

**Coordinating Ministry for Economic Affairs  
Republic of Indonesia**

**JABODETABEK Urban Transportation  
Policy Integration Project Phase 2  
in the Republic of Indonesia**

**Annex 04: Socioeconomic Framework**

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## Abbreviations

AGT	Automated Guideway Transit
APM	Automatic Passenger Movement
BODETABEK	Bogor, Depok, Tangerang, and Bekasi
BAPPENAS	Badan Perencanaan Pembangunan Nasional (National Development Planning Agency)
ATR/BPN	Agrarian Affairs and Spatial Planning
BPS	Badan Pusat Statistik (Statistics Indonesia)
BPTJ	Greater Jakarta Transportation Authority
CPI	Consumer Price Index
DKI Jakarta	Jakarta Special Capital Province (Provinsi Daerah Khusus Ibukota Jakarta)
GIS	Geographic Information System
GDP	Gross Domestic Product
GRDP	Gross Regional Domestic Product
Ha	Hectare
JABODETABEK	Jakarta, Bogor, Depok, Tangerang, and Bekasi
JABODETABEKPUNJUR	Jakarta, Bogor, Depok, Tangerang, Bekasi, Puncak, and Cianjur
JUTPI 1	JABODETABEK Urban Transportation Policy Integration Phase 1
JUTPI 2	JABODETABEK Urban Transportation Policy Integration Phase 2
Kab (Kabupaten)	District or Regency
Kel (Kelurahan/Desa)	Village
LRT	Light Rail Transit
MRT	Mass Rapid Transit
RITJ	JABODETABEK Transportation Master Plan
RTRW	Rencana Tata Ruang Wilayah (Spatial Planning)
SITRAMP	Study on Integrated Transportation Master Plan
TAZ	Traffic Analysis Zone
TFR	Total Fertility Rate
TOD	Transit-Oriented Development
OECD	Organisation for Economic Co-operation and Development
UNFPA	The United Nations Fund for Population Activities



## Chapter 1 DEMOGRAPHIC FRAMEWORK

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This report describes the Socioeconomic Framework that will be utilized thoroughly to prepare inputs for the transport demand forecast and other elements for formulating transport master plan. Socioeconomic framework constitutes the basis for the travel demand forecast, which in turn serves as the basis for formulating transport master plan. Therefore, it is vital to utilize an up-to-date socioeconomic profile based on which the future socioeconomic framework is projected.

The main framework of socioeconomics consists of three key elements, demographic, employment and students, and macroeconomic. This chapter describes the first element, the demographic framework that states a comprehensive discussion of current trends and future population estimation in the JABODETABEK area that is driven by applying the Cohort Change methodology. The second element is a discussion focusing on employment and school enrollments that depicts the profile of workers and students with the future projection. The third element is Gross Domestic Product (GDP) trends at the JABODETABEK level, including forecasts to the year 2035.

### 1.1 Population Trend and Analysis

The population of JABODETABEK is 33.1 million in 2017; 10.35 million in DKI Jakarta, 15.4 million in five *kota/kabupaten* in Jawa Barat Province, and 7.4 million in three *Kota/ Kabupaten* in Banten Province.

**Table 1 Population of JABODETABEK by Region Year as of 2017**

Region	Population	Area size (km <sup>2</sup> )	Population Density (persons/km <sup>2</sup> )
DKI Jakarta	10,350,338	662	15,627
Kota Tangerang	2,139,891	165	13,005
Kota Tangerang Selatan	1,644,899	147	11,175
Kab. Tangerang	3,584,770	960	3,736
Kota Bogor	1,081,009	119	9,122
Kab. Bogor	5,715,009	2,664	2,145
Kota Depok	2,254,513	200	11,256
Kota Bekasi	2,859,630	210	13,586
Kab. Bekasi	3,500,023	1274	2,748
BODETABEK	22,779,744	5,738	3,970
<b>JABODETABEK</b>	<b>33,130,082</b>	<b>6,401</b>	<b>5,176</b>

Source: BPS, 2018

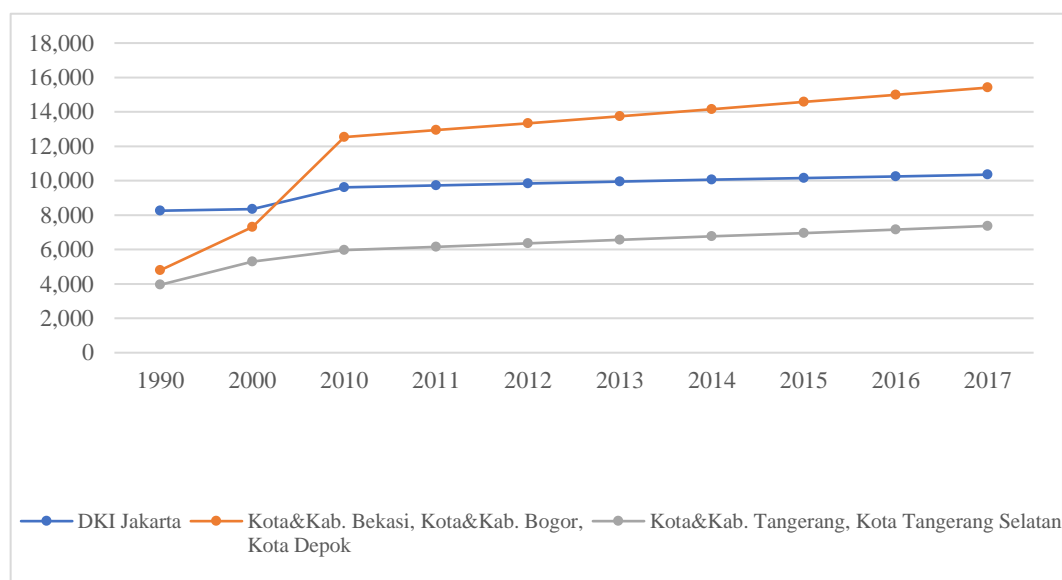
Outside of DKI Jakarta, the most populous city is Kota Bekasi while Kabupaten Bogor is the most populous regency. In terms of density, DKI Jakarta is the densest region followed by Kota Bekasi and Kota Tangerang. Approximately, JABODETABEK's population has been doubled in the last 3 decades (from 1990-2017) with an average growth of 3.6%, and since 2000, the number has increased for more than 40% with the similar growth rate. The population growth rate of the BODETABEK area has continuously increased throughout the period and is currently higher than that of DKI Jakarta (see Table 2 and Figure 1).

**Table 2 Time-series Population in JABODETABEK**

Unit (1000 persons)

Region	Population									
	1990	2000	2010	2011	2012	2013	2014	2015	2016	2017
<b>DKI Jakarta</b>	8,254	8,347	9,618	9,730	9,839	9,947	10,052	10,154	10,254	10,350
<b>Kota&amp;Kab. Bekasi, Kota&amp;Kab. Bogor, Kota Depok</b>	4,797	7,300	12,540	12,939	13,343	13,749	14,160	14,574	14,990	15,410
<b>Kota&amp;Kab. Tangerang, Kota Tangerang Selatan</b>	3,949	5,300	5,959	6,155	6,354	6,553	6,757	6,960	7,165	7,369
<b>JABODETABEK</b>	<b>16,956</b>	<b>20,964</b>	<b>28,117</b>	<b>28,824</b>	<b>29,536</b>	<b>30,249</b>	<b>30,969</b>	<b>31,688</b>	<b>32,409</b>	<b>33,129</b>

Source: Projected Population of Kota/Kabupaten Province of DKI Jakarta, Jawa Barat and Banten 2010-2020 (by BPS, UNFPA, 2015)



Source: Projected Population of *Kota/Kabupaten* Province of DKI Jakarta, Jawa Barat and Banten 2010-2020 (by BPS, UNFPA, 2015)

**Figure 1 JABODETABEK Population Trend**

In relation to the decrease in population growth rate of DKI Jakarta in the period of 1980 - 2000, BODETABEK showed significant growth. This means that BODETABEK area as part of the metropolitan area has experienced population growth with the fluctuated proportion in core areas and hinterland. As seen in Table 3, the number of populations of JABODETABEK in 2017 is 33 million and sex ratio for all ages was 103, which means that there are 103 males exist over 100 females

**Table 3 Population by Gender and Age in JABODETABEK as of 2017**

Age Group	Male	Female	Total	Percentage	Sex Ratio
0-4	1,591,605	1,527,701	3,119,306	9.42%	104
5-9	1,517,897	1,449,789	2,967,686	8.96%	105
10-14	1,331,091	1,266,332	2,597,423	7.84%	105
15-19	1,335,703	1,334,811	2,670,514	8.06%	100
20-24	1,475,111	1,507,893	2,983,004	9.00%	98
25-29	1,563,403	1,573,938	3,137,341	9.47%	99
30-34	1,574,851	1,552,635	3,127,486	9.44%	101
35-39	1,479,082	1,441,795	2,920,877	8.82%	103
40-44	1,315,490	1,241,440	2,556,930	7.72%	106
45-49	1,089,547	1,019,323	2,108,870	6.37%	107
50-54	860,963	812,548	1,673,511	5.05%	106
55-59	645,533	610,351	1,255,884	3.79%	106
60-64	439,997	410,141	850,138	2.57%	107
65-69	265,994	261,690	527,684	1.59%	102
70-74	153,857	170,298	324,155	0.98%	90

Age Group	Male	Female	Total	Percentage	Sex Ratio
75+	131,803	177,470	309,273	0.93%	74
<b>TOTAL</b>	<b>16,771,927</b>	<b>16,358,155</b>	<b>33,130,082</b>	<b>100%</b>	<b>103</b>

Source: Projected Population of Kota/Kabupaten Province of DKI Jakarta, Jawa Barat and Banten 2010-2020 (by BPS, UNFPA, 2015)

The highest populous ratio is for age 45-49 and 60-64 (sex ratio is 107) and the lowest populous ratio is for age 75+ (sex ratio is 74). Sex ratios for age 40-44, 50-54, and 55-59 are 106 – similar to the sex ratio of the highest population by age. While there is no specific features ratio for the age groups, it can be seen that the percentage of the young population (age group of 0-14) in JABODETABEK is 26.2% and the percentage of elderly (65 years or above) is 3.5%.

