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Measuring the Quality of Urban Amenities:
A Tale of Bekasi and Tangerang, Indonesia

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Abstract: *The aim of this study is to measure the quality of urban amenities in Bekasi and Tangerang regions, Indonesia. The urban amenities range from transportation, public goods and services, private consumption goods, and entertainment. In this study, we use both primary and secondary data in which the primary data are obtained from web scraping process while the secondary data are collected from the stakeholders' data publication. It can be summarised that Tangerang has many better urban amenities compared to Bekasi region.*

Keywords: urban amenities; quality measurement; Bekasi; Tangerang; Indonesia.
JEL Classification: F15; F23

1.   Introduction

Urban amenities are essential in determining people's quality of life in a certain city (Allen, 2015; Djamaluddin, 2012; Deller et al., 2001), which in turn affects people's decision to live there, either by attracting people to migrate to the city or enhancing people's willingness to stay there (Liao and Wang, 2019; Mulligan and Carruthers, 2011). Reflecting on that, we are interested in identifying the quality of urban amenities in Bekasi and Tangerang regions.[1] As regions located near Jakarta, the quality of their urban amenities may provide statistical insights for how people decide where to live, given that the average percentage of the commuting population[2] in both regions being the second- (11% in Bekasi) and third-highest (10% in Tangerang) amongst Jakarta, Bogor, Depok, Tangerang, and Bekasi (Jabodetabek) regions[3] (Statistics Indonesia, 2019). It implies that many people working in Jakarta choose those regions as their residential area based on the availability of urban amenities.

The Bekasi and Tangerang regions are 1,484.37 km^2 and 1,271.35 km^2, respectively, with a population in 2019 of 6.7 million and 7.3 million people. As stated, both regions are near Jakarta, with the average approximate distance from Bekasi and Tangerang about 20 km and 30 km, respectively. There are three tolls on the roads connecting Bekasi, while there is only one highway and one toll from Tangerang to Jakarta; public transportation to Jakarta and elsewhere (a train station Bekasi; an international airport Tangerang) is also available in both regions.

In terms of international trade, both regions have bonded warehouse zones to store imports and exports. The establishment of bonded zones may impact both regions' economies: for instance, Bekasi is mainly driven by manufacturing and bonded zones can facilitate produced goods. On the other hand, Tangerang's economy is primarily service-oriented.[4]

Urban amenities refer to site- or region-specific goods and services attracting people for living and working (Mulligan and Carruthers, 2011). They range from transportation and public goods and services to private consumption and entertainment.

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[1] Bekasi region consists of Bekasi City and Bekasi Regency, while Tangerang region consists of Tangerang City, Tangerang Regency, and South Tangerang City.
[2] Percentage of commuting population is calculated as total number of populations divided by number of populations commuting to Jabodetabek area.
[3] Jabodetabek is an abbreviation of Jakarta, Bogor, Depok, Tangerang, and Bekasi region and Jabodetabek refers to the Jakarta metropolitan area or a group of regions that nearly located to Jakarta. Other Jabodetabek regions here refer to Bogor as Depok has the highest percentage of commuting population by 19.6%.
[4] The highest distribution of gross domestic regional product by sector in 2018 in each city or regency are: Bekasi City (manufacturing industry by 34%), Bekasi Regency (manufacturing industry by 78%), South Tangerang City (real estate by 18%), Tangerang City (transportation and warehousing by 31%), and Tangerang Regency (manufacturing industry by 35%).

There are two main research questions in this paper:

(1) How to measure the quality of urban amenities in Bekasi and Tangerang regions?

(2) Which urban amenities predominate in each region?

The urban amenities discussed in this study are transportation, primary and secondary education, higher education, healthcare facility, restaurant, hotel, recreational park, and shopping centres. This paper is presented into the following sections: literature review, data, methodology, findings, and discussion for future works.

2. Literature Review

2.1. Transportation

In this study, we measure the quality of transportation in four dimensions: mobility, transportation system connectivity, convenience, and social acceptance (Litman, 2020). Mobility is defined as the ease of physical movement, and the quality of travel modes, measured using the units of frequency, speed, or comfort. Transportation system connectivity refers to the density of sidewalk, road, public transit network, and the quality of connections between modes. Convenience is explained as the ease of obtaining travel information, paying fares, and carrying luggage, while social acceptance refers to people's ability to use a transportation mode which depends on their social status. Each dimension is interpreted under several indicators stated in the data section; for instance:

(i) mobility dimension is presented by length of roads by condition, quantity and quality of bus stops and train stations, travel speed of public transportation, waiting time of public transportation, and daily schedule of public transportation;

(ii) transportation system connectivity is described by the best practice of transportation system connectivity in each region;

(iii) convenience is articulated as the number of mobile apps to obtain travel information and types of payment for public transportation; and

(iv) social status is described by the facilities provided in the public transportations.

2.2. Primary and Secondary Education

In this study, we calculate the quality of primary and secondary education using the two dimensions of performance, i.e. students and interpersonal relations. Performance of students is measured by the students' tests and national measurement data, while interpersonal relations are identified by a school climate questionnaire, and the classroom social atmosphere

(Juščáková, 2012). Referring to that, we measure the performance of students by using the national examination score data in secondary education,[5] while interpersonal relations are analysed by the number of students per teacher, classroom, and school in both levels of education (primary and secondary educations).

2.3. Higher Education

In this study, we describe the quality of higher education by referring to Law No. 12 from 2012 Regarding Higher Education and the provision of higher education accreditation under the National Accreditation Body for Higher Education of Indonesia. According to the Law, there are six types of higher education in Indonesia: academy, community academy, institute, polytechnic, college, and university. Two basic differences between them are whether they are academic, vocational, and/or professional education, as well as the scope of science and/or technology group (Table 1).

Table 1: Types of Higher Education in Indonesia

Types of Higher Education	Academic Education	Vocational Education	Professional Education	Group of Science and/or Technology
Academy	No	Yes	No	Only one or some of certain branches of science and/or technology
Community Academy	No	Yes	No	Only one or some of certain branches of science and/or technology, which are based on local content or certain special needs
Institute	Yes	Yes	Yes	Some of the groups of science and/or technology
Polytechnic	No	Yes	Yes	Various groups of science and/or technology
College	Yes	Yes	Yes	Only one group of science and/or technology
University	Yes	Yes	Yes	Various groups of science and/or technology

Source: Law No. 12 Year 2012 Regarding Higher Education, summarised by the authors. Available at: https://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=91045 (accessed 11 June 2021).

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[5] In this study, we only analyse national examination scores by subjects in secondary education (junior high school, senior high school, and vocational school) since no data are available for primary education (kindergarten and elementary school).

Indonesia also has an institution, i.e. the National Accreditation Body for Higher Education, assigned to conduct accreditation process in order to determine the eligibility of a major or a higher education in either academic or non-academic aspect. The accreditation measures four dimensions as follows:

- Quality of leadership and governance including integrity of vision and mission, human resource management system, strategic partnership, and internal quality assurance system.
- Quality of outputs and outcomes including the quality of graduates and science and innovation products, as well as the positive impact to the local community.
- Quality of process including the process of teaching, research, community dedication, and learning nuances.
- Quality of input including the human resources (lecturers and education staffs), students, curriculum, infrastructure, and financing.

After conducting a series of assessments, the higher education will be classified into three categories: excellent, very good, and good.[6]

2.4.   Healthcare Facility

We measure the quality of a healthcare facility by referring to two variables from the World Health Organization (WHO), and use hospital accreditation data from the Commission of Hospital Accreditation of Indonesia, and the Joint Commission International (JCI).

According to WHO (2010), some of the core indicators for monitoring healthcare in a designated area are the number of health facilities and health workers per 10,000 people. Meanwhile, the Commission of Hospital Accreditation has certified the hospitals in Indonesia since 1995 and categorises them into four levels: basic, intermediate, advance, and excellent.[7] According to the National Standard of Hospital Accreditation (effective since 1 January 2018), the accreditation assesses 16 aspects as follows:

(1)   Improvement in quality and patient safety

(2)   Hospital governance

(3)   Management of facility and safety

(4)   Pharmaceutical care and drug use

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[6] Referring to the Decree of National Accreditation Body for Higher Education (BAN-PT) No. 1 of 2020 concerning the accreditation mechanism of the National Accreditation Body for Higher Education, higher educations in Indonesia are encouraged to convert their accreditation level from A, B, and C to excellent, very good, and good, respectively.

[7] The recent regulation concerning hospital accreditation is stipulated under Decree of Minister of Health No. 12 of 2020.

(5)   Staff competence and authority

(6)   Access to hospitals and services continuity

(7)   Patient assessment

(8)   Patient services and care

(9)   Anaesthesia and surgical services

(10) National programs such as:

    a. Decreasing maternal and infant mortality rates

    b. Decreasing number of HIV/AIDS cases

    c. Decreasing number of tuberculosis cases

    d. Geriatric care

    e. Implementation of antimicrobial resistance control

(11) Patient safety goals

(12) Rights of patient and family

(13) Infection prevention and control

(14) Management of communication and education

(15) Management of information and health record

(16) Integration of health education in hospital care

Based on those aspects, the level of hospital accreditation is determined by the criteria as follows:

Table 2: Level of Hospital Accreditation

No.	Level of Hospital Accreditation	Criterion
1	Do not pass	If the score of 16 aspects is less than 60%
2	Basic	Minimum score of **four aspects** is 80% while the minimum score of the rest of aspects is 20%
3	Intermediate	Minimum score of **eight aspects** is 80% while the minimum score of the rest of aspects is 20%.
4	Advance	Minimum score of **12 aspects** is 80% while the minimum score of the rest of aspects is 20%.
5	Excellent	Minimum score of **all aspects** is 80%.

Source: Commission of Hospital Accreditation of Indonesia.

In addition, some of Indonesia's hospitals are also accredited by JCI. As an independent and non-profit organisation, JCI provides accreditation of international health care organisations in eight aspects: ambulatory care, behavioural health care, critical access hospital,

home care, hospital, laboratory services, nursing care centre, and office-based surgery accreditations. Some benefits of the accreditation are providing a competitive edge in the marketplace, providing recognition by insurers and other third parties, as well as aligning healthcare organisations with one of the most respected names in healthcare (Vaidya, 2014).

2.5. Restaurants

We observe the quality of restaurants under three indicators: product, price, and customer satisfaction. Product refers to selection of dishes while price refers to price competitiveness (Kukanja, 2017). Customer satisfaction belongs to attributes such as intention to return, to recommend the restaurant to others, and concerning the customers' satisfaction toward the dining experience (Suzana et al., 2011). We measure the customer satisfaction by number of reviews and average rating of each type of restaurants.

2.6. Hotels

We identify the quality of hotel under three indicators: price, facilities, and service quality in which those indicators affect the customer satisfaction and loyalty toward a hotel. Kumar et al. (2015) revealed that price affects both customer satisfaction and loyalty. Nurcahyo et al. (2017) emphasised that facilities and service quality affect customer satisfaction, and raise the customer loyalty to a hotel indirectly.

We define the hotel price as price per night, while service quality is measured by number of reviews and average rating of each hotel star level. Indonesia classifies hotels into starred (from one-star to five-star) and non-starred hotels (Table 3), in line with Decree of the Minister of Tourism and Creative Economy No. PM.53/HM.001/MPEK/2013 concerning Standard Business of Hotel. Every hotel in Indonesia must follow the Business of Hotel certification process conducted by the Tourism Business Certification Agency. The agency assesses both types of hotels (starred and non-starred hotels) under three aspects: product, services, and management in which each aspect has detail indicators. The detail indicators are scored from 1 to 5, wherein 1 is poor while 5 is excellent. The number of detail indicators and the minimum score are also different depends on the star level as shown by the Table 3.

Table 3: Number of Indicators and Score Range for Business of Hotel Certification by Types of Hotels

Types of Hotels	Number of Indicators			Total Indicators	Score Range (necessary and sufficient)
	Product	Services	Management		
Necessary condition					
Starred hotel	15	5	5	25	███
Non-starred hotel	7	5	4	16	███
Sufficient condition					
A five-star hotel	147	40	21	208	>= 936
A four-star hotel	126	29	21	176	728 – 916
A three-star hotel	111	23	17	151	520 – 708
A two-star hotel	51	11	8	70	312 – 500
A one-star hotel	46	9	7	62	208 – 292
Non-starred hotel	28	5	5	38	>=152

Source: Decree of Minister of Tourism and Creative Economy No. PM.53/HM.001/MPEK/2013 concerning Standard Business of Hotel. https://jdih.kemenparekraf.go.id/katalog-351-Peraturan%20Menteri.html (accessed 10 June 2021).

2.7. Recreational Parks

We assess recreational parks using features that encourage or discourage their use (Németh and Schmidt, 2011). Features that encourage their use are a sign announcing public space, availability of restrooms, or diversity of seating types, while the features that discourage their use include constrained hours of operation, the visible sets of rules posted, or the park location.

We planned to assess recreational parks by conducting a spot survey referring to Nemeth and Schmidt (2011). However, due to the COVID-19 pandemic, we could only measure the quality based on the number of reviews and value of ratings from Google Maps. We use three indicators: availability, popularity, and customer satisfaction. Availability is defined as the number of recreational parks weighted by the region size, popularity is defined as the total reviews, while customer satisfaction is defined as the average rating of the recreational parks weighted by the number of reviews.

2.8. Shopping Centres

We assess shopping centres through customers' satisfaction. The dimensions are communication, store assortment, price, recreation, service, security, decoration, events, accessibility, and loyalty (Abrudan and Dabija, 2014). Similar to recreational parks, we can only measure the quality based on the number of reviews and value of ratings from Google Maps. Moreover, we also describe the best shopping centre[8] in those regions using some of the dimensions stated in Abrudan and Dabija (2014) (see Annex 1).

