof of the train cars, and sat there throughout the journey (Sujatmiko and Harianto, 2014; Nazwirman and Hulmansyah, 2017). Since 2013, after the economy-class train “evolved” into the Commuter Line, the condition of the trains and stations improved: it was cleaner, safer, more modernized and more comfortable. These conditions changed the passengers' behavior, as well as the situation, condition, and environment (Skinner, 1971).

Changes in the passengers' behavior correlate with the increasing interest for people to take the Commuter Line. However, some stations still lack the adequate spaces and facilities needed (Zubair and Chotib, 2020). Adhi (2012) argues that the train company should be able to provide proper facilities and infrastructure in relation to the increasing demand as a means to prevent deviant

behavior from occurring. For this reason, the element of space in the station is an obligatory factor in relation to passengers' behavior. Researches on the passengers' behavior have been conducted by: (Basyarah, 2014). with regards to the Commuter Line passengers' affordances and adaptation, (Zubair *et al.*, 2019) concerning the passengers' movement behavior, (Sujatmiko and Harianto, 2014) regarding deviant behaviors that occur inside the passenger train cars, (Avineri and Goodwin, 2010) on the changes in individual behavior based on incidents during a trip, and (Kusumaningtyas, 2014) concerning the effects that station facilities have on the passengers' behavior.

Many researches using behavioral mapping have also been conducted to study an individual's activities, of which one of them was (Bernhardt *et al.*, 2004) in a hospital, (Larson *et al.*, 2005) in a greengrocer, (Milke *et al.*, 2009) in residence care center, (Cosco *et al.*, 2010) in the public space of a residential neighborhood, and (Bouchard *et al.*, 2014) in a train station and museum. Therefore, this research aims at analyzing and studying the spatial pattern of Commuter Line passengers' deviant behaviors in the station. The station selected as the location of research is the Duri Station. This station is one of the seven transit stations that are used as transit points for the Commuter Line's passengers en route to the City of Tangerang and the City of Jakarta.

2. Research Methodology

Data collection was carried out using methods of observation and Place Center Maps. Research observation method consists of the researcher's observation as a Marginal Participant or an observer who flexibly participated in the activities taking place in the research location (Winata *et al.*, 2014). Meanwhile, the observation method is set up using Place Center Maps described below.

2.1. Place Centered Maps and Settings

The observation method used is the Place Centered Maps. The Place Centered Maps method is used to see how individuals behave in a certain location/place (Sommer, R., & Sommer, B. B, 2001). The purpose of this observation technique is to understand how individuals/groups use, utilize or accommodate their behavior during a certain time and in a certain location (Makalew and Waani, 2015). The location referred to in this research is divided into three, namely the Arrival Zone, Main Zone, and Platform Zone (Vidal, L., 2013). The data collected in the observation involves forms of deviant behavior within the three zones of the station. Observations were made during both weekdays and weekends. Each day is divided into peak-hour times and off-peak-hour times. The peak-hour times during weekdays are different from those during weekends. Similarly, the off-peak hours during weekdays are different from those during weekends as well. Each period of time is observed within the arrival, main, and platform zones as described in (Table 1).

2.2. Mapping Technique and Analysis

The deviant behavior data was processed with the ArcGIS program using the overlay analysis techniques. (Budiyanto, 2010) explained that in conducting overlay analysis techniques, spatial conclusions are drawn after the process of overlapping several spatial attributes. The data is analyzed in a spatially descriptive manner and produces a map of the spatial pattern of deviant behavior in the train station, which pinpoints the spaces that are prone to and dominated by the Commuter Line passengers' deviant behavior.

The technique of analysis used in this research is the triangulation technique, which consists of the data source, previous studies, along with the findings and data collection method used. The data is then assessed and compared, with the meaning of the interpretation of the field findings being

checked afterwards. Cases that were related will then be used, discarding cases that show irregular relations (Miles and Huberman, 1984).