The population in the administrative of Kota/Kabupaten in DKI Jakarta from 1990 to 2020 is shown in Table 4. It is depicted that the rate of population growth in each Kabupaten/Kota is different in pattern. From 2001 through 2007, Jakarta Selatan and Jakarta Barat are recorded as the highest rate (2.79% and 2.09%) and Jakarta Utara as the lowest rate (0.08%). Although Jakarta Timur population is the largest of all DKI Jakarta's population, it is recorded as the lowest annual increment rate of 0.34%. While Jakarta Barat is the third-largest population, it is recorded as the second-highest population growth rate.

Changes in the trend of population concentration shifted to the West of Jakarta and East of Jakarta in the period 1990-2000. In the West and East areas, the population density increased rapidly from 105 people/ha to 151 people/ha and from 88 people/ha to 129 people/ha<sup>1</sup>, respectively.

**Table 4 DKI Jakarta Population by Administrative Kota/Kabupaten  
Year 1990 -2020**

Year	Jakarta Selatan	Jakarta Pusat	Jakarta Barat	Jakarta Timur	Jakarta Utara	Total
1990	1,773,685	1,148,669	1,377,651	1,733,101	1,075,253	7,110,349
2000	1,733,397	1,056,088	1,558,238	2,051,222	1,179,756	7,578,701
2005	1,995,214	861,531	2,322,232	2,121,280	1,205,919	8,506,176
2010	2,071,628	895,371	2,292,997	2,705,818	1,653,178	9,618,992
2015	2,185,711	914,182	2,463,560	2,843,816	1,747,315	10,154,584

<sup>1</sup> Referred from the Chapter 2 Analysis of RTRW, 2.3.1.1 Number of Population and Density

Year	Jakarta Selatan	Jakarta Pusat	Jakarta Barat	Jakarta Timur	Jakarta Utara	Total
2020	2,282,521	931,366	2,619,785	2,959,114	1,827,731	10,620,517

Source: Population Projection of *Kota/Kabupaten* in DKI Jakarta 2010 - 2020, BPS-UNFPA 2015

## 1.2 Existing Future Projection Data

### 1.2.1 Source of Population Projection Data

For the population projection, basic data of population, such as fertility, mortality, and migration rates are required. Population-based data is the number of populations by age group and gender from the 2010 Population Census.

The base year for the study is set in the year 2017 and the target year of 2035 together with the mid-term target year of 2029. Population-based data used is the number of populations by gender and age group in JABODETABEK in 2010 that comes from the 2010 Population Census. Based on the Census, various projections are made by various institutions. However, there is no projection available for the target year of 2035 for the JABODETABEK area. The data to be referred to as listed below:

1. Projected Population of *Kota/Kabupaten* of DKI Jakarta, Jawa Barat, and Banten Provinces 2010 - 2020 (by BPS, UNFPA, 2015)
2. Indonesia Population Projection 2010 - 2035 (by BAPPENAS, BPS, UNFPA, 2013)
3. Technical Material of RTRW Jakarta Bogor Depok Tangerang Bekasi Puncak Cianjur (JABODETABEKPUNJUR), (by Ministry of Public Works, 2010 based on the Presidential Regulation No. 54 in 2008).

Projected Population of *Kota/ Kabupaten* of DKI Jakarta, Jawa Barat, and Banten Provinces 2010 – 2020 is limited to 2020 only, while Indonesian Population Projection 2010 - 2035 has the projection for the year of 2035 but limited for provincial level only. On the other hand, Technical Material of RTRW JABODETABEKPUNJUR analyzes the population projection in JABODETABEK area for the year of 2030 only, but not for the year of 2035.

As advised by BPS, two projection data developed by BPS, namely; Indonesia Population Projection 2010 - 2035 (by BAPPENAS, BPS, UNFPA, 2013) and Projected Population of

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*Kota/Kabupaten* of DKI Jakarta, Jawa Barat and Banten Provinces 2010 - 2020 (by BPS, UNFPA, 2015); are referred as the base data of the projection.

Table 5 shows the projection described in the Projected Population of *Kabupaten/Kota* of DKI Jakarta, Jawa Barat, and Banten Provinces 2010 – 2020 report.

**Table 5 Projection of Total Population by Age in JABODETABEK**

Age Group	2017	2018	2019	2020
0-4	3,119,306	3,124,864	3,127,020	3,126,252
5-9	2,967,686	3,041,956	3,103,422	3,141,938
10-14	2,597,423	2,654,231	2,719,924	2,801,787
15-19	2,670,514	2,702,180	2,738,300	2,778,648
20-24	2,983,004	2,992,740	3,001,837	3,011,290
25-29	3,137,341	3,140,867	3,143,449	3,147,883
30-34	3,127,486	3,156,924	3,187,597	3,220,928
35-39	2,920,877	2,979,203	3,031,263	3,069,175
40-44	2,556,930	2,636,021	2,710,931	2,787,865
45-49	2,108,870	2,190,839	2,271,305	2,349,382
50-54	1,673,511	1,753,812	1,835,502	1,917,416
55-59	1,255,884	1,323,536	1,393,528	1,467,817
60-64	850,138	911,394	973,018	1,033,394
65-69	527,684	67,774	611,917	660,077
70-74	324,155	344,312	367,458	394,287
75+	309,273	328,019	347,764	368,613
<b>TOTAL</b>	<b>33,130,082</b>	<b>33,848,672</b>	<b>34,564,235</b>	<b>35,276,752</b>

Source: Projected Population of *Kota/Kabupaten* of DKI Jakarta, Jawa Barat and Banten Provinces 2010 - 2020 (by BPS, UNFPA, 2015)

Another projection was produced by the Ministry of Public Works (now ATR/BPN) on the technical material of the JABODETABEKPUNJUR spatial plan (RTRW). As shown in Table 6, the technical material of RTRW JABODETABEKPUNJUR has a higher population projection compared to the projection by BPS until 2020.

**Table 6 Population Growth in JABODETABEK Area Year 2015-2030**

Province	<i>Kota/Kabupaten</i>	2014	2015	2020	2025	2030
DKI Jakarta	Jakarta Utara	1,729,444	1,754,852	1,864,392	1,973,932	2,083,472
	Jakarta Timur	2,817,994	2,860,435	3,033,844	3,207,252	3,380,660
	Jakarta Barat	2,430,410	2,475,092	2,671,358	2,867,625	3,063,892
	Jakarta Selatan	2,164,070	2,198,515	2,339,950	2,481,385	2,622,820
	Jakarta Pusat	910,381	907,953	917,023	926,093	935,163
	Total	10,052,299	10,196,847	10,826,567	11,456,287	12,086,007
Jawa Barat	Kab. Bogor	5,331,149	6,163,540	7,555,147	8,946,755	10,338,362
	Kota Bogor	1,030,720	1,054,809	1,159,284	1,263,759	1,368,234
	Kab. Bekasi	3,122,698	3,249,919	3,869,438	4,488,956	5,108,474
	Kota Bekasi	2,642,508	2,727,414	3,119,958	3,512,501	3,905,044

Province	Kota/Kabupaten	2014	2015	2020	2025	2030
	Kota Depok	2,033,508	2,111,257	2,483,943	2,856,630	3,229,317
	Total	14,160,583	15,306,939	18,187,770	21,068,601	23,949,431
Banten	Kota Tangerang	1,999,894	2,054,926	2,311,251	2,567,576	2,823,901
	Kota Tangerang Selatan	1,492,999	1,545,457	1,800,592	2,055,727	2,310,862
	Kab. Tangerang	3,264,776	3,373,383	3,912,389	4,451,396	4,990,403
	Total	6,757,669	6,973,766	8,024,232	9,074,699	10,125,166
<b>Total JABODETABEK</b>		<b>30,970,551</b>	<b>32,477,552</b>	<b>37,038,569</b>	<b>41,599,587</b>	<b>46,160,604</b>

Source: Technical Material of RTRW JABODETABEKPUNJUR, (by Ministry of Public Works, 2010)

### 1.2.2 Existing Future Population Projection of Kota and Kabupaten

Existing future population projection is available from the year 2010 – 2020 by gender and age for each Kota/Kabupaten provided by BPS and UNFPA. The table below is the population projection in DKI Jakarta. Based on BPS data, the DKI Jakarta population grows 5-6% in 5 years or 1% annually. In 2020, its population will reach 11 million approximately. The trend of female population growth is higher than male especially age 20-29 and above 60 years.

**Table 7 Population of DKI Jakarta by Gender and Age**

DKI Jakarta	2010	2015	2020	2010	2015	2020
	Male			Female		
0-4	436,194	480,683	442,582	410,059	462,787	425,334
5-9	400,295	434,404	478,606	378,551	410,005	461,866
10-14	350,069	372,724	415,439	350,828	355,455	394,139
15-19	396,276	345,215	368,118	426,838	359,687	359,297
20-24	510,454	418,133	355,237	514,491	464,257	378,080
25-29	560,355	523,974	423,114	537,526	523,812	468,098
30-34	518,020	533,326	505,798	485,072	508,741	504,754
35-39	435,996	474,810	503,146	402,982	450,338	484,329
40-44	358,423	399,705	447,782	337,473	379,955	432,678
45-49	284,913	333,249	379,635	279,544	322,483	367,616
50-54	220,050	266,464	316,612	218,200	267,225	311,501
55-59	158,603	202,568	249,119	153,708	206,020	255,173
60-64	103,524	141,352	183,570	101,930	142,095	192,905
65-69	64,679	87,709	122,016	68,388	90,817	128,547
70-74	38,407	50,041	69,486	43,564	56,472	76,474
75+	31,728	39,280	52,346	41,852	50,798	67,120
<b>Total</b>	<b>4,867,986</b>	<b>5,103,637</b>	<b>5,312,606</b>	<b>4,751,006</b>	<b>5,050,947</b>	<b>5,307,911</b>

Source: JUTPI 2 based on Projected Population of Kota/Kabupaten Province of DKI Jakarta, Jawa Barat and Banten 2010 - 2020 (by BPS, UNFPA, 2015)

Kabupaten Bogor population grows for 2.49% on average with the trend of female population growth is higher than male. As shown in Table 8, in 2020, the population of

Kabupaten Bogor is projected to surpass 6 million or increased by more than 25% since 2010. This indicates that Kabupaten Bogor has been accommodating some newly developed areas for housing and commercial as a result of development limitations in its surroundings and improvement of the commuter line.