As with recreation parks, we assess shopping centres by their availability, popularity, and customer satisfaction. Moreover, we identify the dimensions of store assortment, entertainment, and advertising in the best shopping centre in each region. Store assortment is defined as how the shopping centre arranges the shops in each floor based on the product category. Entertainment is defined as the availability of cinemas and children's playrooms, while advertising is defined as how well the shopping centre advertises the product or activity in their websites or social media.

3. Data and Methodology

We employ both primary and secondary data. The primary data are collected using web scraping of several websites such as Google Maps, Trafi, Zomato, and Traveloka, while secondary data are gathered from the data publications of Statistics Indonesia, Ministry of Education and Culture of Indonesia, National Accreditation Body for Higher Education of Indonesia, Commission of Hospital Accreditation of Indonesia, and Joint Commission International. We also collect additional information from related sources.

As we aim to compare which region has better urban amenities, some of the calculations are weighted by either region size or population size[9] to generate an equivalent comparison. Besides that, the average rating of urban amenities gathered from Google Maps, Zomato, and Traveloka (e.g. quality of bus stops and train stations, average rating by the types of restaurants, average rating by star level, average rating of recreational parks, and average rating of shopping centres) are also weighted[10] by the number of reviews to provide more accurate interpretation.

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[8] The best shopping centre in this study is defined as that which has the highest weighted rating value in Google Maps.

[9] For instance, the quantity of bus stops weighted by region and population size will result in the number per km^2 and the number available per person, respectively.

[10] Weighted average is calculated as the sum of each value multiplied by the weight.

In addition, for indicators that have more than 30 units of data, we use a t-test,[11] aiming to present a robust or a statistically proved comparison.

Table 4 summarises the urban amenities discussed in this study followed by the detail indicators to measure their quality, as well as the reference and the source of data.

Table 4: Quality Measurement of Urban Amenities

No.	Urban Amenities	Indicator	Reference	Source of Data
1	Transportation	- Length of roads by condition weighted by the region size - Length of roads by condition weighted by the population size - Quantity of bus stops and train stations - Quality of bus stops and train stations - Travel speed of public transportation - Waiting time of public transportation - Daily schedule of public transportation - Transportation system connectivity - Number of mobile apps to obtain travel information - Types of payment instrument in public transportation - Public transportation facility	- Litman (2020)	- Statistics Indonesia - Google Maps - Trafi - Google Play - App Store
2	Primary and secondary education	- National examination score in secondary education level - Number of students per teacher - Number of students per classroom - Number of students per school	- Juščáková (2012)	- Ministry of Education and Culture of Indonesia
3	Higher education	- Number of higher educations - Distribution by the types of higher education - Distribution by the accreditation category	- National Accreditation Body for Higher Education	- National Accreditation Body for Higher Education of Indonesia
4	Healthcare facility	- Number of health facilities per 100,000 populations	- WHO (2010) - Commission of Hospital	- Statistics Indonesia

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[11] A t-test is a type of inferential statistic utilized to determine whether there is a significant difference between the means of two groups.

No.	Urban Amenities	Indicator	Reference	Source of Data
		- Number of health facilities per 100,000 populations by types of healthcare facilities - Number of health workers per 100,000 populations by types of health workers - Number of hospitals by level of hospital accreditation (under Commission of Hospital Accreditation of Indonesia) - Number of hospitals by JCI accreditation	Accreditation of Indonesia - Joint Commission International (JCI)	- Commission of Hospital Accreditation of Indonesia - Joint Commission International
5	Restaurant	- Distribution by the types of restaurants - Average price of two by the types of restaurants - Number of reviews and average rating by the types of restaurants	- Kukanja (2017) - Suzana et al., (2011)	- Zomato
6	Hotel	- Distribution of hotels by star level - Average price per night by star level - Number of reviews and average rating by star level	- Kumar, et al., (2015) - Nurcahyo, et al., (2017)	- Traveloka
7	Recreational parks	- Number of recreational parks weighted by the region size - Number of recreational parks weighted by the population size - Number of reviews - Average rating of recreational parks weighted by the number of reviews	- Németh and Schmidt (2011)	- Google Maps
8	Shopping centre	- Number of shopping centres weighted by the region size - Number of reviews - Average rating of the shopping centres weighted by the number of reviews - Short description of the best shopping centres in each region	- Abrudan and Dabija (2014)	- Google Maps - Mall websites

Source: Compiled by the Authors.

4. Findings

4.1. Transportation

The quality of transportation is measured in four dimensions: mobility, transportation system connectivity, convenience, and social acceptance (Litman, 2020). At a glance, the quality of transportation in Bekasi is better compared to Tangerang since the value of the mobility indicators is higher, while there is no significant difference between the two regions in other dimensions (transportation system connectivity, convenience, and social acceptance).

As stated, mobility is defined as the ease of physical movement as well as the quality of travel modes which measured by the frequency, speed, or comfort (Litman, 2020). Referring to that, mobility is measured using the following indicators: length of roads by condition, quantity and quality of stops and stations, travel speed of public transportation, waiting time of public transportation, and daily schedule of public transportation.

Calculated using Statistics Indonesia data, Bekasi has longer good roads,[12] compared to Tangerang either weighted by region size or population size. In Figure 1, weighted by the region size, the length of roads by condition in Bekasi is significantly higher compared to Tangerang. This is because the roads (numerator) in Bekasi are much longer than Tangerang while the region sizes (denominator) are not significantly different. This is consistent with Figure 2. Weighted by population size, the length of roads by Bekasi is still significantly higher compared to Tangerang. The reason is similar as before in which the roads (numerator) in Bekasi are much longer than Tangerang, while the population sizes (denominator) are not significantly different. Shorter roads in Tangerang correlate with the regions' year of establishment and their expansion. Bekasi City and Tangerang City were established in 1997 and 1993, respectively, while Bekasi Regency and Tangerang Regency were established in 1950 and 1943, respectively. Though the Tangerang region is older than Bekasi region, it was still expanding until 2008 when South Tangerang City was established. The establishment of this new city implies that there are still many potential constructions of roads, residential areas, and infrastructure aiming to support the city's development.

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[12] The road condition in Indonesia is measured by International Roughness Index (IRI) which calculates the accumulation of road surface fluctuation (road ups and downs) in metres per 1 km. A good road is a condition when the IRI is under 4 or the length of road surface fluctuation is under 4 metres per 1 km. A moderate road is a condition when the IRI is between 4–8 or the length of road surface fluctuation is between 4–8 meters per 1 km. Otherwise, the damaged and severely damaged roads are the conditions when the IRI are above 8 or the lengths of road surface fluctuation are above 8 metres per 1 km.

Figure 1: Length of Roads by Condition Weighted by the Region Size, 2018–19
(in m/km^2)
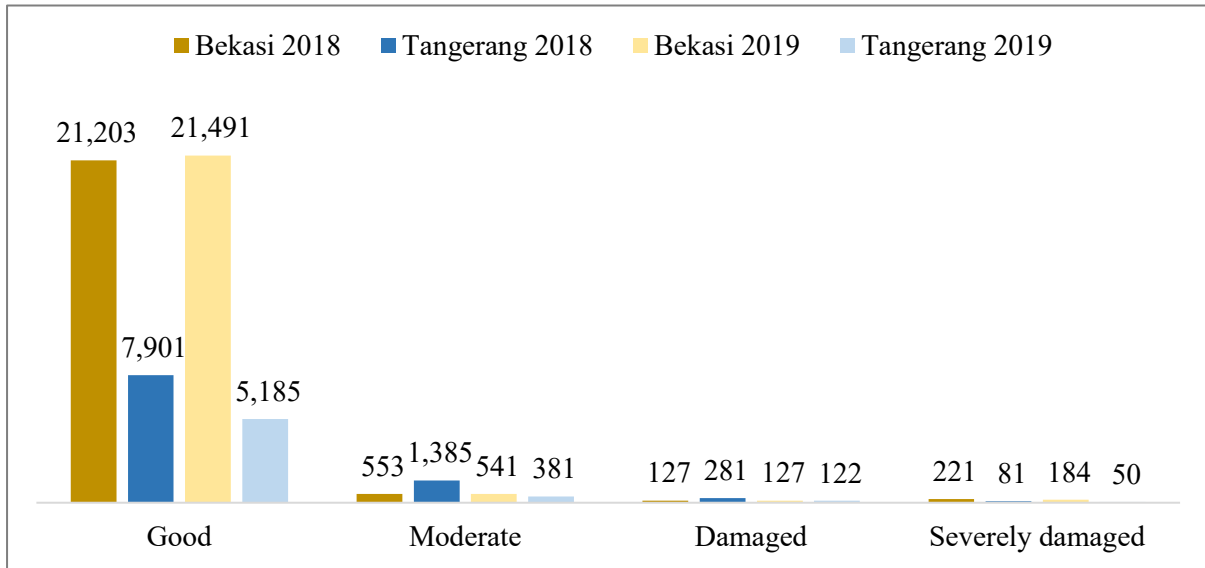
Source: Statistics Indonesia, calculated by the Authors.

Figure 2: Length of Roads by Condition Weighted by the Population Size, 2018–19
(in cm/person)
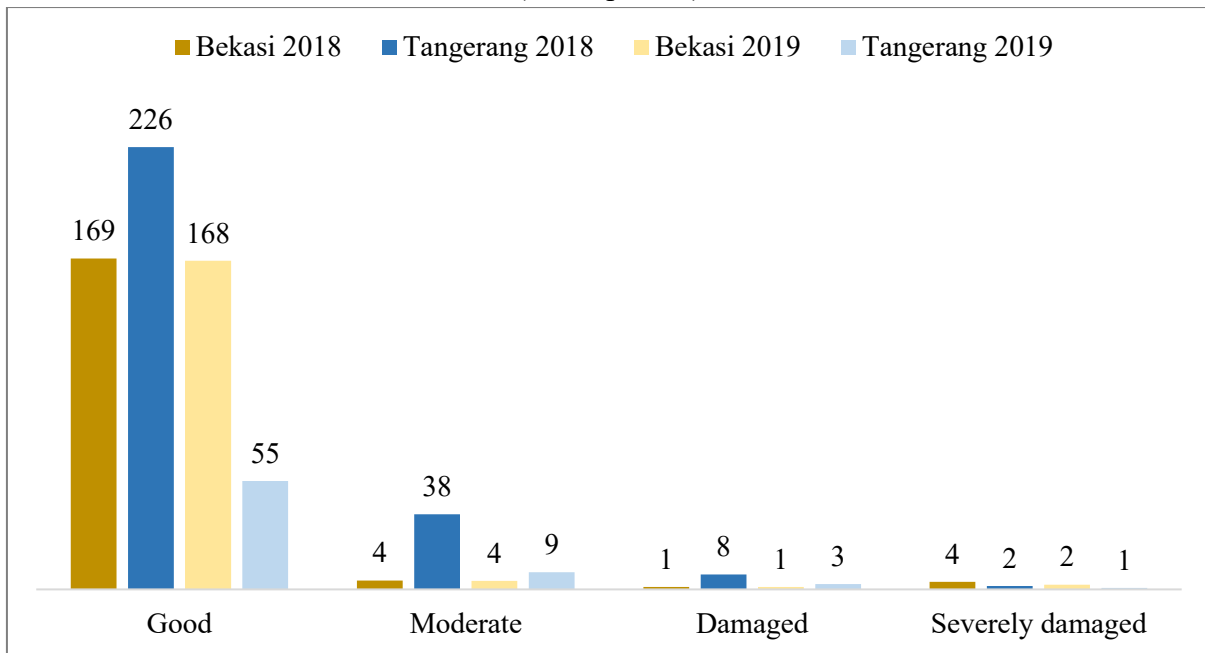
Source: Statistics Indonesia, calculated by the Authors.

Turning to public transportation, we also analysed electric trains, buses, and microbuses because all of them are widely used by citizens in Jabodetabek and the data are available in Trafi and Google Maps. It is interesting to note that, compared to the last decade, the number

of passengers of electric trains and buses (TransJakarta) in Jabodetabek increased 157% (from 124.3 million in 2010 to 320 million in 2018) (Statistics Indonesia, 2018) and 42.3% (from 86.9 million in 2010 to 123.7 million in 2016), respectively (TransJakarta, 2017). Moreover, microbuses are also included as one of the popular public transportations used by Bekasi and Tangerang citizens. Data show that the number of microbuses in Bekasi City is the second highest after Depok City, with 4,000 units and 4,222 units, respectively, in 2016, which was followed by Tangerang Regency as the third largest with 3,671 units in the same period (Directorate General of Land Transportation under Ministry of Transportation of Indonesia, 2016).[13] Weighted by the population size, in 2016, the availability of microbuses in Bekasi City was still the second-highest but lagged Bogor City by 1.4 units per 1,000 population and 3.2 units per 1,000 population, respectively. Following Bekasi City, Tangerang City and Tangerang Regency also have higher number of microbuses per 1,000 population, i.e. 1.2 and 1.1 units, respectively.

Table 5 shows that Bekasi has higher number of bus and microbus stops compared to Tangerang, while the opposite condition occurs in the number of electric train stations (both weighted by region size and population size). In terms of number of reviews and average rating, Bekasi has higher values than Tangerang. The higher average rating in Bekasi also indicates the quality of stops and stations there, as the supporting aspects of public transportation modes are slightly better than Tangerang.

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[13] In Indonesia, electric trains, established by PT. Kereta Commuter Indonesia (a subsidiary company of PT. Kereta Api Indonesia, known as Indonesia's state-owned railway company), provide commuting services in Jabodetabek. In Bekasi and Tangerang, there are buses as well that provide commuting services within a city or between cities. Buses could be established under private or public institutions. In this study, we only identify buses established under PT. Transportasi Jakarta or TransJakarta, a Jakarta state-owned bus company. In both regions, microbuses are also utilized as public transportation. Microbuses in Indonesia are established under private entities, but they are regulated under the Department of Transportation in each city or regency.