Table 1. Observation Setting Using Place Centered Maps

	Time	Arrival Zone	Main Facilities Zone	Platform Zone
Weekdays	Peak Hours (06.00-09.00 & 17.00-20.00)	Littering	Pickpocketing, littering	Waiting outside the safe line
	Off- Peak Hours (09.00-12.00 & 19.00 – 21.00)	Not queuing, smoking	Sitting on the stairs	Not waiting for disembarking passengers to get off first
Weekend	Peak Hours (08.00-10.00 & 16.00-18.00)	Not queuing, littering	Pickpocketing, littering	Jumping from the platform, smoking, sitting on the platform
	Off-Peak Hour (10.00-12.00 & 18.00-20.00)	Not queuing, smoking	Sitting on the stairs, smoking	Sitting on the platform, waiting outside the safe line

Source: Data collecting (2019)

3. Results and Discussion

Duri Station is a transit station on the Tangerang-Duri route. This causes the station to have a large number of passengers. The large number of passengers would then result in the the station's spaces being congested, increasing the chances of passengers conducting deviant behavior (Zubair *et al.*, 2019; Kusumaningtyas, 2014). Based on the interviews and observations performed, the forms of deviant behavior that occur in Duri Station are described in (Table 2).

Table 2. Forms of Deviant Behavior in Duri Station

Form of Deviant Behavior	Location	Time	Description
Smoking in the station environment	Platform 5 of the station, Arrival Zone of the Station, Main Zone of the Station	Peak & Off-Peak Hours	Dominated by male passengers
Littering	Motorcycle & Car Parking Zones, Station Platform Zone, Station Main Zone	Off Peak Hours	Varied passengers, especially those traveling in groups
Waiting for the train outside the safe area	Platforms 2 and 5 of the Station	Peak & Off-Peak Hours	Dominated by female passengers
Jumping from the platform to the Passenger's Crossing	Platform 5 of the Station	Peak Hours	Dominated by male passengers (jumping to the north passengers' crossing)
Walking against the flow when using the manual stairs	The manual stairs of platform 5	Peak & Off-Peak Hours	Varied passengers
Sitting on the station's platform or stairs	The manual stairs	Peak & Off-Peak Hour	Varied passengers
Not waiting for disembarking passengers to get off first	Platforms 2 and 5 of the Station	Peak & Off-Peak Hour	Dominated by female passengers
Crime (pickpocketing)	Charging Port, <i>Musholla</i> (prayer room)	Peak & Off-Peak Hour	The criminals are dominated by male passengers

Source: Data collecting (2019)

Based on the table above, eight forms of deviant behavior were identified, such as smoking, littering, and sitting on the platform and stairs, among others. Deviant behaviors that were most often found include waiting for the train outside of the platform's safe line, not waiting for disembarking passengers to get off first, and walking against the flow while using the manual stairs. Deviant behaviors in Duri Station are found both during peak and off-peak hours. This indicates that opportunities for the passengers to conduct deviant behavior are not limited to only when the station is crowded (Sujatmiko and Harianto, 2014).

3.1. Deviant Behaviors in the Arrival Zone of Duri Station

After undergoing construction, the arrival zone of the Duri Station became more spacious. More facilities were to be added with the increasing passenger demand (Kusumaningtyas, 2014), such as parking lots for four-wheeled and two-wheeled vehicles, as well as three accesses of the station entrance and exit. There were less forms of deviant behavior seen in this zone. Two forms of deviant behavior were identified, namely smoking and littering (Figure 1).