**Table 8 Population of Kabupaten Bogor by Gender and Age**

Kabupaten Bogor	2010	2015	2020	2010	2015	2020
	Male			Female		
0-4	263,645	286,595	295,651	248,766	275,728	284,947
5-9	254,504	275,356	298,429	241,998	260,379	287,734
10-14	255,382	271,640	292,632	242,265	257,174	275,687
15-19	245,933	270,466	285,238	236,362	258,322	271,671
20-24	239,646	260,673	283,395	234,798	258,587	279,750
25-29	221,592	239,999	259,333	219,677	235,439	257,632
30-34	214,775	229,717	246,627	213,310	230,446	245,097
35-39	198,527	224,642	238,657	185,752	215,802	232,299
40-44	166,416	199,395	224,409	149,525	181,729	210,604
45-49	129,134	162,485	194,092	113,187	143,145	173,657
50-54	97,630	124,993	156,767	83,869	111,594	140,724
55-59	67,212	91,477	116,978	56,601	80,169	106,480
60-64	44,408	63,515	86,505	41,687	57,193	80,887
65-69	29,388	39,031	56,052	30,130	38,772	53,330
70-74	20,280	26,510	35,534	22,467	28,857	37,342
75+	19,786	26,413	35,639	25,224	33,425	44,454
<b>Total</b>	<b>2,468,258</b>	<b>2,792,907</b>	<b>3,105,938</b>	<b>2,345,618</b>	<b>2,666,761</b>	<b>2,982,295</b>

Source: JUTPI 2 based on Projected Population of Kota/Kabupaten Province of DKI Jakarta, Jawa Barat and Banten 2010 - 2020 (by BPS, UNFPA, 2015)

The population growth of Kota Bogor is 1.69%, which set as the lowest growth among the BODETABEK area. In this city, female population growth is higher than the male population growth. In 2020, it is projected that the population of Kota Bogor will be maintained around 1.1 million due to land limitations. As a result, development expands from the city center towards the suburban area.

**Table 9 Population of Kota Bogor by Gender and Age**

Kota Bogor	2010	2015	2020	2010	2015	2020
	Male			Female		
0-4	47,273	49,223	48,654	43,616	46,204	45,610
5-9	44,317	45,931	47,695	41,813	42,981	45,377
10-14	42,542	43,346	44,738	41,171	41,761	42,769
15-19	44,960	47,364	47,859	45,863	47,905	48,134
20-24	48,565	50,603	52,710	46,298	48,730	50,356
25-29	46,093	47,822	49,510	44,417	45,479	47,549



Kota Bogor	2010	2015	2020	2010	2015	2020
	Male			Female		
30-34	44,693	45,791	47,103	42,397	43,774	44,462
35-39	40,155	43,525	44,305	38,204	42,400	43,597
40-44	34,829	39,976	43,107	33,115	38,441	42,523
45-49	27,870	33,594	38,449	26,988	32,603	37,756
50-54	22,931	28,125	33,799	21,544	27,338	32,926
55-59	16,943	22,092	27,066	15,624	21,101	26,733
60-64	10,415	14,270	18,621	9,906	12,987	17,544
65-69	7,010	8,922	12,273	7,703	9,478	12,477
70-74	4,670	5,849	7,511	5,441	6,683	8,269
75+	4,361	5,585	7,206	6,350	8,039	10,239
<b>Total</b>	<b>487,627</b>	<b>532,018</b>	<b>570,606</b>	<b>470,450</b>	<b>515,904</b>	<b>556,321</b>

Source: JUTPI 2 based on Projected Population of Kota/Kabupaten Province of DKI Jakarta, Jawa Barat and Banten 2010 - 2020 (by BPS, UNFPA, 2015)

The population of Kota Depok is projected to rise to nearly 2.5 million in 2020 with an average growth of 3.79% or the second-highest after Kabupaten Bekasi. Compared to 2010, the population in 2020 is projected to increase as much as 41%. In terms of gender composition, the number of female populations is higher than the male with slight differences only.

**Table 10 Population of Kota Depok by Gender and Age**

Kota Depok	2010	2015	2020	2010	2015	2020
	Male			Female		
0-4	91,180	104,353	113,507	84,497	98,478	107,144
5-9	81,045	92,320	105,500	77,428	87,579	101,885
10-14	72,869	81,604	92,691	70,065	78,192	88,250
15-19	74,157	85,866	95,481	78,084	89,744	99,384
20-24	83,288	95,383	109,340	83,635	96,824	110,287
25-29	84,436	96,283	109,699	87,590	98,720	113,702
30-34	89,984	101,330	114,708	88,821	100,883	112,959
35-39	81,192	96,726	108,353	77,857	95,061	107,716
40-44	69,058	87,119	103,382	64,178	81,976	99,970
45-49	52,061	68,975	86,874	50,111	66,600	85,003
50-54	39,536	53,298	70,482	37,381	52,182	69,263
55-59	28,026	40,163	54,152	25,940	38,543	53,806
60-64	16,963	25,546	36,684	16,749	24,177	35,971
65-69	11,943	16,705	25,291	11,495	15,528	22,454
70-74	6,729	9,264	13,093	7,006	9,457	12,866
75+	4,943	6,954	9,881	7,365	10,269	14,408
<b>Total</b>	<b>887,410</b>	<b>1,061,889</b>	<b>1,249,118</b>	<b>868,202</b>	<b>1,044,213</b>	<b>1,235,068</b>

Source: JUTPI 2 based on Projected Population of Kota/Kabupaten Province of DKI Jakarta, Jawa Barat and Banten 2010 - 2020 (by BPS, UNFPA, 2015)

On average, the population growth of Kota Bekasi is 2.85%, with the trend of female population growth is higher than males, and the number of males is slightly higher than the females. By the year 2020, the population of Kota Bekasi will surpass 3 million with the most populous age bracket is between year 20-24.

**Table 11 Population of Kota Bekasi by Gender and Age**

Kota Bekasi	2010	2015	2020	2010	2015	2020
	Male			Female		
0-4	114,569	125,991	131,712	107,850	120,953	126,725
5-9	105,185	115,130	126,448	99,426	108,232	121,261
10-14	97,531	104,947	114,569	93,614	100,547	109,281
15-19	104,901	116,712	124,731	111,739	123,591	131,797
20-24	121,816	134,051	147,684	124,085	138,233	151,626
25-29	121,774	133,428	146,104	122,966	133,355	147,924
30-34	117,145	126,757	137,907	116,725	127,582	137,574
35-39	102,198	116,988	125,951	99,521	116,920	127,563
40-44	89,361	108,320	123,540	87,929	108,052	126,783
45-49	73,139	93,108	112,707	72,329	92,512	113,676
50-54	57,924	75,029	95,360	51,318	69,034	88,254
55-59	39,989	55,063	71,352	31,945	45,826	61,781
60-64	21,918	31,718	43,775	17,976	24,869	35,766
65-69	12,475	16,767	24,397	11,576	15,040	20,928
70-74	6,696	8,858	12,031	7,437	9,665	12,678
75+	4,999	6,755	9,227	8,044	10,792	14,578
<b>Total</b>	<b>1,191,620</b>	<b>1,369,622</b>	<b>1,547,495</b>	<b>1,164,480</b>	<b>1,345,203</b>	<b>1,528,195</b>

Source: JUTPI 2 based on Projected Population of Kota/Kabupaten Province of DKI Jakarta, Jawa Barat and Banten 2010 - 2020 (by BPS, UNFPA, 2015)

By 2020, the population of Kabupaten Bekasi will be nearly 4 million. On average, the population growth in Kabupaten Bekasi is 4.23% or set as the highest among another Kota and Kabupaten in BODETABEK. Furthermore, the trend of female population growth is higher than males, and the number of female populations is surpassing the male in the age bracket of 25-29, 30-34, and above 65.

**Table 12 Population of Kabupaten Bekasi by Gender and Age**

Kabupaten Bekasi	2010	2015	2020	2010	2015	2020
	Male			Female		
0-4	149,581	175,659	196,014	140,412	168,145	187,872
5-9	128,690	150,417	176,339	122,907	142,862	170,681
10-14	115,423	132,630	154,549	110,196	126,375	146,479
15-19	118,150	140,372	160,133	117,428	138,661	157,676
20-24	146,009	171,579	201,775	143,740	171,013	200,031

Kabupaten Bekasi	2010	2015	2020	2010	2015	2020
	Male			Female		
25-29	141,634	165,724	193,704	143,591	166,275	196,694
30-34	137,652	159,054	184,713	140,255	163,673	188,238
35-39	123,050	150,417	172,859	113,345	142,290	165,617
40-44	97,751	126,533	154,040	83,604	109,812	137,691
45-49	68,357	92,925	120,071	57,738	78,883	103,495
50-54	48,555	67,163	91,118	41,999	60,351	82,283
55-59	31,437	46,229	63,940	27,595	42,177	60,528
60-64	21,777	33,655	49,575	20,848	30,904	47,247
65-69	13,057	18,737	29,104	14,072	19,571	29,142
70-74	8,637	12,202	17,688	10,531	14,624	20,492
75+	7,823	11,285	16,461	11,040	15,816	22,768
<b>Total</b>	<b>1,357,583</b>	<b>1,654,581</b>	<b>1,982,083</b>	<b>1,299,301</b>	<b>1,591,432</b>	<b>1,916,934</b>

Source: JUTPI 2 based on Projected Population of Kota/Kabupaten Province of DKI Jakarta, Jawa Barat and Banten 2010 - 2020 (by BPS, UNFPA, 2015)

The population of Kota Tangerang is projected to be nearly 2.3 million in 2020 with an average growth of 2.43%. The highest growth is contributed to by the female population. In terms of age, the group of 25 to 35 years is the most populous followed by the young age of 0-4 years.