Table 5: Quantity and Quality of Bus Stops and Train Stations, 2020
(in unit and in index 1–5)

Types of public transportation	Indicators	Bekasi	Tangerang
Bus and microbus	Number of bus and microbus stops (in unit/km^2)	0.24	0.22
	Number of bus and microbus stops (in unit/100,000 population)	5.61	4.22
	Number of reviews (in unit)	94,554	42,778
	Average rating (in index 1-5)	4.5	4.4
Electric train	Number of train stations (in unit/km^2)	0.005	0.01
	Number of train stations (in unit/1,000,000 population)	1.11	2.31
	Number of reviews (in unit)	8,323	6,031
	Average rating (in index 1-5)	4.3	4.2

Notes: Value of average rating is weighted by the number of reviews.
Source: Google Maps, calculated by the Authors.

According to Figure 3, the travel speed of electric trains is significantly higher than other public transportation, both in Bekasi and Tangerang. This is obvious since electric trains do not experience the same congestions as buses and microbuses. By region, the average travel speed in Bekasi is slightly faster compared to Tangerang, especially on electric trains and microbuses. We argue that the travel speed in electric trains is affected by (i) the number of railroad tracks in each station; (ii) the number of railroad tracks in the transit stations; and (iii) the waiting time in the transit station. First, even though railroad tracks in the Bekasi region are also used for inter-city trains (the destinations are outside Jabodetabek), some of the train stations in Bekasi have more than two railroad tracks. On the other hand, most of the train stations in Tangerang only have two railroad tracks and are also used for trains to Soekarno Hatta Airport. Thus, the low number of railroad tracks decreases the travel speed of electric trains due to lane shifting. Second, the number of railroad tracks in the transit station of Bekasi's train is more than Tangerang's. As an example, Manggarai Station, as the transit stations of Bekasi's train, has more than three railroad tracks for the Bekasi's train, while both transit stations of Tangerang's train (Duri Station and Tanah Abang Station) only have two. It is clear that the low number of railroad tracks in the transit stations will increase the waiting time of electric trains to enter the transit stations, which, in turn, lowers the travel speed of electric trains. Third, the waiting times of Bekasi trains and Tangerang trains in their transit stations are also different. On average, the Bekasi trains only transit within than 30 minutes, while Tangerang trains consistently wait in

transit for 30 minutes. Again, the longer waiting time obviously lowers the travel speed of electric trains.

In addition, we also argue that the higher travel speed of microbuses in Bekasi may be caused by the longer road in Bekasi compared to Tangerang. As calculated in Figure 1, the length of the road in Bekasi is 22.34 km per 1 square km while Tangerang only has 5.74 km per 1 square km. The significant difference of the road length affects the level of congestion in the regions, which in turn affects the travel speed of the microbus.

Figure 3: Average Travel Speed of Public Transportation, 2020
(in m/minutes)
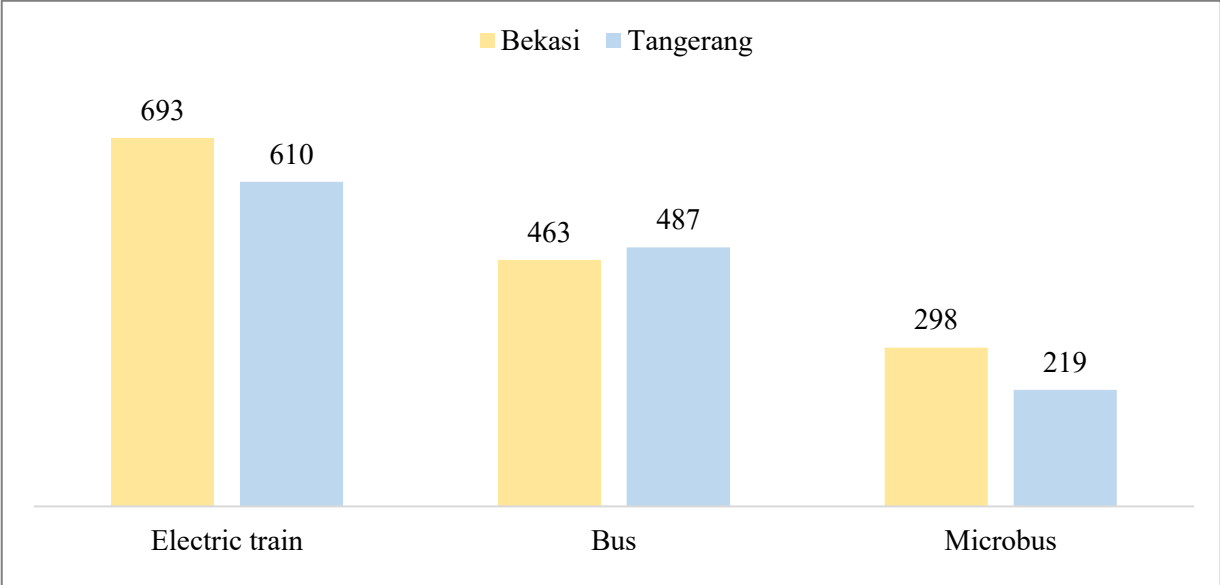
Source: Google Maps and Trafi, calculated by the Authors.

In terms of waiting time and daily schedule of those public transportations, there is no significant difference between regions. For instance, the average waiting time of electric trains in both regions is about 17 minutes, running from 4:30 AM to 11:00 PM. Furthermore, the average waiting time of buses (TransJakarta) in both regions is about 15 to 20 minutes, running from 5:30 AM to 10:00 PM, respectively. Lastly, the average waiting time of microbuses in both regions is about 15 minutes, running from 5:00 AM to 8:00 PM, respectively.

Besides the mobility dimension, we also discuss best practices for transportation system connectivity in each region. Bekasi's Summarecon Bekasi has provided shuttle buses and has integrated with TransJakarta. This has provided ease and convenience of transportation for the Bekasi community in general and Summarecon Bekasi in particular to travel to the Jakarta region. Summarecon Bekasi also manages to connect the district with TransPatriot, an integrated transportation system for Bekasi residents. The Tangerang region also has a district,

namely Bumi Serpong Damai (BSD) City, located in South Tangerang city. BSD City also has integrated transportation system connectivity that eases the community's travel activity, both within the district or to other cities. The public transportation in BSD City includes three electric train stations to Jakarta, buses and microbuses both within BSD City and to Jakarta, TransJakarta's buses to Jakarta, and buses to Soekarno-Hatta International Airport in Jakarta.

In terms of transportation convenience, we assess the ease of obtaining travel information and types of payment instruments in public transportation. People in both regions could access the travel information of all forms of public transportation from various mobile apps; see Table 6. Generally, the mobile apps provide the travel information regarding the trip fare, schedule, and real-time position or arrival. Electric trains and buses have used cashless payment such as e-money, e-wallet, and QR payment, while microbuses still use cash payment.

Table 6: Free Mobile Apps for Public Transportation User in Jabodetabek, 2020

Mobile Apps	Number of Users	App Rating	Types of Public Transportation	Developer	Key Features
InfoKRL	100,000+	4.4	Electric train	Individual	Trip fare, train schedule, real-time train position and status, detailed trip guidance, and online chat platform.
Jakarta City Line	100,000+	4.4	Electric train	Individual	Trip fare, train schedule, real-time train position, and real-time train information from @CommuterLine (a Twitter account of PT. Kereta Commuter Indonesia)
KRLAccess	100,000+	2.95	Electric train	Domestic company	Train schedule, real-time train position, and real-time train passenger density
TiJe	100,000+	4.0	Bus	Domestic company	QR ticket and real-time bus position
Trafi	5,000,000+	4.0	Electric train, bus, and microbus	International company	Trip fare, schedule, real-time arrival, estimated travel time, and detail trip guidance
Moovit	5,000,000+	4.7	Electric train, bus, and	International company	Schedule, real-time arrival, estimated travel

Mobile Apps	Number of Users	App Rating	Types of Public Transportation	Developer	Key Features
			microbus		time, and detail trip guidance
Google Maps	5,000,000,000+	4.4	Electric train, bus, and microbus	International company	Trip fare, schedule, real-time arrival and status, estimated travel time, and detail trip guidance

Source: Google Play and App Store, summarised by the Authors.
Notes: Value of rating is the simple average rating from Google Play and App Store.

Lastly, we identify the social acceptance aspect of the transportation system vis-à-vis facilities for priority passengers. In both regions, public transportation is available for all, regardless of social status. Electric trains and buses provide priority seating for particular passengers such as the elderly, pregnant women, women with children, and those with disabilities. Further, electric trains not only provide priority seating in each car but also designate two cars in every train for woman passengers only. Similar to electric trains, buses provide priority seating as well as some buses only for woman passengers. In contrast, there is no priority seating available in microbuses.

4.2. Primary and Secondary Education

In this study, the quality of primary and secondary education in Bekasi and Tangerang are both assessed by the performance of students and interpersonal relations. The quality of primary and secondary education in Tangerang is better than Bekasi, with the performance of students in Tangerang consistently higher than Bekasi. In addition, the lower number of students per classroom in Tangerang indicates that the interpersonal relations between the students and teacher are relatively better than Bekasi.

It is worth noting that in this study, we only identify the student performance in secondary education level (junior high school, senior high school, and vocational school) since the data of student performance in primary education level (kindergarten and elementary school) are not available. As shown in Figure 4, Bahasa is the subject that has the highest average national examination score in junior high school level, while mathematics is the lowest. On average, junior high school students in Tangerang have a higher average national examination score than students in Bekasi. In Bekasi, the average scores in private junior high school are slightly higher than public junior high school, while the reverse condition appears in Tangerang.
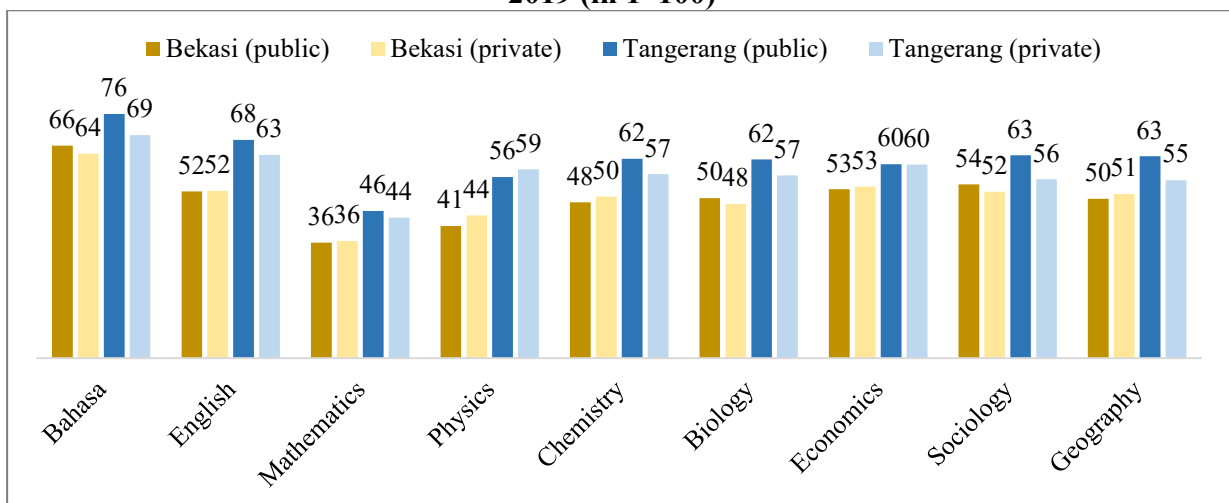
Figure 4: Average National Examination Score by Subjects in Junior High School Level, 2019 (in 1–100)
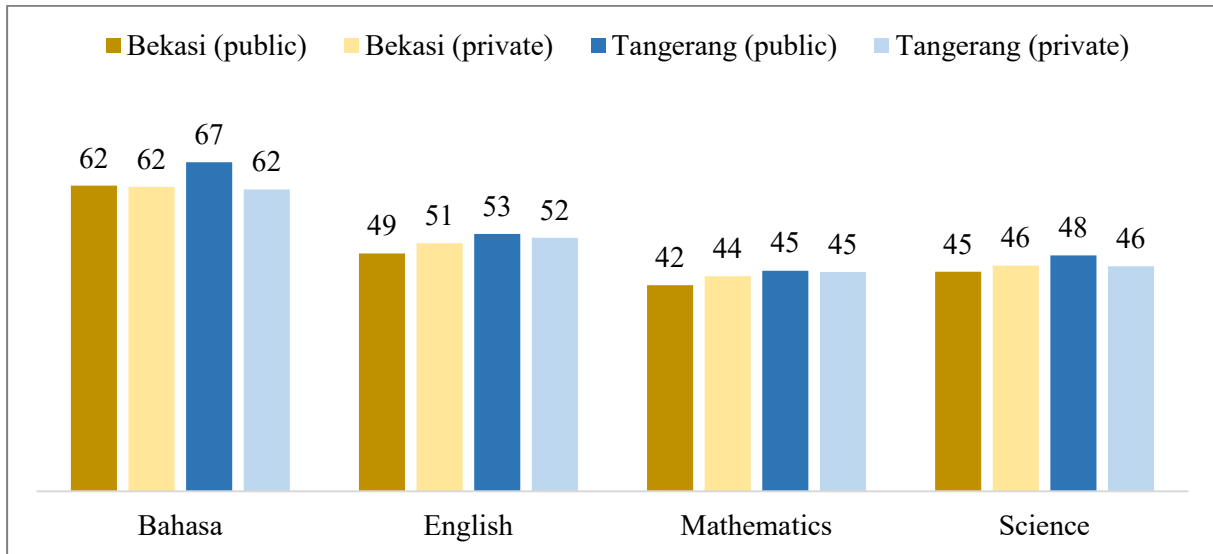
Source: Ministry of Education and Culture of Indonesia, calculated by the Authors.