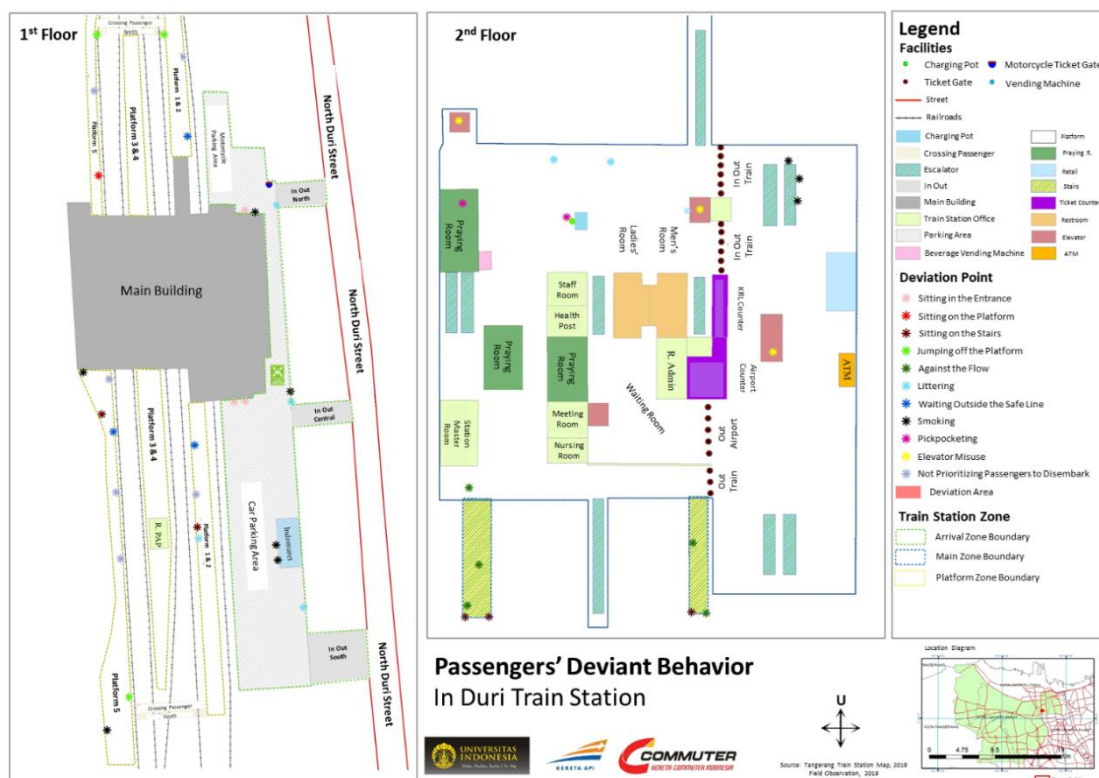


Figure 1. Distribution of Deviant Behavior in Duri Station.

Source: Data processing (2020)

From the observation, it is concluded that smoking is prohibited in all areas of the station, including the arrival zone that is still within the area of Duri Station. Security guards often find passengers smoking in the station platforms and in front of the ticket booth. Nowadays, the security guards who witness such behavior will certainly reprimand, advise, or even issue a punishment if necessary. However, during this research, the security guards (Sujatmiko and Harianto, 2014) did not perform the role of putting the passengers in order. Moreover, other passengers who have witnessed their fellow passengers smoking rarely perform a follow-up action against them. It is a fact that a warning from fellow passengers who witness the deviant behavior could reduce the space and opportunity for other passengers to be deviant (Zubair *et al.*, 2019).

The deviant behavior in the arrival zone is spread across various areas, especially around the main entrance gate of the main building. The distribution of points of deviant behavior can be seen in (Figure 2). Results of the observation show that littering was also found in the arrival zone, near the station’s entrance and exit accesses to be precise, and near the wall that divides the building area with the river canal in front of the station. Trash bins are rarely found in this area, resulting in some passengers throwing their trash to the canal.

The trash found may originate from the station itself (the mini market, vending machines, and those brought by the passengers) and from outside the station as well. The deviant behaviors occur both during peak and off-peak hours. Deviant behaviors were still found in areas where the security guards were too far, and there were no facilities for the passengers to throw away the trash properly.

3.2. Deviant Behaviors in the Main Zone of Duri Station

The main zone is located in the main building of the Duri Station, at the 2nd floor to be precise. The zone houses many facilities, such as the ticket gate, *musholla*, toilet, the office, health services room, ATM, retail shops, vending machines, charging ports, manual stairs and escalator. The deviant behaviors often found within these zones are smoking and criminal acts (pickpocketing). Furthermore, passengers tend to crowd and jostle against each other in this area. The main zone is an intermediary area for transit passengers to move from platform 5 to platform 2 of the station (Figure 2).