**Table 13 Population of Kota Tangerang by Gender and Age**

Kota Tangerang	2010	2015	2020	2010	2015	2020
	Male			Female		
0-4	95,329	104,434	103,601	89,690	100,729	99,945
5-9	78,949	88,848	97,679	75,290	84,500	95,248
10-14	70,476	71,736	80,972	67,758	69,299	78,019
15-19	77,798	80,734	81,813	81,367	82,572	83,891
20-24	97,489	100,884	104,175	95,041	97,295	98,617
25-29	105,501	112,783	116,501	104,189	108,864	111,287
30-34	99,682	109,302	116,489	95,380	105,253	109,706
35-39	82,525	93,913	102,892	76,668	90,865	100,364
40-44	67,168	80,820	91,976	61,304	76,653	91,103
45-49	51,564	66,327	80,040	47,885	62,678	78,581
50-54	38,933	51,977	66,964	34,494	48,002	63,013
55-59	27,682	39,492	52,804	22,482	33,409	46,731
60-64	14,309	21,284	30,627	12,075	16,697	25,075
65-69	8,115	11,430	17,125	8,335	10,663	14,892
70-74	4,771	6,029	8,604	5,466	6,749	8,747
75+	4,200	5,120	6,529	6,583	7,764	9,687
<b>Total</b>	<b>924,491</b>	<b>1,045,113</b>	<b>1,158,791</b>	<b>884,007</b>	<b>1,001,992</b>	<b>1,114,906</b>

Source: JUTPI 2 based on Projected Population of Kota/Kabupaten Province of DKI Jakarta, Jawa Barat and Banten 2010 - 2020 (by BPS, UNFPA, 2015)

The population of Kabupaten Tangerang is projected to be nearly 4 million in 2020 with an average growth of 3.41%. The growth rate of the female population is higher than the average growth. The population structure of Kabupaten Tangerang tends to form an expansive pyramid, signs with numerous potentials of the young age group, especially 0-4 and 5-9 years.

**Table 14 Population of Kabupaten Tangerang by Gender and Age**

Kabupaten Tangerang	2010	2015	2020	2010	2015	2020
	Male			Female		
0-4	156,513	179,995	186,993	146,641	172,996	179,705
5-9	139,301	164,568	189,470	131,866	155,448	183,462
10-14	137,522	146,949	173,700	131,519	141,282	166,528
15-19	145,558	158,566	168,272	144,328	153,744	163,548
20-24	151,817	164,921	178,348	145,943	156,917	166,489
25-29	146,585	164,501	177,951	145,900	160,135	171,393
30-34	140,053	161,211	179,925	141,710	164,219	179,320
35-39	127,050	151,777	174,141	120,012	149,345	172,698
40-44	104,027	131,400	156,600	89,102	117,172	146,001
45-49	74,252	100,265	126,708	62,369	85,828	112,882
50-54	52,380	73,410	99,043	43,751	64,033	88,055
55-59	33,982	50,892	71,257	28,500	44,452	65,053
60-64	21,602	33,729	50,825	21,399	31,269	48,991
65-69	13,744	20,324	31,893	15,081	20,327	29,795
70-74	9,062	12,019	17,962	11,040	14,329	19,500
75+	8,130	10,388	13,889	11,443	14,183	18,483
<b>Total</b>	<b>1,461,578</b>	<b>1,724,915</b>	<b>1,996,977</b>	<b>1,390,604</b>	<b>1,645,679</b>	<b>1,911,903</b>

Source: JUTPI 2 based on Projected Population of Kota/Kabupaten Province of DKI Jakarta, Jawa Barat and Banten 2010 - 2020 (by BPS, UNFPA, 2015)

In 2020, the population of Kota Tangerang Selatan is projected to be nearly 2 million with an average growth of 3.55%. The most populous group is between the mature age of 30-34 and 35-39 years. For 10 years, the population of Kota Tangerang Selatan has been increased by nearly 40% due to extensive housing development and its supporting facilities.

**Table 15 Population of Kota Tangerang Selatan by Gender and Age**

Kota Tangerang Selatan	2010	2015	2020	2010	2015	2020
	Male			Female		
0-4	64,551	73,822	76,340	60,904	71,429	73,916
5-9	58,018	68,160	78,113	55,263	64,773	76,145
10-14	53,704	57,066	67,142	51,192	54,675	64,203
15-19	56,143	60,822	64,246	59,974	63,571	67,359
20-24	61,217	66,132	71,187	63,830	68,262	72,203
25-29	65,104	72,655	78,234	68,232	74,502	79,454

Kota Tangerang Selatan	2010	2015	2020	2010	2015	2020
	Male			Female		
30-34	65,230	74,668	82,954	65,905	75,934	82,594
35-39	59,957	71,229	81,350	58,523	72,360	83,338
40-44	51,834	65,111	77,240	48,513	63,312	78,436
45-49	40,741	54,708	68,818	38,814	53,041	69,322
50-54	30,458	42,448	57,008	27,271	39,626	54,244
55-59	21,583	32,145	44,803	17,703	27,466	40,061
60-64	11,576	17,976	26,965	9,668	13,952	21,861
65-69	7,044	10,358	16,180	7,283	9,735	14,181
70-74	4,144	5,466	8,131	4,532	5,841	7,879
75+	3,892	4,947	6,585	5,701	7,017	9,113
<b>Total</b>	<b>655,196</b>	<b>777,713</b>	<b>905,296</b>	<b>643,308</b>	<b>765,496</b>	<b>894,309</b>

Source: JUTPI 2 based on Projected Population of Kota/Kabupaten Province of DKI Jakarta, Jawa Barat and Banten 2010 - 2020 (by BPS, UNFPA, 2015)

### 1.3 Future Population

#### 1.3.1 Methodology

The projections that are produced utilize the cohort-component method. The cohort component method includes the component of demographic change to project population growth. The technique projected the population by age group, age of cohort typically split between males and females and are often subdivided by race and ethnicity; occasionally they are subdivided by other characteristics as well.

- The Cohort-Component Model generally divides the age group population-based on 5-year intervals
- The survival rate projection including migration, fertility, and mortality are considered.

$P_1^0$  : 1st age group (0-4)

$f_1$  : Projected Year 1<sup>st</sup> (2025)

u : Highest age Group

S : Average Survivor Rate

$Y_1$  : Year 1<sup>st</sup> (2010)

N : Average Population growth rate

Age cohort 2010	Age cohort 2015
0-4	0-4
5-9	5-9
10-14	10-14
15-19	15-19
20-24	20-24
25-29	25-29
30-34	30-34
35-39	35-39
40-44	40-44
45-49	45-49
50-54	50-54
55-59	55-59
60-64	60-64
65-69	65-69
70-74	70-74
75+	75+

Source: JUTPI 2

	$Y_1$	$Y_2$	.	.	$F_1$	.	.
$P_1^0$							
$P_2^0$							
.							
.							
.							
.							
$P_u^0$							

$$S_{y_1y_2}: P_{y_2} / P_{y_1}$$

$$P_1^{f1}: P_1^{y_3} \times (P_1^{y_3} / P_1^{y_2})$$

$$P_2^{f1}: P_1^{y_3} \times S_2^{y_2y_3}$$

$$N_u^{y_2y_3}: (P_u^{y_3} - P_u^{y_2}) / P_u^{y_2}$$

$$P_u^{f1}: P_u^{y_3} \times (1 + N_u^{y_2y_3})$$

**Figure 2 Method of Population Projection (Cohort Component Technique)**

Survival rates are generally high in all age groups (Table 16). The rate includes migration, which may cause a higher rate in the age group of 15-29. Unfortunately, migration rates are not available at the *Kota/Kabupaten* level. In most of the age groups, the rates are improving continuously.

**Table 16 Survival Rate of DKI Jakarta by Gender and Age Bracket**

Age Group	2010-2015	2015-2020	2010-2015	2015-2020
	Male		Female	
5-9	99.6%	99.6%	100.0%	99.8%
10-14	93.1%	95.6%	93.9%	96.1%
15-19	98.6%	98.8%	102.5%	101.1%
20-24	105.5%	102.9%	108.8%	105.1%
25-29	102.6%	101.2%	101.8%	100.8%
30-34	95.2%	96.5%	94.6%	96.4%
35-39	91.7%	94.3%	92.8%	95.2%
40-44	91.7%	94.3%	94.3%	96.1%
45-49	93.0%	95.0%	95.6%	96.8%
50-54	93.5%	95.0%	95.6%	96.6%
55-59	92.1%	93.5%	94.4%	95.5%
60-64	89.1%	90.6%	92.4%	93.6%
65-69	84.7%	86.3%	89.1%	90.5%
70-74	77.4%	79.2%	82.6%	84.2%

Source: JUTPI 2 based on Projected Population of *Kota/Kabupaten* Province of DKI Jakarta, Jawa Barat and Banten 2010 - 2020 (by BPS, UNFPA, 2015)

Fertility rates are obtained from the Indonesian Population Projection 2010-2035 (by BAPPENAS, BPS, UNFPA, 2013) for provincial levels (as shown in Table 17). Total Fertility Rate (TFR) is the average number of children that women would have at the end

of her reproductive age. However, in this study, TFR for *Kota/Kabupaten* level and in age groups is not obtained, thus, TFR for JABODETABEK cannot be produced.