As shown in Figure 5, Bahasa is the subject that has the highest average national examination score in senior high schools, while mathematics is the lowest. Generally, senior high school students in Tangerang have a higher average national examination score than equivalent students in Bekasi. In Bekasi, the average scores in public senior high schools are quite similar to private senior high schools. On the other hand, the average scores in Tangerang public senior high school are slightly higher than the private one.

Figure 5: Average National Examination Score by Subjects in Senior High School Level, 2019 (in 1–100)

Source: Ministry of Education and Culture of Indonesia, calculated by the authors.

As shown in Figure 6, Bahasa is the subject that has the highest average national examination score in vocational schools, while mathematics is the lowest. Generally, vocational school students in Tangerang have a higher average national examination score than students in Bekasi. In both regions, the average scores in public vocational schools are slightly higher than private vocational schools.

Figure 6: Average National Examination Score by Subjects in Vocational School Level, 2019 (in 1–100)
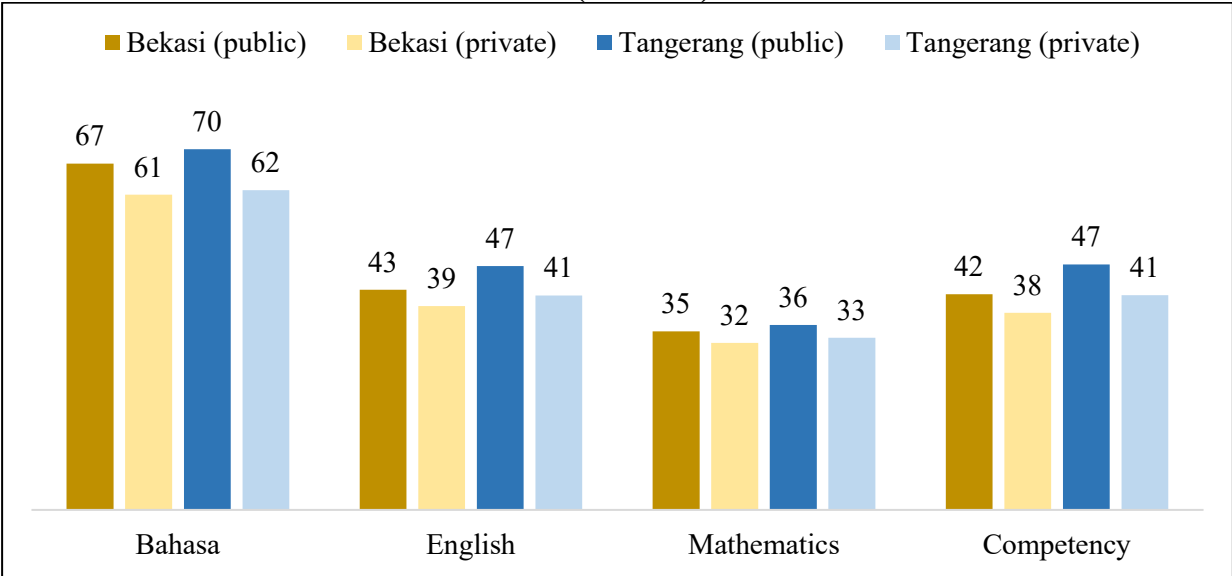
Source: Ministry of Education and Culture of Indonesia, calculated by the authors.

In 2016 to 2019, the number of students per teacher in both regions showed a constant trend for all levels of education (Figure 7). On average, each region has about 22 to 23 students per teacher. Statistically, the values in those regions are not significantly different since the p-value (0.8793) is larger than the significance level (0.05) (Table 7).

Figure 7: Students per Teacher by School Level in Bekasi (LHS) and Tangerang (RHS), 2016–19

(in number of people)
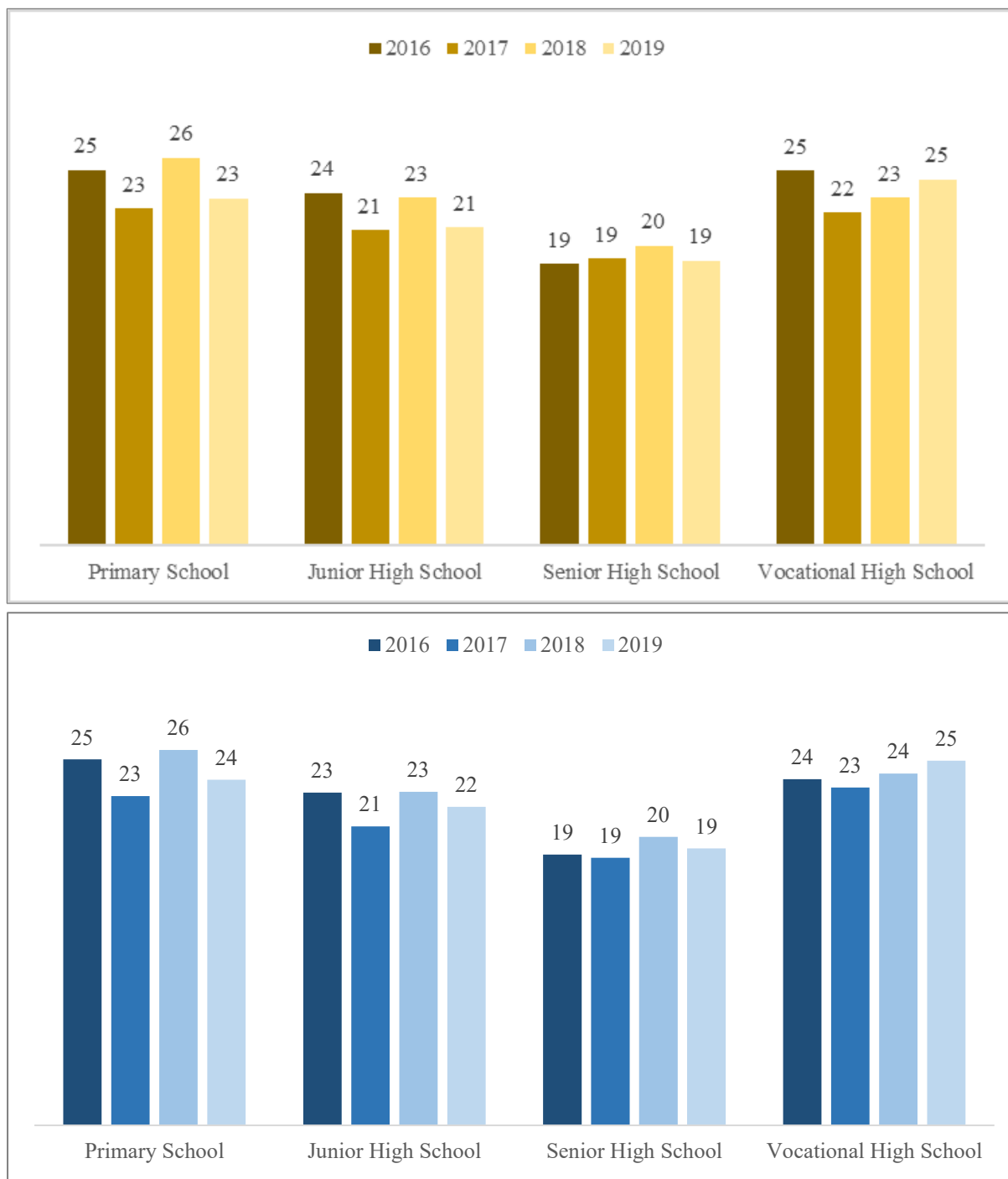
Source: Ministry of Education and Culture of Indonesia, calculated by the authors
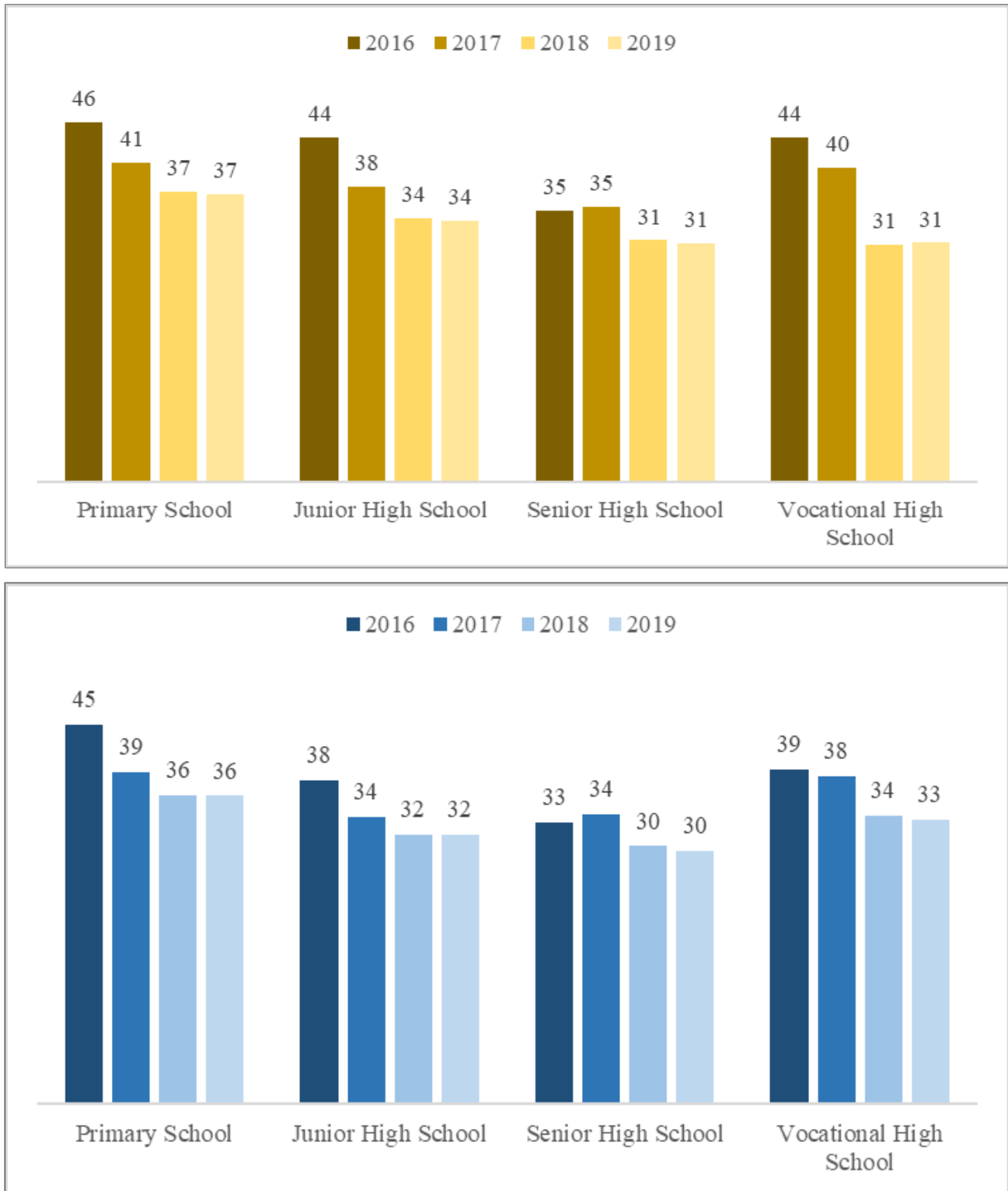
Table 7: Two-sample Test of Number of Students per Teacher by Region

Group	Obs.	Mean	Standard Error	Standard Deviation	[95% Confidence Interval]	
Bekasi	16	22.375	0.5836309	2.334524	21.13102	23.61898
Tangerang	16	22.5	0.5700877	2.280351	21.28489	23.71511
combined	32	22.437 5	0.4014528	2.27096	21.61873	23.25627
diff		-0.125	0.8158584		-1.791205	1.541205

diff = mean (Bekasi) - mean (Tangerang)		t =	-0.1532
Ho: diff = 0		degrees of freedom =	30
Ha: diff < 0	Ha: diff != 0	Ha: diff > 0	
Pr (T < t) = 0.4396	Pr (|T| > |t|) = 0.8793	Pr (T > t) = 0.5604	

Source: Authors' calculation.

In the same period, the number of students per classroom in both regions showed a decline for all education levels (Figure 8). On average, the number of students per classroom in Bekasi and Tangerang are about 37 and 35 students per classroom, respectively. Statistically, the values in those regions are not significantly different since the p-value (0.3142) is larger than the significance level (0.05) (Table 8).

Figure 8: Students per Classroom by School Level in Bekasi (LHS) and Tangerang (RHS), 2016–19

(in number of people)

Source: Ministry of Education and Culture of Indonesia, calculated by the authors.