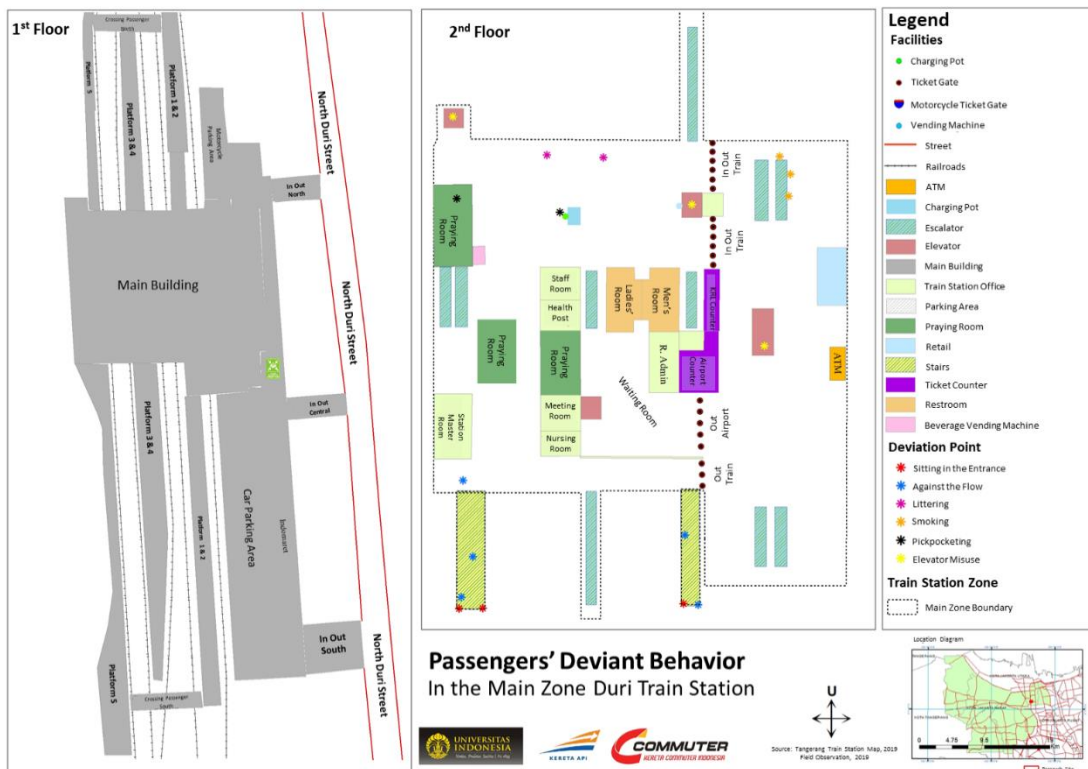


Figure 2. Distribution of Deviant Behaviors in the Main Zone of Duri Station.
Source: Data processing (2020)

Pickpocketing is a criminal act that is common in the main zone. It is often performed when the area is congested, when passengers are about to disembark from the coming train. As it turns out, the situation where passengers are crowded tend to trigger criminal activities (Bouchard *et al.*, 2014). In addition, such criminal actions are also found the station’s *musholla* and around the area where charging port facilities are located. It involves collaborative pickpocketing with several thieves in

action. The more crowded the passengers are, the higher the chances are for the crime to be performed.

The other deviant behavior that has been identified is the misappropriation of station lift. Misappropriation of the lift is a new deviant behavior in Duri Station. According to applicable regulation, the lift is only reserved for the disabled and priority passengers. However, findings on the field show that passengers using the lift are those who are not disabled and not considered priority passengers. The passengers that perform this deviant behavior are mainly female passengers, aged between 20 and 40 years old (Zubair and Chotib, 2020). Sometimes even male passengers also misuse the lift.

During peak hours, based on the observation, some security guards are seen positioned in the vital transit points to keep the crowd in order (Zubair *et al.*, 2019). However, in reality, the security guards' presence cannot control the massive flow of passengers during transit. In the research, (Sujatmiko and Harianto, 2014; Bouchard, *et al.*, 2014) it is shown that passengers tend to imitate the behavior of others in the crowd. Many passengers jostle when using the facilities due to the small width of the transit aream (Kusumaningtyas, 2014) that it ends up creating a 'bottle neck effect'. Thus, many passengers scramble and sometimes even run in a hurry to use the stairs, escalator, and lift, so it is not surprising to find a phenomenon of pushing and shoving between passengers.

The distribution of passengers' deviant behavior in the main zone is shown in (Figure 3). During the data collection stage, there are more or less seventeen points of deviation occurring, scattered around the station's main zone. Most of the locations of the incidents are on the station's manual stairs, escalator, lift, and other station facilities. The deviant behaviors could interfere with the flow of passengers during transit. Many deviant behaviors are found at the vital transit points (Zubair *et al.*, 2019). Those points should be guarded and strictly regulated by the station security guards to prevent passengers from getting obstructed during transit.