**Table 17 Total Fertility Rate by Province**

TFR	2010	2015	2020	2025	2030	2035
DKI Jakarta	1.9	1.8	1.8	1.7	1.7	1.6
Jawa Barat	2.5	2.3	2.2	2.1	2.0	1.9
Banten	2.6	2.4	2.2	2.0	1.9	1.8

Source: Indonesia Population Projection 2010 - 2035 (by BAPPENAS, BPS, UNFPA, 2013)

In relation to the mortality rate, the number in the age group over 75 in Table 18 shows continuous growth in accordance with the growth of the total population. Similar to TFR, the mortality rate for JABODETABEK could not be produced.

**Table 18 Annual Population Growth Rates for the Over-75 Age Bracket**

	2000-2005	2005-2010	2010-2015	2015-2020
Male	5.86%	2.08%	5.98%	7.03%
Female	6.07%	4.47%	5.58%	6.67%

Source: JUTPI 2

### 1.3.2 Projection Results

Since the cohort methodology indicated a disaggregate measurement, then the detailed result of the age group and gender proportion is expected. In the JABODETABEK case, the projection can be shown both in the aggregate scale of JABODETABEK and *Kota/Kabupaten*. Generally, the JABODETABEK population will reach 45.3 million in the year 2035 with most populations contributed by DKI Jakarta, followed by Kabupaten Bogor, and Kabupaten Bekasi.

#### (1) JABODETABEK Population Projection

The number of populations of the JABODETABEK area in the year 2035 is predicted at 45.3 million with a 2% average population growth. The sex ratio for all ages is 100 since there is an equal proportion between males and females. Compare to prior years, the male proportion is bigger which indicates that male's life expectancy is higher throughout the years. The population projection of

JABODETABEK is depicted in the following table.

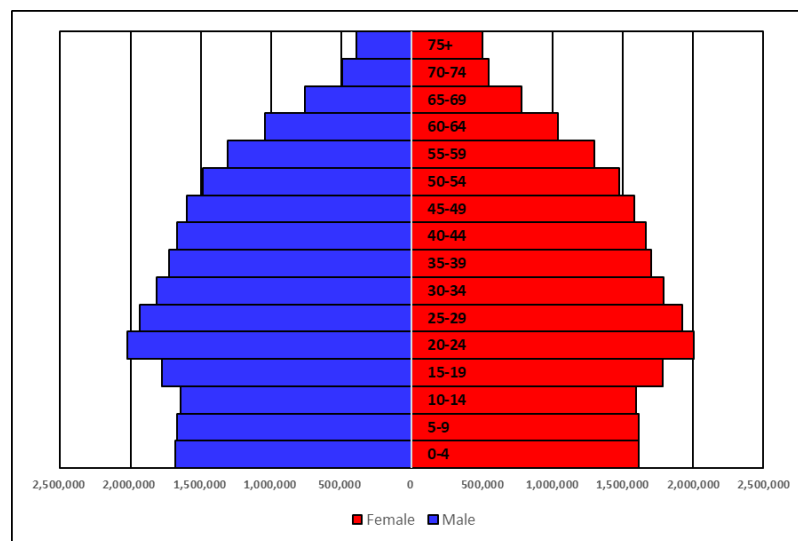
**Table 19 Population Projection by Gender and Age Group (JABODETABEK)**

	2017	2020	2025	2029	2030	2035
<b>Male</b>						
0-4	1,591,605	1,595,054	1,609,482	1,621,129	1,624,041	1,638,732
5-9	1,517,897	1,598,279	1,612,737	1,624,407	1,627,325	1,642,045
10-14	1,331,091	1,436,432	1,599,725	1,611,301	1,614,195	1,628,797
15-19	1,335,703	1,395,891	1,563,260	1,705,428	1,740,970	1,756,718
20-24	1,475,111	1,503,851	1,607,216	1,761,381	1,799,923	2,004,537
25-29	1,563,403	1,554,150	1,598,246	1,686,129	1,708,099	1,912,902
30-34	1,574,851	1,616,224	1,613,091	1,649,706	1,658,859	1,772,878
35-39	1,479,082	1,551,654	1,627,233	1,624,709	1,624,079	1,670,159
40-44	1,315,490	1,422,076	1,549,528	1,609,909	1,625,004	1,621,853
45-49	1,089,547	1,207,394	1,386,495	1,485,905	1,510,758	1,584,345
50-54	860,963	987,153	1,185,203	1,325,850	1,361,012	1,482,991
55-59	645,533	751,471	947,516	1,099,594	1,137,613	1,306,363
60-64	439,997	527,147	682,850	825,365	860,993	1,033,732
65-69	265,994	334,331	460,107	568,828	596,008	751,496
70-74	153,857	190,040	276,265	359,410	380,196	492,495
75+	131,803	157,763	213,225	273,194	288,186	389,499
<b>Total</b>	<b>16,771,927</b>	<b>17,828,910</b>	<b>19,532,178</b>	<b>20,832,245</b>	<b>21,157,262</b>	<b>22,689,543</b>
<b>Female</b>						
0-4	1,527,701	1,531,198	1,545,072	1,556,271	1,559,071	1,573,197
5-9	1,449,789	1,543,659	1,557,645	1,568,936	1,571,759	1,586,000
10-14	1,266,332	1,365,355	1,553,439	1,564,699	1,567,514	1,581,717
15-19	1,334,811	1,382,757	1,541,489	1,711,367	1,753,837	1,769,727
20-24	1,507,893	1,507,439	1,581,747	1,727,007	1,763,322	2,006,228
25-29	1,573,938	1,593,733	1,601,511	1,664,667	1,680,456	1,873,363
30-34	1,552,635	1,604,704	1,653,628	1,660,084	1,661,698	1,743,611
35-39	1,441,795	1,517,521	1,601,555	1,640,617	1,650,383	1,658,437
40-44	1,241,440	1,365,789	1,506,938	1,573,696	1,590,385	1,638,873
45-49	1,019,323	1,141,988	1,347,949	1,459,393	1,487,254	1,569,612
50-54	812,548	930,263	1,132,843	1,296,292	1,337,154	1,475,344
55-59	610,351	716,346	901,276	1,058,290	1,097,544	1,295,489
60-64	410,141	506,247	672,613	811,525	846,253	1,030,538
65-69	261,690	325,746	465,654	588,074	618,679	778,396
70-74	170,298	204,247	289,359	388,783	413,639	549,571
75+	177,470	210,850	281,195	356,245	375,008	500,120
<b>Total</b>	<b>16,358,155</b>	<b>17,447,842</b>	<b>19,233,912</b>	<b>20,625,948</b>	<b>20,973,957</b>	<b>22,630,223</b>
<b>Grand Total</b>	<b>33,130,082</b>	<b>35,276,752</b>	<b>38,766,091</b>	<b>41,458,193</b>	<b>42,131,218</b>	<b>45,319,765</b>

Source: JUTPI 2



Population structure as illustrated in Figure 3 shows that the age group with the highest percentage is 20-24 with approximately 9% of the total population, followed by age group 25-29 and 15-19 with 8.4% and 7.8% respectively. Moreover, the highest populous ratio is for ages 0-4 and 5-9 (sex ratio is 104) and the lowest populous ratio is for age 75+ (sex ratio is 78). The sex ratio for the middle age of 45-65 is 101, a minor ratio which stated that 101 males exist over 100 females.



Source: JUTPI 2

**Figure 3 Population Structure of JABODETABEK Year 2035**

Though there is no specific features ratio for the age groups, it can be seen that the percentage of the young population (age group of 0-14) in JABODETABEK is 21.3% and the percentage for the elderly (65 years or above) is 7.6%. Compared to the figures in 2017, the young population (0-14) in 2017 was 26.2% and the elderly population (65 years or above) was 3.5%, which means the society has been aging progressively.

## (2) DKI Jakarta Population Projection

In the year 2035, the number of populations of DKI Jakarta is projected at 11.1 million with an average growth of less than 1% each year as seen in Table 20. The most populous age bracket is between 20 to 24 years old (8.32%) and is followed by age 45-49 and 50-54. Meanwhile, the least proportion of the age bracket is 75+ years with only 2.5%. This explains that people at the young ages (below 15) will become an influential

group of productive ages.

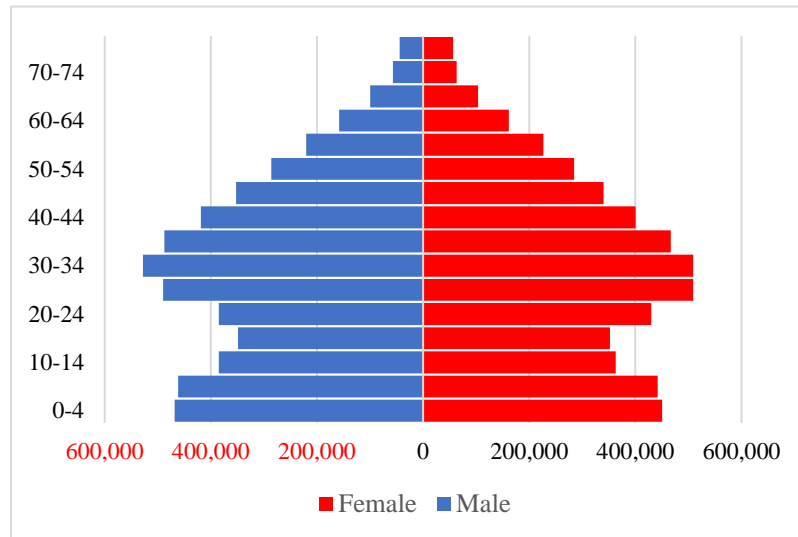
**Table 20 Population Projection by Gender and Age Group (DKI Jakarta)**