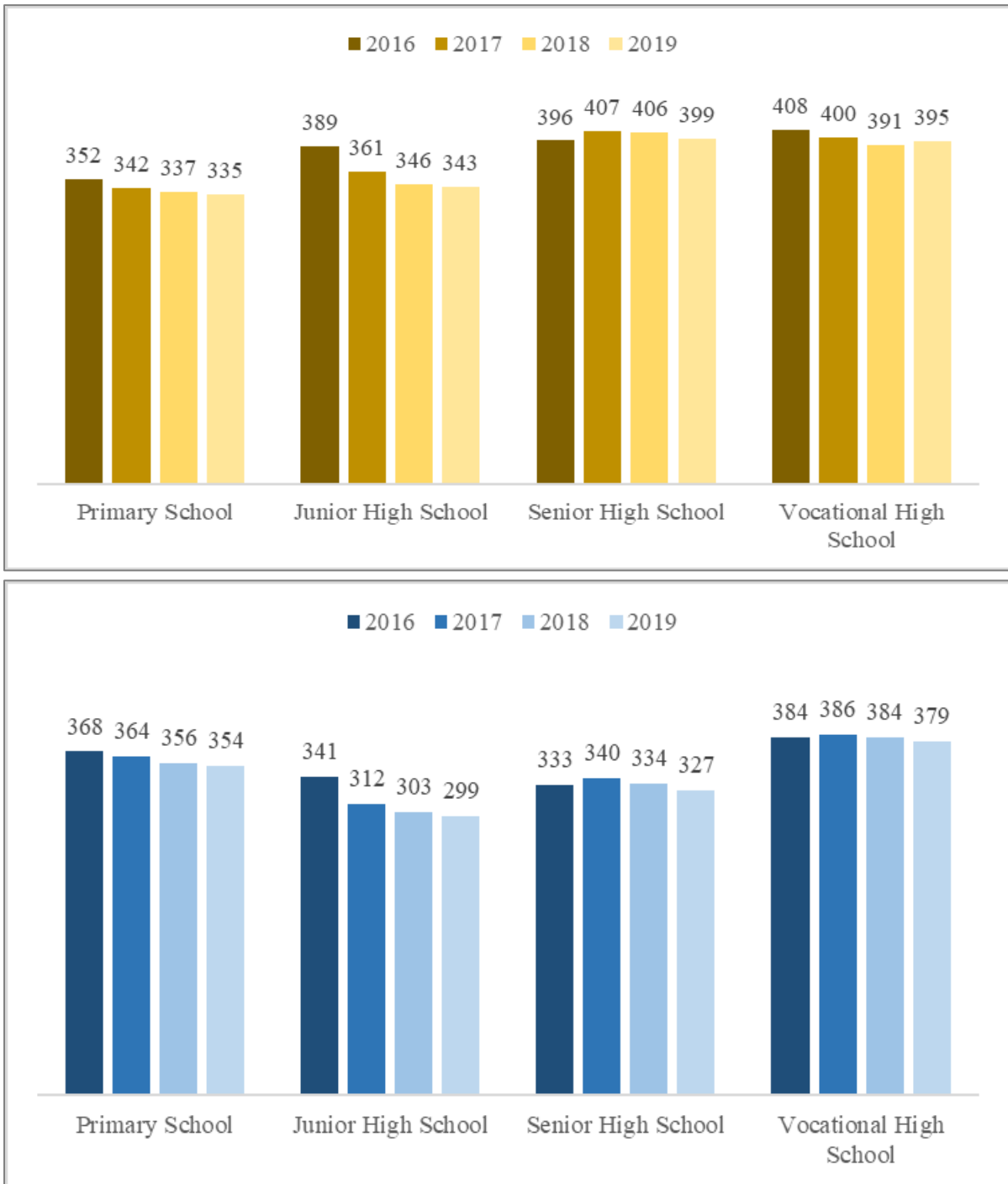**Table 8: Two-sample Test of Number of Students per Classroom by Region**

Group	Obs.	Mean	Standard Error	Standard Deviation	[95% Confidence Interval]	
Bekasi	16	36.8125	1.249062	4.996249	34.15019	39.47481
Tangerang	16	35.1875	0.9798756	3.919503	33.09894	37.27606
combined	32	36	0.7943855	4.493723	34.37984	37.62016
diff		1.625	1.587549		-1.617208	4.867208

diff = mean (Bekasi) - mean (Tangerang)		t =	1.0236
Ho: diff = 0		degrees of freedom =	30
Ha: diff < 0	Ha: diff != 0	Ha: diff > 0	
Pr (T < t) = 0.8429	Pr (|T| > |t|) = 0.3142	Pr (T > t) = 0.1571	

Source: Authors' calculation.

In the same period, the number of students per school in both regions declined for all education levels (Figure 9). On average, the number of students per school in Bekasi and Tangerang are about 375 and 348 students per school, respectively. Statistically, Tangerang has lower number of students per school than Bekasi since the p-value (0.0053) is lower than the significance level (0.05) (Table 9).

Figure 9: Students per School by Education Level in Bekasi (LHS) and Tangerang (RHS), 2016–19
(in number of people)

Source: Ministry of Education and Culture of Indonesia, calculated by the authors

24

**Table 9: Two-sample Test of Number of Students per School by Region**

Group	Obs.	Mean	Standard Error	Standard Deviation	[95% Confidence Interval]	
Bekasi	16	375.4375	7.155399	28.6216	360.1861	390.6889
Tangerang	16	347.75	7.202141	28.80856	332.399	363.101
combined	32	361.5938	5.578411	31.55626	350.2165	372.971
diff		27.6875	10.15237		6.953599	48.4214

diff = mean (Bekasi) - mean (Tangerang)   t =   2.7272

Ho: diff = 0   degrees of freedom =   30

Ha: diff < 0   Ha: diff != 0   Ha: diff > 0

Pr (T < t) = 0.9947   Pr (|T| > |t|) = 0.0106   Pr (T > t) = 0.0053

Source: Authors' calculation.

4.3. Higher Education

The quality of higher education in Bekasi and Tangerang is measured by referring to Law No. 12 Year 2012 Regarding Higher Education and the provision of higher education accreditation under the National Accreditation Body for Higher Education of Indonesia. At a glance, Bekasi is considered as having better higher education than Tangerang. As shown in Figure 10, college and university are the most popular higher education levels both in Bekasi and Tangerang while institutes are the least popular. In terms of accreditation, 39% of higher education in Bekasi is classified as good, while 36% of higher education in Tangerang has not been accredited; by contrast, 9% and 6% of higher education in Bekasi and Tangerang, respectively, has been designated as 'excellent'.

Figure 10: Accreditation Categories by Types of Higher Education in Bekasi (First Figure) and Tangerang (Second Figure), 2020 (in unit)
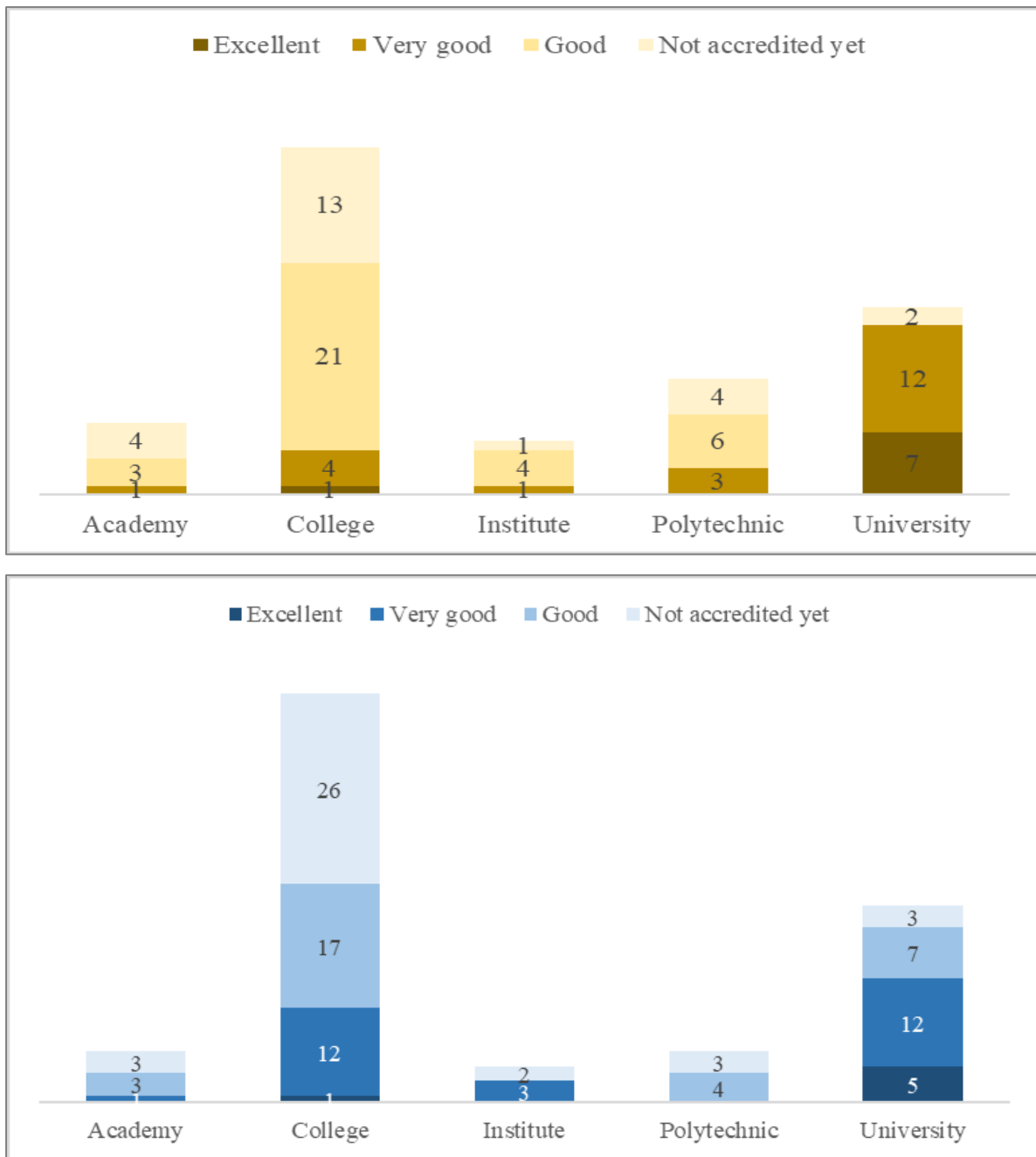

Source: Higher Education Database, Ministry of Education and Culture of Indonesia.

4.4. Healthcare Facility

In this study, the quality of healthcare in Bekasi and Tangerang is identified by the number of facilities and health workers per 100,000 people,[14] the number of accredited hospitals under the Commission of Hospital Accreditation, and the number of accredited hospitals under the Joint Commission International. By these measures, the quality of healthcare in Tangerang is better than Bekasi since it has more health facilities and health workers per 100,000 people. Moreover, the number of hospitals in Tangerang with excellent accreditation under the Commission of Hospital Accreditation of Indonesia is also higher than Bekasi, as is the number of hospitals that have been accredited under JCI. The details are as follows:

Generally, the number of health facilities per 100,000 in Tangerang is higher than Bekasi (Figure 11). It is important to note that a higher value represents a better condition since the burden on any given health facility is not relatively heavy.

**Figure 11: Number of Health Facilities per 100,000 Populations, 2014–19**
(in units)
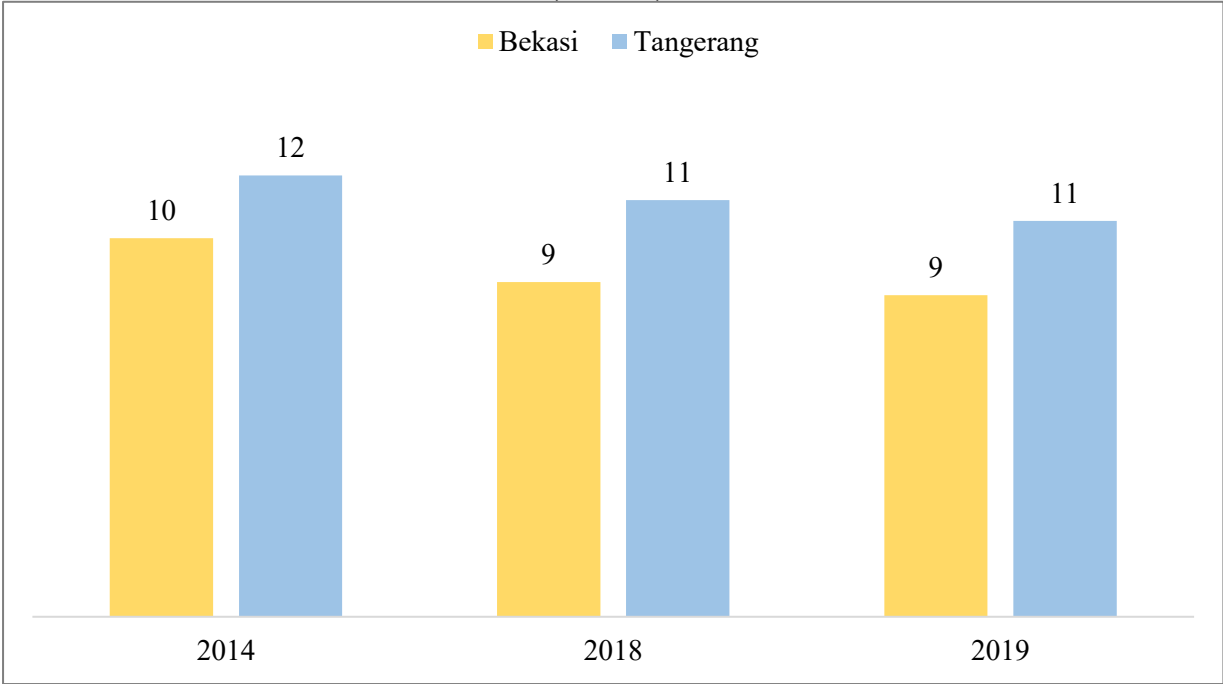
Source: Statistics Indonesia, calculated by the authors.

As revealed in Figure 12, the number of hospitals per 100,000 populations in Bekasi decreased from 2014 to 2019 while the same variable increased in Tangerang for the same period. The number of maternal hospitals, polyclinics, and subsidiaries of public health centres

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[14] Number of populations is adjusted from 10,000 to 100,000 in order to ease data interpretation.

showed a negative trend while the public health centres themselves had a constant value in both regions from 2014 to 2019. Lastly, the number of pharmacies per 100,000 people in Bekasi remained constant while that in Tangerang grew slightly.