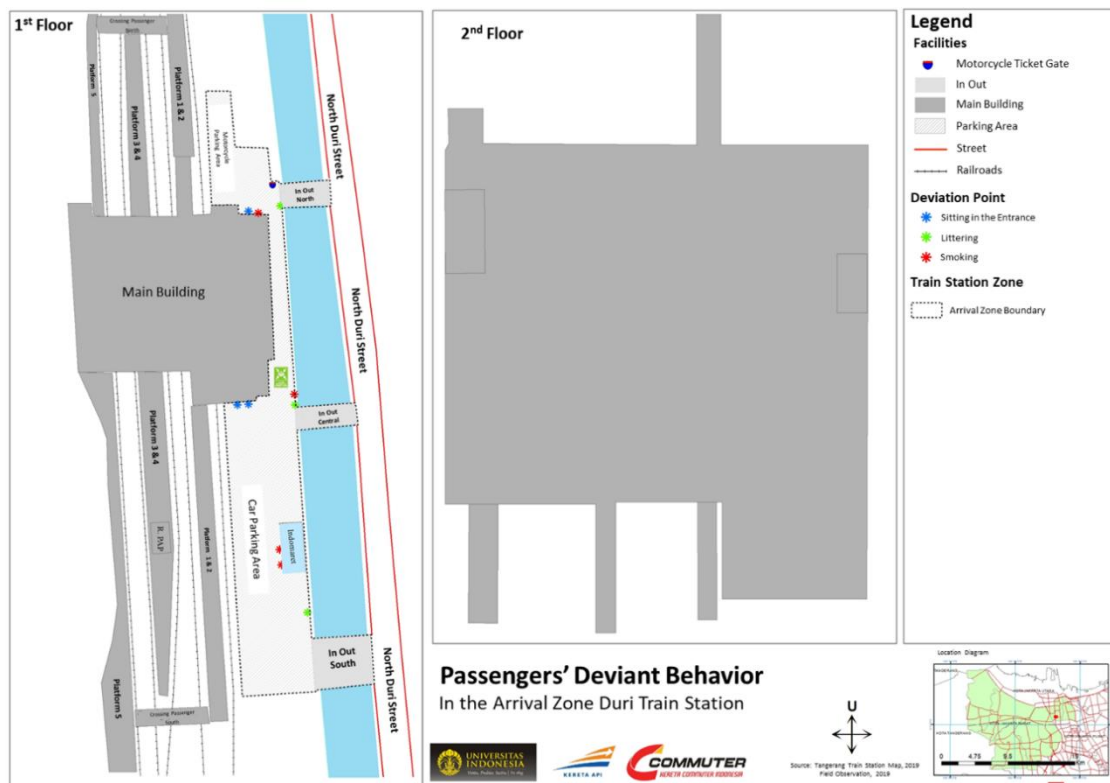


Figure 3. Distribution of Deviant Behaviors in the Arrival Zone of Duri Station.
Source: Data processing (2020)

3.3. *Distribution of Deviant Behaviors in the Platform Zone of Duri Station*

The platform zone of Duri Station is located on the 1st floor of the station. This zone houses various transit facilities, such as manual stairs, escalator, passenger's crossing, benches, and the travel information office. The zone is the most crowded area in Duri Station. Bearing in mind that Duri Station is a transit station, most passengers only use the access to the station's platform and main zones without having to exit from the station.

Based on results of observation and interviews, the platform zone is the zone where most cases of deviant behavior take place. Facilities in this zone could be deemed as inadequate (Sujatmiko and Harianto, 2014; Zubair *et al.*, 2019; Kusumaningtyas, 2014) Almost all forms of deviant behavior are found in this zone, from smoking, littering, sitting on the platform and stairs, waiting for the train outside of the safe line, not waiting for disembarking passengers to get off first, jumping from the platform to the railway tracks, walking against the flow on the manual stairs, to performing criminal acts. Observation results show that many deviant behaviors are frequently found in this zone because the station is crowded with both transiting passengers and departing passengers from the Duri Station.

In crowded situation, it is extremely difficult for the security guards to control the passengers (Sujatmiko and Harianto, 2014; Bouchard *et al.*, 2014). One of the moments where deviant behavior is prone to happen is when disembarking passengers collide with embarking ones (Zubair and Chotib, 2020).. Many passengers experience verbal or physical violence during these moments. Friction between passengers becomes unavoidable, triggering passengers to perform yet another deviant behavior (Bouchard *et al.*, 2014). There are other forms of deviant behavior that are not specified in the station's rules and regulation, but may disturb the other passengers' comfort, for example sitting on the platform and manual stairs. This deviant behavior is found both during peak and off-peak hours.