	2017	2020	2025	2029	2030	2035
<b>Male</b>						
0-4	468,268	442,582	407,501	381,661	375,201	345,461
5-9	461,468	478,606	440,670	412,726	405,740	373,580
10-14	385,202	415,439	457,711	428,687	421,431	388,027
15-19	348,689	368,118	410,305	443,705	452,055	416,223
20-24	385,092	355,237	378,805	413,534	422,217	465,179
25-29	489,759	423,114	359,469	378,548	383,317	427,246
30-34	528,194	505,798	408,437	359,287	346,999	370,021
35-39	487,780	503,146	477,176	403,694	385,324	327,363
40-44	418,848	447,782	474,505	454,911	450,013	363,390
45-49	352,159	379,635	425,298	445,603	450,679	427,417
50-54	285,989	316,612	360,682	395,389	404,066	428,180
55-59	220,571	249,119	296,003	328,964	337,204	377,764
60-64	158,447	183,570	225,755	259,745	268,242	305,579
65-69	99,835	122,016	158,459	187,590	194,873	231,548
70-74	56,655	69,486	96,665	119,762	125,536	154,385
75+	43,957	52,346	69,758	88,322	92,962	123,885
<b>Total</b>	<b>5,190,913</b>	<b>5,312,606</b>	<b>5,447,199</b>	<b>5,502,128</b>	<b>5,515,861</b>	<b>5,525,247</b>
<b>Female</b>						
0-4	450,484	425,334	390,912	365,603	359,276	330,200
5-9	442,102	461,866	424,488	397,005	390,134	358,561
10-14	363,144	394,139	443,993	415,248	408,061	375,037
15-19	351,849	359,297	398,399	438,714	448,792	412,472
20-24	430,215	378,080	377,670	410,551	418,772	471,742
25-29	508,714	468,098	381,208	380,877	380,795	422,236
30-34	509,004	504,754	451,067	384,084	367,338	366,940
35-39	466,442	484,329	480,533	439,645	429,423	349,712
40-44	400,495	432,678	465,336	462,419	461,689	412,583
45-49	340,166	367,616	418,627	443,905	450,224	446,696
50-54	284,582	311,501	355,097	394,516	404,371	434,892
55-59	226,872	255,173	297,452	330,756	339,082	386,133
60-64	161,764	192,905	238,929	270,599	278,517	317,496
65-69	103,811	128,547	174,513	207,821	216,148	251,962
70-74	63,282	76,474	108,245	139,210	146,951	182,011
75+	56,499	67,120	88,686	111,483	117,182	154,835
<b>Total</b>	<b>5,159,425</b>	<b>5,307,911</b>	<b>5,495,155</b>	<b>5,592,435</b>	<b>5,616,755</b>	<b>5,673,507</b>
<b>Grand Total</b>	<b>10,350,338</b>	<b>10,620,517</b>	<b>10,942,354</b>	<b>11,094,564</b>	<b>11,132,616</b>	<b>11,198,754</b>

Source: JUTPI 2

Overall sex ratio in DKI Jakarta is 99 which means that for every 100 females, 99 males exist. The highest populous ratio is for age 0-4 (sex ratio is 105) and the lowest populous ratio is for age 75+ (sex ratio is 80). In 2017, the young population (age 0-14) comprises 24.8% of the total population while in 2035 is 2.17 million or 19.5% of the total

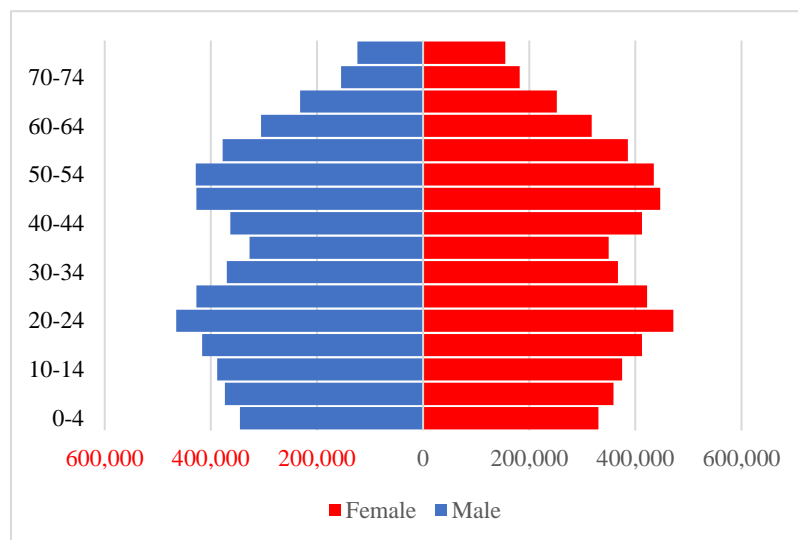
population as seen in the following picture.



Source: JUTPI 2

**Figure 4 Population Structure of DKI Jakarta in 2017**

On the other hand, the elderly population (65 years or above) in 2035 is 9.7% or much higher than in 2017 with 4.1%. Comparing the population structure between 2017 and 2035, the young population in 2017 is higher than that of 2035, which can be seen in the figure below.



Source: JUTPI 2

**Figure 5 Population Structure of DKI Jakarta in 2035**

From the comparison of age structure in 2017 and 2035, it is inferred that the young generation proportion will be diminished, which marked the aging society. In the long-term, this mature group of age will give an impact on a wider economy such as labor market, tax, and government spending.

Population projection of DKI Jakarta by city and gender is depicted in Table 21, which shows that Jakarta Timur has the largest population thorough the years and Jakarta Barat is the densest region.

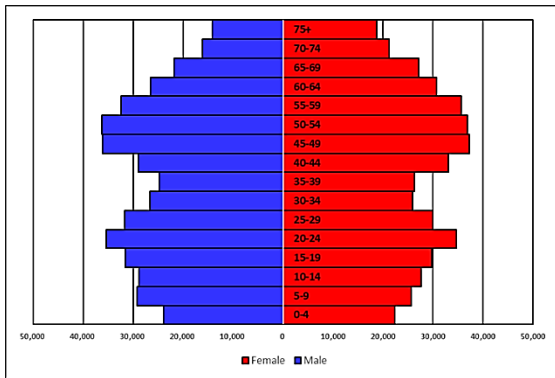
**Table 21 DKI Jakarta Population Projection by City and Gender**

Unit: 1000 persons

City	2017		2020		2025		2029		2030		2035	
	M	F	M	F	M	F	M	F	M	F	M	F
Jakarta Pusat	460	462	463	468	463	473	458	471	457	471	445	463
Jakarta Timur	1,458	1,435	1,487	1,472	1,514	1,512	1,518	1,526	1,520	1,530	1,508	1,530
Jakarta Selatan	1,115	1,112	1,140	1,143	1,166	1,180	1,174	1,197	1,177	1,201	1,174	1,207
Jakarta Barat	1,276	1,252	1,319	1,301	1,378	1,372	1,415	1,421	1,424	1,433	1,457	1,480
Jakarta Utara	883	899	903	925	927	959	939	979	942	984	947	1,000

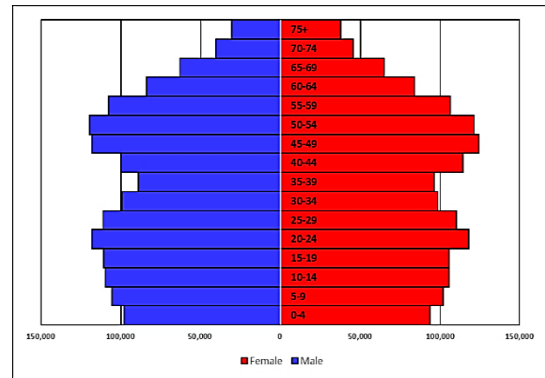
Source: JUTPI 2

In terms of population structure (showing in figure 6-10), it can be inferred that all cities in DKI Jakarta have a similar pattern, on which age bracket 20-24 is the biggest proportion. The second most populous is on the age bracket of 50-54, which depicts the mature society to some extent.



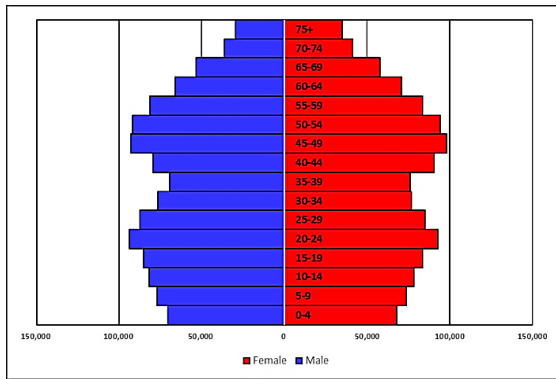
Source: JUTPI 2

**Figure 6 Population Structure of Jakarta Pusat in 2035**



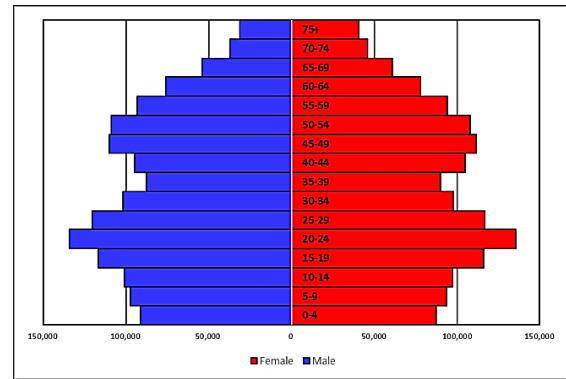
Source: JUTPI 2

**Figure 7 Population Structure of Jakarta Timur in 2035**



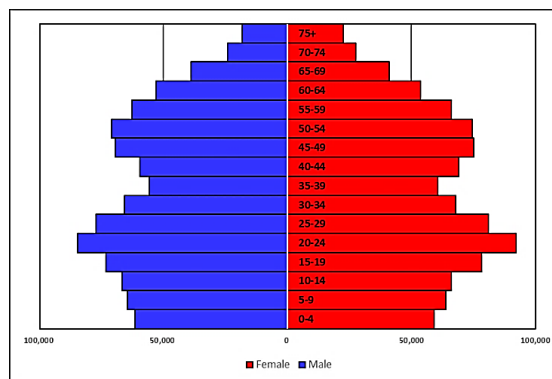
Source: JUTPI 2

**Figure 8 Population Structure of Jakarta Selatan in 2035**



Source: JUTPI 2

**Figure 9 Population Structure of Jakarta Barat in 2035**



Source: JUTPI 2

**Figure 10 Population Structure of Jakarta Utara in 2035**

### (3) Kota Bogor Population Projection

By the year 2035, it is projected that the number of populations of Kota Bogor is 1.34 million with an average growth of 1.1% each year. Population growth rate tends to decrease throughout the years. For the first 3 years (2017 – 2020), the growth rate was 4.25% or 1.42% annually. After 2020, the population growth rate started to slow down due to development limitations and socioeconomic policy. Hence, average growth declined to 1.1% in 2035. Detailed figures can be shown in the table below.