Figure 12: Number of Health Facilities per 100,000 Populations by Types of Healthcare Facility in Bekasi (LHS) and Tangerang (RHS), 2014–19 (in units)
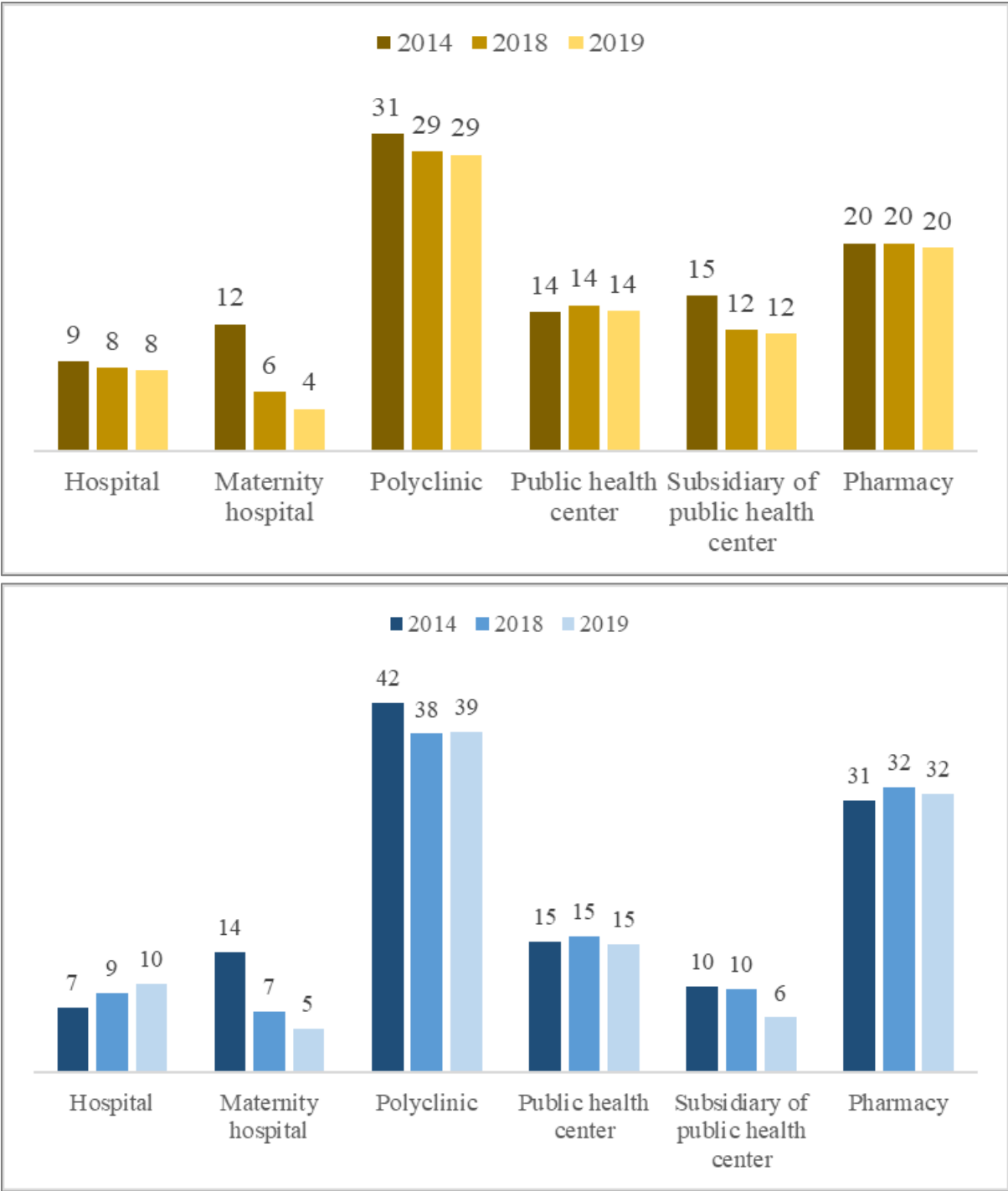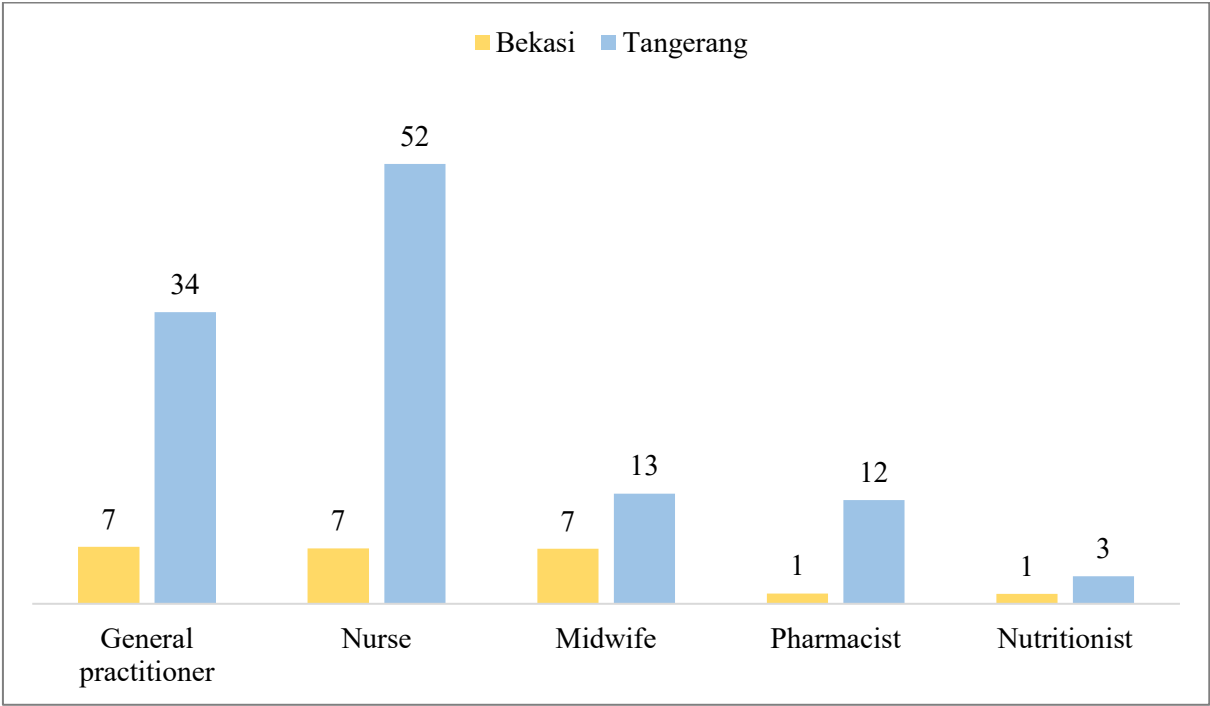

Source: Statistics Indonesia, calculated by the authors.

In 2019, the number of health workers per 100,000 population in Tangerang was 115; this was significantly higher than Bekasi's 22. It is important to note that a higher value represents a better condition since the burden of any given health worker is not relatively heavy.

As shown in Figure 13, the number of health workers in Tangerang is significantly higher than Bekasi. The numbers are consistently higher for all the types of health workers in 2019.

Figure 13: Number of Health Workers per 100,000 Populations by Types of Health Workers, 2019 (in people)

Source: Statistics Indonesia, calculated by the authors.

As of January 2021, the number of hospitals with basic accreditation in Bekasi is higher than Tangerang by 35 and 32 hospitals, respectively. On the other hand, the number of hospitals with excellent accreditation in Bekasi is significantly lower than Tangerang by 29 and 34 hospitals, respectively (Figure 14).

Figure 14: Number of Hospitals by Level of Hospital Accreditation, 2021 (in units)
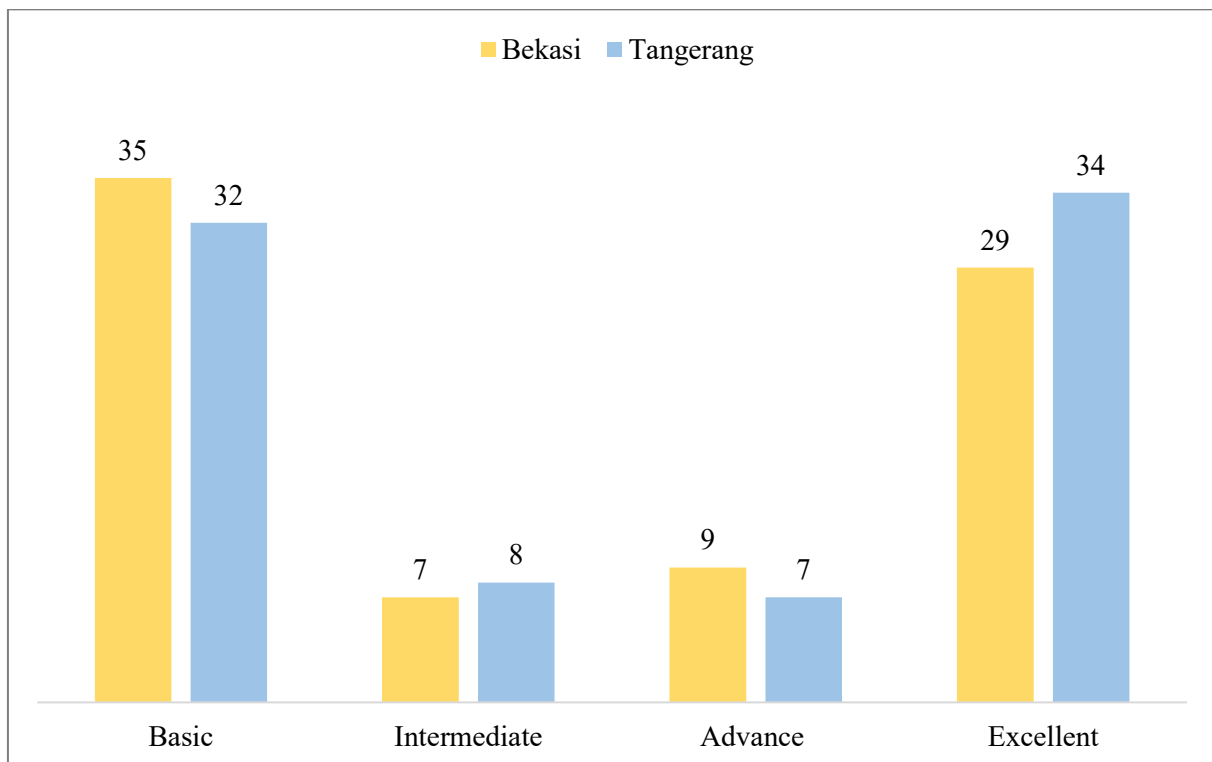
Source: Commission of Hospital Accreditation of Indonesia.

Lastly, the number of hospitals in Tangerang that have had JCI accreditation is significantly higher than Bekasi and the year of accreditation in Bekasi is also more recent than Tangerang. As of January 2021, only one hospital in Bekasi has been accredited under JCI, that is, Awal Bros Hospital Bekasi since 2014. On the other hand, Tangerang has had four hospitals that have been accredited under JCI.

4.5. Restaurants

In this study, the quality of restaurants is described by three indicators: product, price, and customer satisfaction. Generally, the quality of restaurants in Tangerang is better than Bekasi in terms of selection of dishes and the customer satisfaction. However, the average price for two in Tangerang is slightly expensive compared to Bekasi. The details are as follows:

As shown in Figure 15, the selection of dishes in Tangerang is more varied compared to Bekasi. For instance, Tangerang provides fine dining and bars that are not available in Bekasi. However, the pattern of dishes is quite similar, with quick bites, cafés, casual dining, and drink shops being the majority of restaurants in both regions.

Figure 15: Share of Restaurants in Bekasi (LHS) and Tangerang (RHS), 2020 (in%)
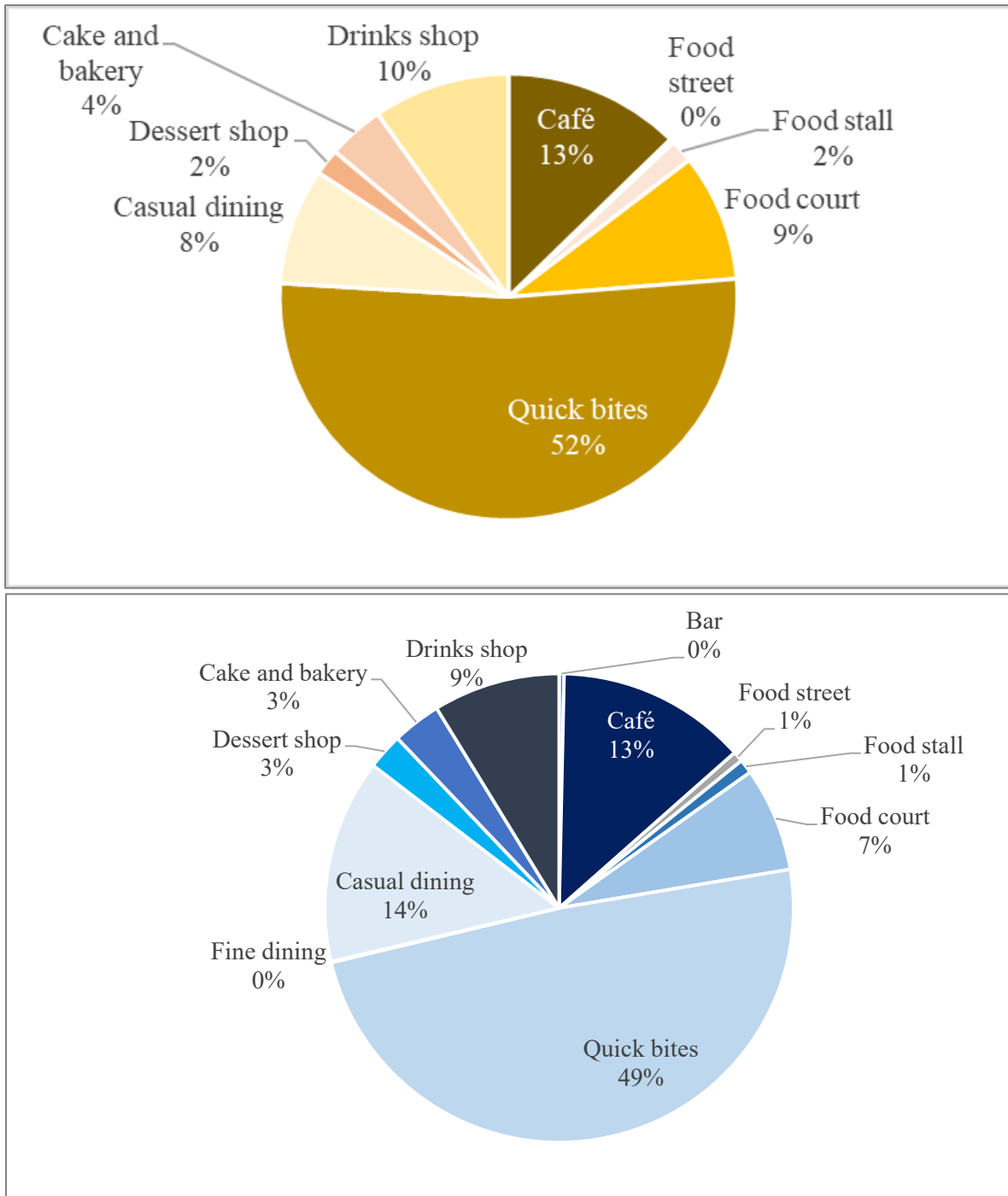

Notes: Number of restaurants in Bekasi and Tangerang are 1,270 and 2,956, respectively.
Source: https://www.zomato.com/ (data were extracted using ParseHub) (accessed 10 June 2021).