Deviant behavior in the form of sitting on the station's platform and manual stairs could hinder the flow of passengers. Many of those passengers will sit with their back to the station's wall, on the escalator entrance wall, or creating a semi-permanent seating arrangement using the items they are carrying. It shows that there are still plenty of spaces in the Duri Station that passengers can use while waiting for the train, such as the space behind the station's stairs, the space between the platform dividers, and the spaces that are overlooked by the security guard. These spaces sometimes escape the station security guard's observation, hence becoming prone to deviant behavior.

Based on the observation results, more or less eighteen points of deviant behavior have been identified in the platform zone of Duri Station (Figure 4). Most of them occur in platform 1, platform 2 and platform 5. The platforms are specified for the Commuter Line railway services and are always congested with transit passengers. Moreover, the less than adequate condition of the platforms, which is why they could not provide the best services for the passengers, is another problem in itself.

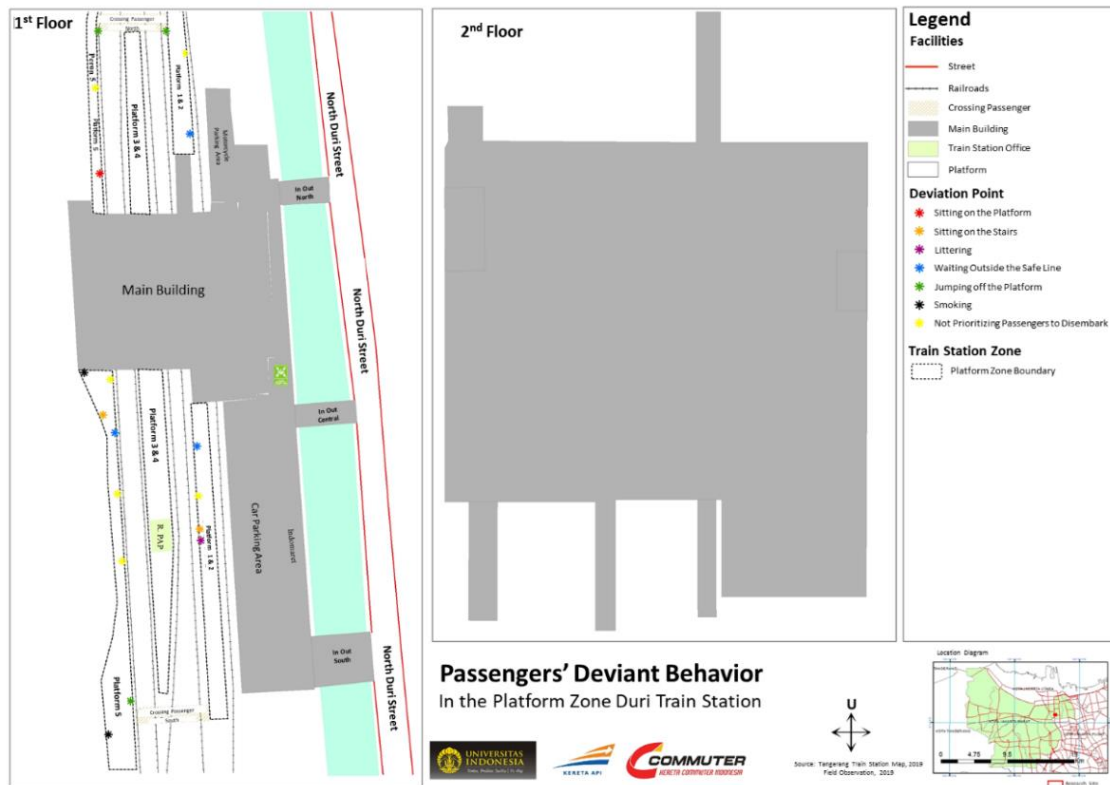


Figure 4. Distribution of Deviant Behavior in the Platform Zone of Duri Station.
Source: Data processing (2020)

4. Conclusions

Contrary to the previous research on deviant behaviors found in public transportation, which did not show any aspects associated with spatial aspects, in this paper, we found that passengers tend to conduct deviant behaviors in places they consider 'safe'. In addition, the passengers' deviant behavior may occur due to non-compliance and ignorance of the applicable rules and regulations in the station. Passengers' deviant behaviors are primarily found in the station's platform zones and tend to occur within the inadequate areas of the station. The following research will likely study the effects of facilities, spatial design, and rules and regulations on the passengers' behaviors.

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