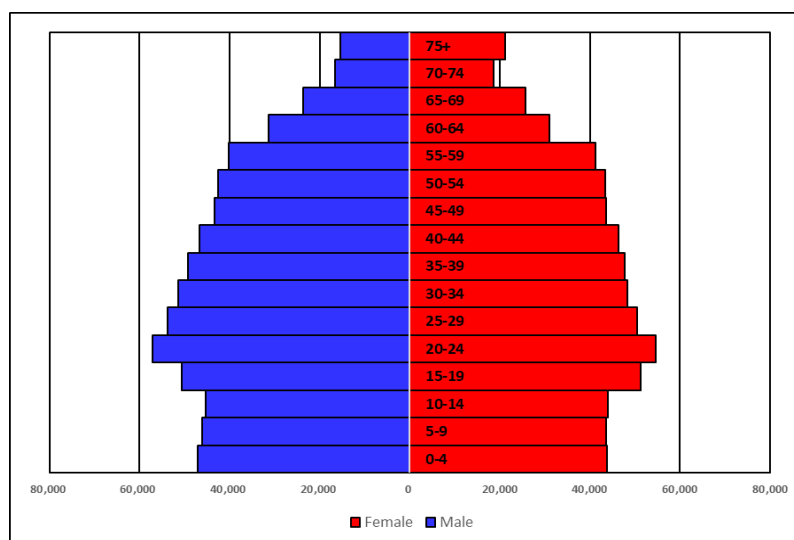
**Table 22 Population Projection by Gender and Age Group (Kota Bogor)**

	2017	2020	2025	2029	2030	2035
<b>Male</b>						
0-4	49,087	48,654	48,092	47,647	47,536	46,986
5-9	46,893	47,695	47,144	46,708	46,599	46,060
10-14	43,715	44,738	46,456	46,027	45,919	45,388
15-19	47,618	47,859	49,396	50,914	51,293	50,700
20-24	51,753	52,710	53,261	54,629	54,971	57,082
25-29	48,521	49,510	51,571	52,003	52,110	53,784
30-34	46,168	47,103	48,766	50,390	50,796	51,327
35-39	44,017	44,305	45,574	46,861	47,183	49,148
40-44	41,515	43,107	43,880	44,885	45,137	46,730
45-49	35,776	38,449	41,460	42,055	42,203	43,413
50-54	30,336	33,799	38,684	41,107	41,713	42,461
55-59	24,052	27,066	32,526	36,287	37,227	40,143
60-64	16,068	18,621	22,814	26,495	27,416	31,378
65-69	10,092	12,273	16,015	18,900	19,621	23,579
70-74	6,382	7,511	10,332	12,852	13,482	16,518
75+	6,203	7,206	9,297	11,456	11,996	15,478
<b>Total</b>	<b>548,196</b>	<b>570,606</b>	<b>605,268</b>	<b>629,216</b>	<b>635,203</b>	<b>660,175</b>
<b>Female</b>						
0-4	46,050	45,610	45,024	58,552	61,934	61,138
5-9	44,166	45,377	44,794	43,860	43,626	60,825
10-14	42,033	42,769	45,153	43,935	43,630	43,411
15-19	48,045	48,134	49,296	49,743	49,854	50,288
20-24	49,732	50,356	50,597	54,007	54,860	52,405
25-29	46,336	47,549	49,136	49,430	49,504	53,530
30-34	43,835	44,462	46,486	48,015	48,397	48,397
35-39	43,259	43,597	44,282	44,838	44,977	48,201
40-44	40,265	42,523	43,723	43,830	43,857	45,108
45-49	34,813	37,756	41,765	41,996	42,053	43,075
50-54	29,554	32,926	38,130	41,242	42,020	42,470
55-59	23,440	26,733	32,197	35,795	36,694	41,090
60-64	14,690	17,544	22,227	26,156	27,139	30,509
65-69	10,468	12,477	16,855	18,664	19,116	26,073
70-74	7,246	8,269	10,885	13,529	14,189	16,678

	2017	2020	2025	2029	2030	2035
75+	8,881	10,239	13,041	15,896	16,610	21,156
<b>Total</b>	<b>532,813</b>	<b>556,321</b>	<b>593,591</b>	<b>629,487</b>	<b>638,461</b>	<b>684,354</b>
<b>Grand Total</b>	<b>1,081,009</b>	<b>1,126,927</b>	<b>1,198,859</b>	<b>1,258,703</b>	<b>1,273,664</b>	<b>1,344,529</b>

Source: JUTPI 2

The sex ratio of Kota Bogor in the year 2035 is 96, which indicates that only 96 males exist over 100 females. The highest populous ratio is for age 20-24 (sex ratio is 106) while the lowest is for age 75+ (sex ratio is 73). On the other hand, the highest age bracket proportion is between age 20-24 (8.1%) followed by age 0-4 (8%). This explains that people at a young age (below 15) in 2017 will be notable in structuring the future society as shown in the figure below.



Source: JUTPI 2

**Figure 11 Population Structure of Kota Bogor in 2035**

In general, it can be concluded that female populations are more dominant compared to male populations, especially in the age bracket of 75+, 0-4, and 5-9. Moreover, the elderly at the edge of 65 is dominated which indicates the high life expectancy and high survivor rate in female populations.

**(4) Kabupaten Bogor Population Projection**

The number of populations of Kabupaten Bogor in 2035 is approximately 8.2 million with an average growth of 2.4%. Comparing the proportion, it was understood that male populations are more than female in the 2017-2030 period but then started to shift in 2035

when the number of female populations surpasses the male (sex ratio 97), as seen in Table 23. Furthermore, the highest populous ratio is for age 55-59 and 45-49 (sex ratio is 106) while the lowest populous ratio is for age groups 0-4 and 5-9 (sex ratio 74).

**Table 23 Population Projection by Gender and Age Group (Kabupaten Bogor)**

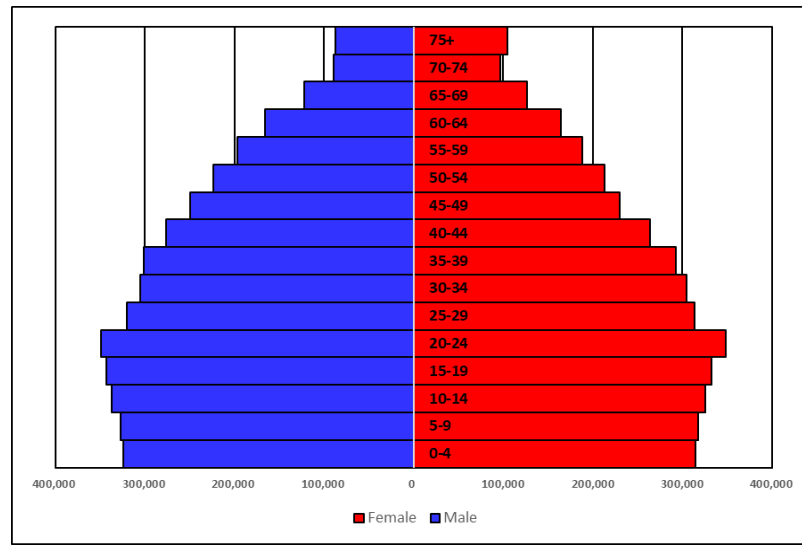
	2017	2020	2025	2029	2030	2035
<b>Male</b>						
0-4	290,774	295,651	304,993	312,703	314,631	324,572
5-9	286,030	298,429	307,859	315,641	317,587	327,622
10-14	278,749	292,632	317,153	325,170	327,174	337,512
15-19	276,652	285,238	307,281	327,879	333,029	343,552
20-24	271,244	283,395	298,873	317,350	321,970	348,949
25-29	247,763	259,333	281,938	294,257	297,337	320,315
30-34	235,646	246,627	266,495	285,079	289,724	305,548
35-39	231,154	238,657	256,225	272,738	276,866	301,000
40-44	210,688	224,409	238,409	252,449	255,959	276,579
45-49	176,065	194,092	218,441	229,343	232,069	249,152
50-54	137,168	156,767	187,262	206,055	210,754	223,902
55-59	101,334	116,978	146,715	169,546	175,254	197,239
60-64	72,769	86,505	110,620	133,116	138,740	165,728
65-69	44,926	56,052	76,341	93,366	97,622	122,438
70-74	29,431	35,534	51,030	65,807	69,501	88,876
75+	29,895	35,639	48,088	61,525	64,885	87,549
<b>Total</b>	<b>2,920,288</b>	<b>3,105,938</b>	<b>3,417,722</b>	<b>3,662,025</b>	<b>3,723,101</b>	<b>4,020,534</b>
<b>Female</b>						
0-4	279,936	284,947	294,474	397,208	422,891	437,031
5-9	272,511	287,734	297,354	304,778	306,634	441,305
10-14	263,644	275,687	304,650	313,739	316,011	324,661
15-19	263,887	271,671	291,228	314,166	319,901	333,824
20-24	268,826	279,750	294,206	302,960	305,149	346,437
25-29	244,305	257,632	278,717	289,899	292,694	304,022
30-34	235,094	245,097	268,200	282,771	286,414	304,701
35-39	224,274	232,299	247,068	272,324	278,638	288,717
40-44	193,947	210,604	226,704	242,790	246,812	271,927
45-49	155,709	173,657	201,249	216,789	220,674	235,849
50-54	122,898	140,724	170,720	189,478	194,167	216,942
55-59	90,793	106,480	134,275	154,673	159,773	185,269
60-64	65,897	80,887	107,434	123,068	126,977	161,204
65-69	43,574	53,330	75,424	90,933	94,810	118,400
70-74	31,869	37,342	51,363	65,205	68,666	91,313
75+	37,557	44,454	59,122	74,729	78,630	104,575
<b>Total</b>	<b>2,794,721</b>	<b>2,982,295</b>	<b>3,302,188</b>	<b>3,635,510</b>	<b>3,718,841</b>	<b>4,166,177</b>
<b>Grand Total</b>	<b>5,715,009</b>	<b>6,088,233</b>	<b>6,719,910</b>	<b>7,297,535</b>	<b>7,441,942</b>	<b>8,186,711</b>