As revealed in Figure 16, the average price for two in Bekasi restaurants is slightly cheaper than Tangerang, with the average prices being Rp91,000 and Rp138,000, respectively. In Bekasi, the most expensive restaurant is casual dining (Rp232,000) while the cheapest is street food (Rp40,000). On the other hand, in Tangerang, the highest average price for two occurs in fine dining (Rp400,000), while the lowest is food stalls (Rp63,000).

Figure 16: Price of Two by Types of Restaurants, 2020 (in thousand Rp)
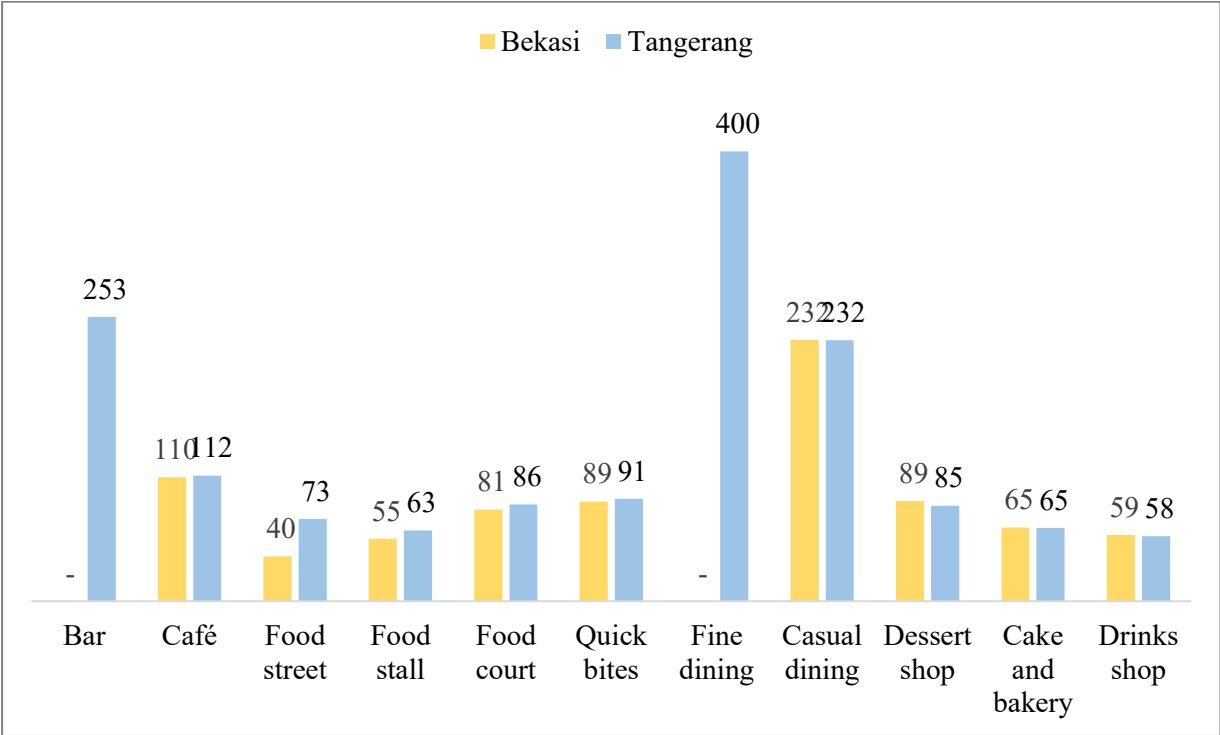
Notes: No data available for bar and fine dining in Bekasi.
Source: https://www.zomato.com/ (data were extracted using ParseHub) (accessed 10 June 2021).

As stated in Table 10, restaurant customer satisfaction in Tangerang is slightly higher than Bekasi at 4.0 and 3.8, respectively. The number of restaurant reviews is also higher in Tangerang, which is relevant since the number of restaurants in Tangerang is also much higher compared to Bekasi by 2.32 and 0.85, respectively (the number of restaurants has been weighted by the region size).

**Table 10: Number of Reviews and Average Rating by Types of Restaurants, 2020
(in unit and in index 1–5)**

Types of Restaurants	Bekasi		Tangerang	
	Reviews	Rating	Reviews	Rating
Bar	n/a	n/a	107	3.4
Café	4,431	3.8	14,762	3.9
Street food	n/a	n/a	200	3.7
Food stall	91	3.7	82	3.5
Food court	740	3.5	2,963	3.9
Quick bites	10,573	3.7	29,936	3.8
Fine dining	n/a	n/a	89	3.8
Casual dining	9,063	4.1	44,709	4.1
Dessert shop	1,041	3.9	3294	3.9
Cake and bakery	439	3.5	1,263	3.7
Drink shop	543	3.5	1,612	3.8
Average	**26,921**	**3.8**	**99,098**	**4.0**

Notes: Value of rating is weighted by the number of reviews.
Source: https://www.zomato.com/ (data were extracted using ParseHub and calculated by Authors) (accessed 10 June 2021).

4.6. Hotels

In this study, the quality of hotels in Bekasi and Tangerang is identified by price, facility, and service quality. In general, the quality of hotels in Tangerang and Bekasi is not significantly different since the percentage of starred hotels (reflecting the facility) in Tangerang is higher than Bekasi but the price per night in Bekasi is significantly cheaper. Moreover, Tangerang has more hotel reviews compared to Bekasi, but the hotel rating (reflecting the service quality) in Bekasi is slightly higher than Tangerang. The details are as follows:

As shown by Figure 17, the share of starred hotels in Tangerang is higher than Bekasi by 88% and 80%, respectively. In terms of starred hotel category, the pattern is similar in both regions in which the highest percentage occurs in three-star hotels, while the lowest one occurs in five-star hotels.

Figure 17: Share of Hotels by Star Level in Bekasi (LHS) and Tangerang (RHS), 2020 (in %)
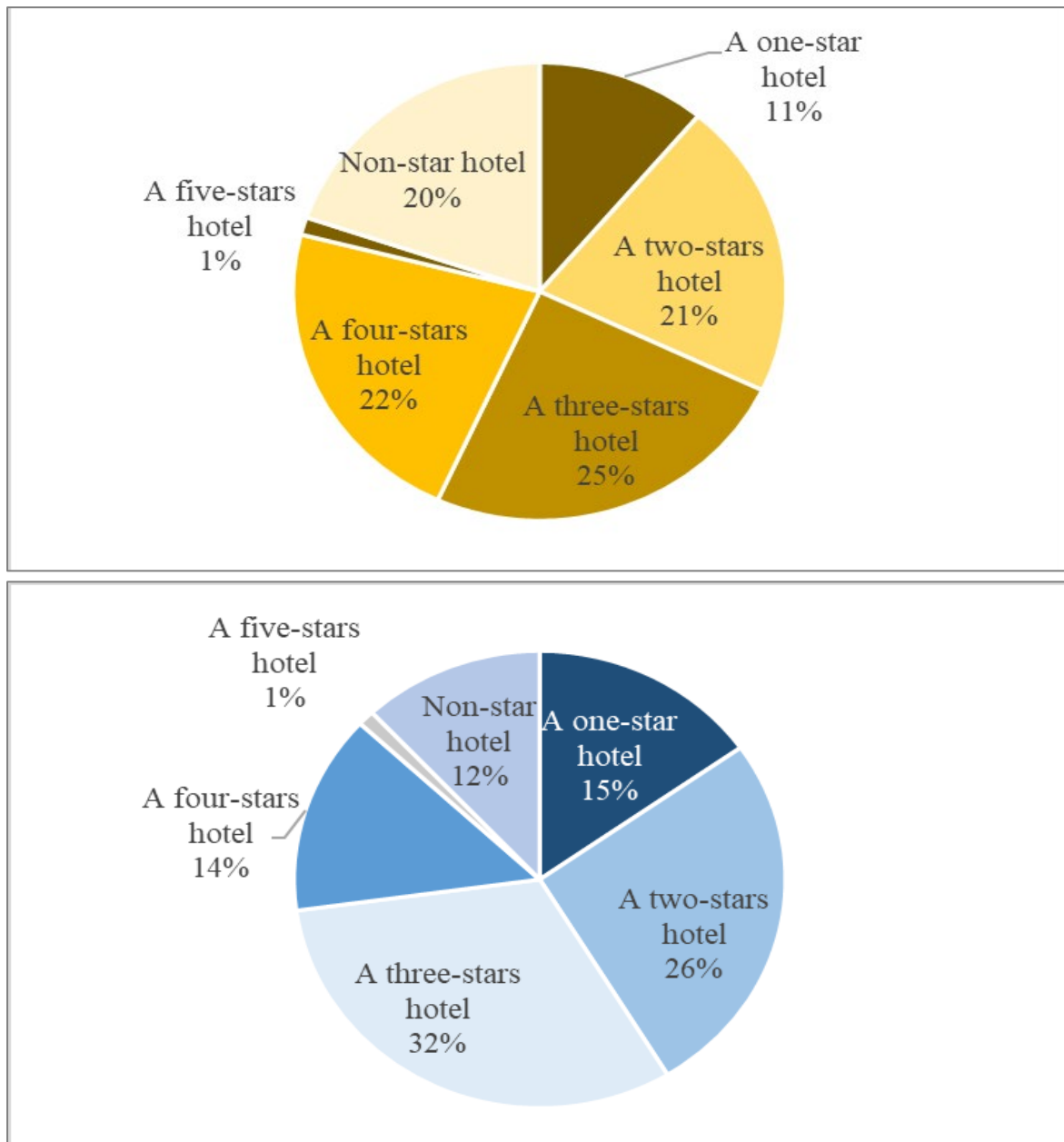
Notes: Number of hotels in Bekasi and Tangerang are 81 and 92, respectively.
Source: https://www.traveloka.com/en-au/ (data were extracted using ParseHub) (accessed 10 June 2021).

As revealed in Figure 18, the average price per night in Bekasi (Rp348,000) is significantly cheaper compared to Tangerang (Rp 614,000). Moreover, the pattern of both regions is similar in that the cheapest average price per night occurs in one-star hotels while the most expensive one is five-star hotels. As stated in Table 12, the popularity of hotels in Tangerang is greater than in Bekasi, while the customer satisfaction shows the opposite direction.

Figure 18: Average Price per Night by Star Level, 2020
(in thousand Rp)
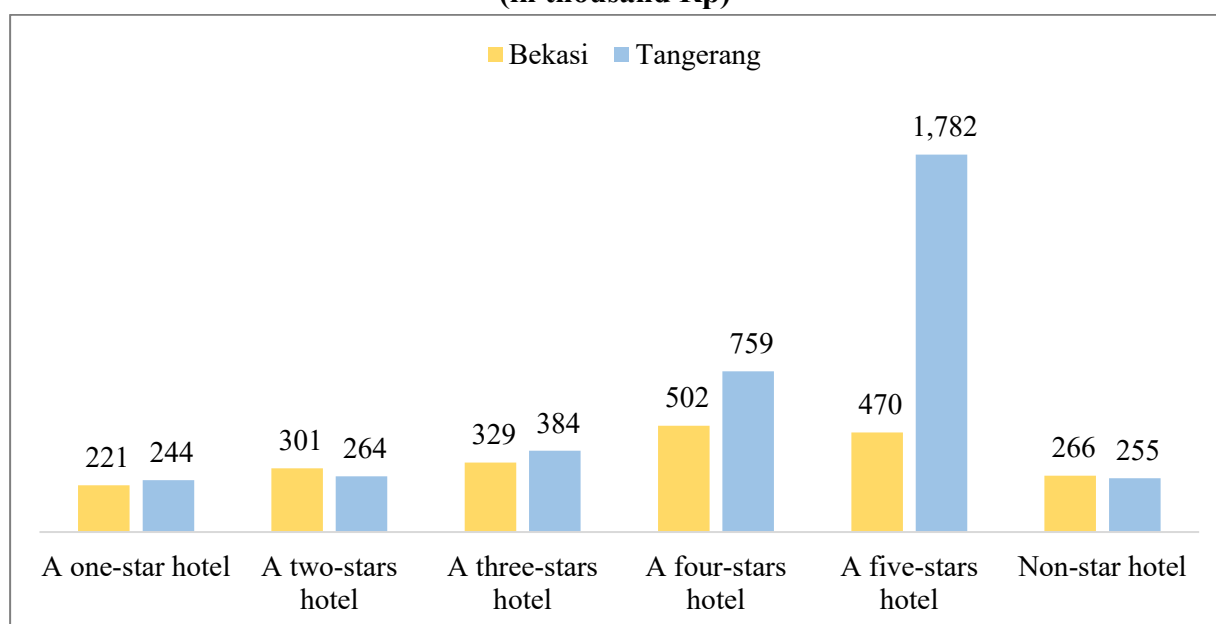
Source: https://www.traveloka.com/en-au/ (data were extracted using ParseHub) (accessed 10 June 2021).

Table 11: Number of Reviews and Average Rating by Star Level, 2020
(in unit & index 1–10)

Types of Hotels	Bekasi		Tangerang	
	Reviews	Rating	Reviews	Rating
A one-star hotel	5,609	8.0	13,940	8.2
A two-star hotel	50,859	8.2	69,714	8.1
A three-star hotel	46,440	8.4	73,771	8.4
A four-star hotel	50,208	8.6	38,943	8.6
A five-star hotel	421	8.2	845	8.6
Non-star hotel	3,283	8.2	932	7.4
Average	**156,820**	**8.4**	**198,145**	**8.3**

Notes: Value of rating is weighted by the number of reviews. In addition, (i) of the 81 hotels in Bekasi, nine are one-star, 17 are two-star, 20 are three-star, 18 are four-star, 1 is five-star, and 16 are no-star; (ii) of the 92 hotels in Tangerang, 14 are one-star, 24 are two-star, 29 are three-star, 13 are four-star, 1 is five-star, and 11 are no-star.
Source: https://www.traveloka.com/en-au/ (data were extracted using ParseHub and calculated by Authors) (accessed 10 June 2021).

4.7. Recreational Park

Due to the pandemic, we observed the quality of recreational parks only based on their number, weighted by the region and population size, average rating, and the number of reviews. In general, Tangerang has better quality recreational parks than Bekasi. According to Table 12,

in terms of availability, the number of recreational parks in Tangerang is significantly higher than Bekasi. Besides that, in terms of popularity and customer satisfaction, the total reviews and the average rating in Tangerang are also slightly higher than Bekasi. Therefore, it can be concluded that Tangerang has a better quality of recreational park than Bekasi.

Table 12: Quantity and Quality of Recreational Park, 2020
(in unit and in index 1–5)

Indicators	Bekasi region	Tangerang region
Number of recreational parks (in unit/km^2)	0.18	0.27
Number of recreational parks (in unit/100,000 population)	4.33	5.31
Number of reviews (in unit)	112,056	117,794
Average rating (in index 1–5)	4.3	4.4

Source: Google Maps, calculated by the Authors.
Notes: Value of average rating is weighted by number of reviews.

4.8. Shopping Centres

Similar to recreational parks, the quality of shopping centres is also identified only based on their number, weighted by the region size, average rating, and the number of reviews. Generally, Tangerang has a better quality of shopping centre compared to Bekasi. According to Table 13, the number of shopping centres in Tangerang is slightly higher than Bekasi. Moreover, the number of reviews in Tangerang is also significantly higher than Bekasi. However, the average rating between those regions is quite similar. Therefore, it can be concluded that Tangerang has a better quality of shopping centre rather than Bekasi. In this study, we also list the best shopping centres in both regions (Annex 1).

Table 13: Quantity and Quality of Shopping Centre, 2020
(in unit and in index 1–5)

Indicators	Bekasi region	Tangerang region
Number of shopping centres (in unit/km^2)	0.25	0.30
Average rating (in index 1–5)	4.5	4.5
Number of reviews (in unit)	350,369	511,564

Source: Google Maps, calculated by the Authors.
Notes: Value of average rating is weighted by number of reviews.

5.   Discussion for Future Works

It can be summarised that Tangerang has many urban amenities with better quality than Bekasi, except transportation and higher education. Nonetheless, in measuring the quality of urban amenities, this study has some limitations due to the difficulties of conducting spot checks in recreational parks and shopping centres as well as interviews or discussions with related stakeholders to deepen the statistical insights during the COVID-19 pandemic.

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Annexes

Annex 1

The best shopping centre in Bekasi region is Summarecon Mall Bekasi (SMB) located in Bekasi City. The location of SMB is very strategic: Sentra Summarecon Bekasi, an integrated commercial centre with an area of about 23 hectares, and is very easy to reach, only about 10 minutes via the Jakarta–Cikampek toll road (West Bekasi toll exit) with easy flyover access. Presenting five well-known anchor tenants, namely STAR Department Store, TheFoodHall Supermarket, ACE Hardware, Best Denki, and Cinema XXI, Summarecon Mall Bekasi also collaborated with more than 220 other tenants. It also has an area called The Downtown Walk, a new culinary destination with the concept of an alfresco dining area, which currently brings together 39 tenants with a variety of local and international culinary delights. The Downtown Walk SMB has second floor area, which can accommodate the need from hangout, gathering to semi-outdoor party with comfortable green shades. The Downtown Walk is also equipped with a free internet network (wifi) and a Giant LED of 11 x 8 m. A beautiful and shady nuance is presented through a variety of vertical gardens that can be enjoyed in various indoor and outdoor corners. The presence of three koi fish ponds with water fountains will also add to the comfort of the mall visitors in enjoying a fun and different outdoor hangout atmosphere. Completing the integrated commercial area of Sentra Summarecon Bekasi, PT Summarecon Agung Tbk also build Bekasi Food City, a land area of 4,400 m2 with a building area of 2,506 m2, currently Bekasi Food City has 20 tenant counters, 28 tenant push carts, and 2 units. restaurant. In addition, Bekasi Food City is also equipped with a stage, toilets and a prayer room as well as indoor and outdoor seating areas that can accommodate more than 3,000 visitors every day. Bekasi Food City can be accessed through the lobby of The Link which is connected with Summarecon Mall Bekasi. The existence of Bekasi Food City complements Summarecon Mall Bekasi as a culinary destination for various types of Indonesian food.

The best shopping center in Tangerang region is Aeon Mall located in Tangerang Regency specifically in Bumi Serpong Damai (BSD) district. According to its website, Aeon Mall is easily accessed both via toll road and electric train station. BSD also provides BSD link which could be used by visitors from electric train station to Aeon mall without pay. In terms of store assortment, Aeon Mall assorts the stores in each floor based on the categories such as food, goods, service, entertainment, and fashion. For instance, the ground and the top floors are mainly placed for restaurant and food stall, the second floor is mostly for fashion stores, while the third floor is primarily for goods and entertainment. The entertainment provided in this mall includes cinema and arcade games for all ages. Besides that, the mall also has adequate website which provides the information such as mall events or their stores events, mall directory, mall accessibility both by private vehicle or public transportation, etc. The mall also advertises their events regularly through social medias such as Instagram, Twitter, and Facebook.

Annex 2

Table A2.1: Summary of Quality Measurement of Urban Amenities in Bekasi and Tangerang Regions

No	Urban Amenities	Indicator	Unit	Bekasi	Tangerang
1	Transportation	Length of good roads by condition weighted by the region size	Km/km2	In 2018: 21.20 In 2019: 21.49	In 2018: 4.25 In 2019: 5.18
		Length of good roads by condition weighted by the population size	M/person	In 2018: 1.7 In 2019: 1.7	In 2018: 0.3 In 2019: 0.4
		Quantity of bus stops weighted by the region size	Unit/km2	0.24	0.22
		Quantity of bus stops weighted by the population size	Unit/100,000 population	5.61	4.22
		Quantity of train stations weighted by the region size	Unit/km2	0.005	0.01
		Quantity of train stations weighted by the population size	Unit/1,000,000 population	1.11	2.31
		Quality of bus stops	Index from 1 (poor) to 5 (excellent)	4.5	4.4
		Quality of train stations	Index from 1 (poor) to 5 (excellent)	4.3	4.2
		Travel speed of electric train	Km/minutes	0.69	0.61
		Travel speed of bus	Km/minutes	0.46	0.49
		Travel speed of microbus	Km/minutes	0.30	0.22
		Waiting time of electric train	Minutes	17	17
		Waiting time of bus	Minutes	15-20	15-20
		Waiting time of microbus	Minutes	15	15
		Daily schedule of electric train	Not applicable	04.30 AM to 23.00 PM	04.30 AM to 23.00 PM
		Daily schedule of bus	Not applicable	05.30 AM to 22.00 PM	05.30 AM to 22.00 PM
		Daily schedule of microbus	Not applicable	05.00 AM to 20.00 PM	05.00 AM to 20.00 PM
		Transportation system connectivity	Not applicable	Summarecon Bekasi	Bumi Serpong Damai

No	Urban Amenities	Indicator	Unit	Bekasi	Tangerang
		Number of mobile apps to obtain travel information	Unit	About 7	About 7
		Types of payment instrument in electric train	Not applicable	Cash, e-money, e-wallet, and QR payment	Cash, e-money, e-wallet, and QR payment
		Types of payment instrument in bus	Not applicable	Cash, e-money, e-wallet, and QR payment	Cash, e-money, e-wallet, and QR payment
		Types of payment instrument in microbus	Not applicable	Cash	Cash
		Facility in electric train	Not applicable	Priority seat for elderly, pregnant women, women with children, and disabilities; as well as train cars for women passengers only.	Priority seat for elderly, pregnant women, women with children, and disabilities; as well as train cars for women passengers only.
		Facility in bus	Not applicable	Priority seat for elderly, pregnant women, women with children, and disabilities; as well as bus for women passengers only operating in rush hour.	Priority seat for elderly, pregnant women, women with children, and disabilities; as well as bus for women passengers only operating in rush hour.
		Facility in microbus	Not applicable	No priority seat	No priority seat
2	Primary and secondary education	Average national examination score in junior high school level	1-100	50.07	51.12
		Average national examination score in senior high school level	1-100	50	60
		Average national examination score in vocational school level	1-100	45	47
		Number of students per teacher	People	22	23
		Number of students per classroom	People	37	35
		Number of students per school	People	375	348
3	Higher education	Number of higher educations	Unit	87	102
		Distribution by the types of higher education	%	Academy: 7	Academy: 9

No	Urban Amenities	Indicator	Unit	Bekasi	Tangerang
				College: 55 Institute: 5 Polytechnic: 7 University: 26	College: 45 Institute: 7 Polytechnic: 15 University: 24
		Distribution by the accreditation category	%	Excellent: 9 Very good: 24 Good: 39 Not accredited yet: 28	Excellent: 6 Very good: 27 Good: 30 Not accredited yet: 36
4	Healthcare facility	Average number of health facilities per 100,000 populations	Unit	9	11
		Average number of health facilities per 100,000 population by types of healthcare facility	Unit	Hospital: 8 Maternity hospital: 7 Polyclinic: 30 Public health center: 14 Subsidiary of public health center: 13 Pharmacy: 20	Hospital: 9 Maternity hospital: 9 Polyclinic: 40 Public health center: 15 Subsidiary of public health center: 9 Pharmacy: 32
		Average number of health workers per 100,000 populations	Unit	4	23
		Number of hospitals by level of hospital accreditation (under Commission of Hospital Accreditation of Indonesia)	Unit	Basic: 35 Intermediate: 7 Advance: 9 Excellent:29	Basic: 32 Intermediate: 8 Advance: 7 Excellent: 34
		Number of hospitals by level of hospital accreditation (under Joint Commission International)	Unit	1	4
5	Restaurant	Number of restaurants	Unit	1,270	2,956
		Share of restaurant by the types of restaurants	%	Café: 13 Food street: 0.3 Food stall: 2 Food court: 9 Quick bites: 52	Café: 13 Food street: 0.7 Food stall: 1 Food court: 7 Quick bites: 49

No	Urban Amenities	Indicator	Unit	Bekasi	Tangerang
				Casual dining: 8 Dessert shop: 2 Cake and bakery: 4 Drink shop: 10	Casual dining: 14 Dessert shop: 2 Cake and bakery: 3 Drink shop: 9 Bar: 0.3 Fine dining: 0.1
		Average price of two	Rp	91,283	137,989
		Number of reviews	Unit	26,921	99,098
		Average rating of restaurants	Index from 1 (poor) to 5 (excellent)	3.8	4.0
6	Hotel	Number of hotels	Unit	81	92
		Share of hotels by star level	%	One-star hotel: 20 Two-stars hotel: 21 Three-stars hotel: 25 Four-stars hotel: 22 Five-stars hotel: 1 Non-star hotel: 20	One-star hotel: 15 Two-stars hotel: 26 Three-stars hotel: 32 Four-stars hotel: 14 Five-stars hotel: 1 Non-star hotel: 12
		Average price per night	Rpe	348,000	615,000
		Number of reviews	Unit	156,820	198,145
		Average rating of hotels	Index from 1 (poor) to 5 (excellent)	8.4	8.3
7	Recreational parks	Number of recreational parks	Unit/km2	0.18	0.27
		Number of recreational parks	Unit/100,000 population	4.33	5.31
		Average rating of recreational parks	Index from 1 (poor) to 5 (excellent)	4.3	4.4
		Number of reviews	Unit	112,056	117,794
8	Shopping	Number of shopping centres	Unit/km2	0.25	0.30

No	Urban Amenities	Indicator	Unit	Bekasi	Tangerang
	centre	Average rating of shopping centre	Index from 1 (poor) to 5 (excellent)	4.5	4.5
		Number of reviews	Unit	350,369	511,564

Source: Authors.

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