Source: JUTPI 2

The most populated age bracket is young age between 0-4 and 5-9 which comprises 18.7%



of the total population followed by age 20-30 (8.49%) as shown in Figure 12. On the opposite, the least populated age is between 70-74 years old (2.2%). It is inferred that the population structure in Kabupaten Bogor is dominated by the young and productive age bracket while the elderly (65 or above) comprises only less than 8%.



Source: JUTPI 2

**Figure 12 Population Structure of Kabupaten Bogor in 2035**

Young population (age 0-14) in 2035 are 2.19 million or 26.8%. Compared to the figures in 2017, the young population (0-14) in 2017 was 29.2% or higher than that of 2035. The elderly population (65 years or above) in 2035 is 7.49% or barely twice higher than in 2017 with 3.8%. This inferred that survival rate and life expectancy are quite high while the young generation keeps on growing.

##### (5) Kota Depok Population Projection

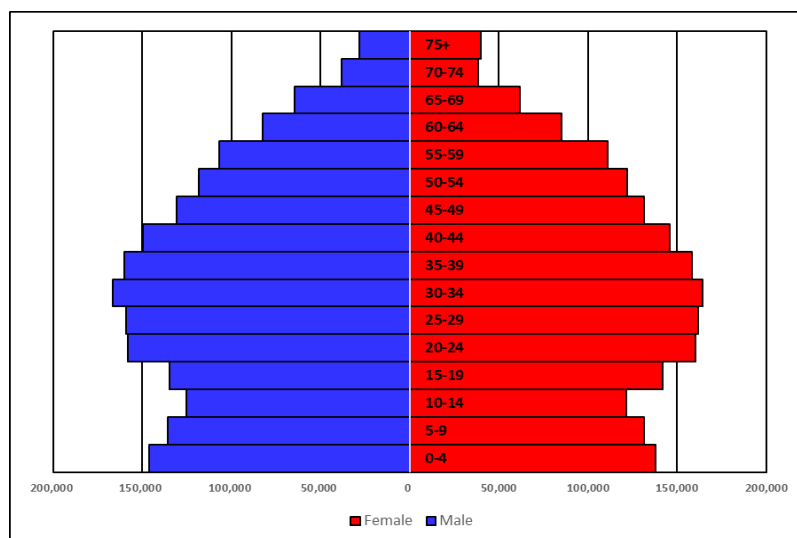
The number of populations of Kota Depok in 2035 is approximately 3.8 million with an average growth of 4% from 2017. Comparing the proportion, it can be understood that male populations are more than female in the 2017-2025 period but then started to shift in 2029 when the number of female populations surpassed the male and in 2035, sex ratio is 95 as inferred in Table 24. Furthermore, the highest populous ratio is for age 20-24 and 65-69 (sex ratio is 107) while the lowest populous ratio is for age 75+ (sex ratio 71).

**Table 24 Population Projection by Gender and Age Group (Kota Depok)**

	2017	2020	2025	2029	2030	2035
<b>Male</b>						
0-4	108,128	113,507	123,464	132,128	134,294	146,075
5-9	97,940	105,500	114,755	122,808	124,821	135,771
10-14	85,520	92,691	105,924	113,357	115,216	125,323
15-19	89,697	95,481	108,453	120,840	123,937	134,809
20-24	101,364	109,340	121,584	134,799	138,102	157,818
25-29	101,512	109,699	125,751	137,016	139,832	158,830
30-34	106,157	114,708	130,691	145,990	149,815	166,591
35-39	101,647	108,353	122,658	136,331	139,749	160,198
40-44	94,012	103,382	115,809	128,041	131,099	149,366
45-49	76,327	86,874	103,091	113,005	115,483	130,730
50-54	59,735	70,482	88,772	102,029	105,344	118,007
55-59	45,438	54,152	71,611	86,478	90,194	107,032
60-64	29,889	36,684	49,461	62,219	65,408	82,382
65-69	19,636	25,291	36,318	46,438	48,968	64,755
70-74	10,504	13,093	19,823	26,737	28,465	38,380
75+	8,033	9,881	14,040	18,768	19,950	28,347
<b>Total</b>	<b>1,135,539</b>	<b>1,249,118</b>	<b>1,452,205</b>	<b>1,626,983</b>	<b>1,670,677</b>	<b>1,904,411</b>
<b>Female</b>						
0-4	102,027	107,144	116,573	124,779	126,831	137,992
5-9	93,534	101,885	110,851	118,655	120,606	131,219
10-14	81,803	88,250	102,666	109,893	111,700	121,530
15-19	93,563	99,384	112,168	126,826	130,491	141,974
20-24	102,720	110,287	122,134	134,702	137,844	160,361
25-29	104,525	113,702	129,512	140,641	143,424	161,872
30-34	105,024	112,959	130,102	144,574	148,192	164,110
35-39	100,806	107,716	120,610	135,253	138,914	158,229
40-44	89,260	99,970	113,279	124,126	126,838	146,088
45-49	73,919	85,003	103,661	114,701	117,461	131,522
50-54	58,636	69,263	88,402	103,925	107,806	122,158
55-59	44,497	53,806	71,419	87,206	91,153	111,161
60-64	28,425	35,971	50,215	63,365	66,653	85,070
65-69	17,795	22,454	33,407	43,991	46,637	61,903
70-74	10,654	12,866	18,605	25,865	27,680	38,642
75+	11,786	14,408	20,215	26,734	28,363	39,795
<b>Total</b>	<b>1,118,974</b>	<b>1,235,068</b>	<b>1,443,818</b>	<b>1,625,238</b>	<b>1,670,593</b>	<b>1,913,626</b>
<b>Grand Total</b>	<b>2,254,513</b>	<b>2,484,186</b>	<b>2,896,023</b>	<b>3,252,221</b>	<b>3,341,270</b>	<b>3,818,037</b>

Source: JUTPI 2

The most populated age bracket is at the young age between 0-4 with 8.6% of the total population followed by age 30-34 (8.4%). On the contrary, the least populated age is for over 75 years old (1.8%). It is inferred in below figure that the population structure in Kota Depok is dominated by young and mature age.



Source: JUTPI 2

**Figure 13 Population Structure of Kota Depok in 2035**

Compared to the figures in 2017, the young population (0-14) in 2017 was 25.2% or higher than that of 2035 with 23.02%. The elderly population (65 years or above) in 2035 is 9.72% or much higher than in 2017 with 3.5%. This inferred that survival rate and life expectancy are improved along with emerging new generation.

#### (6) Kota Bekasi Population Projection

The population of Kota Bekasi in 2035 is projected at 4.3 million with an average growth of 2.8%. The highest growth occurred in the period of 2017-2020 before it started to slow down in the next years. Overall sex ratio shows that the total number of female populations is higher than male populations (sex ratio is 95). From 2017-2025, the male population is leading by a small margin, but then the female population takes it over in the year 2029 as seen in the table below.

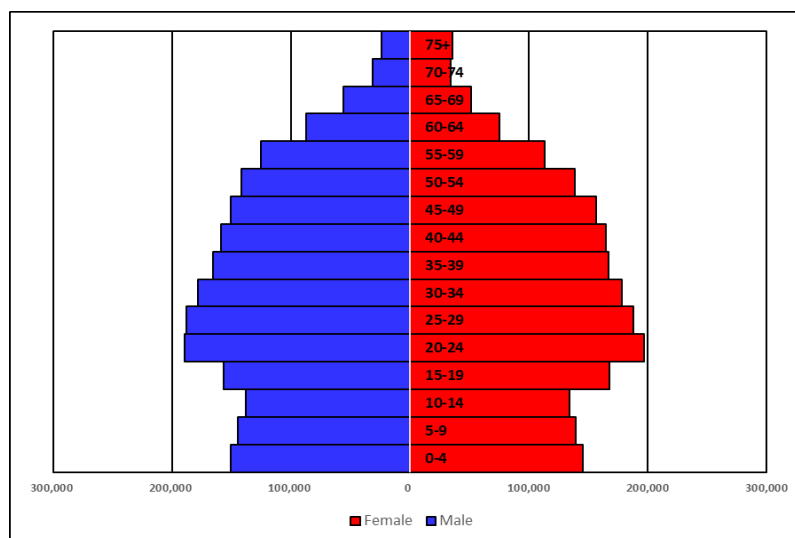
**Table 25 Population Projection by Gender and Age Group (Kota Bekasi)**

	2017	2020	2025	2029	2030	2035
<b>Male</b>						
0-4	128,474	131,712	137,693	142,695	143,945	150,481
5-9	120,196	126,448	132,190	136,992	138,192	144,467
10-14	108,235	114,569	125,832	130,403	131,546	137,519
15-19	119,982	124,731	136,167	146,876	149,553	156,344
20-24	140,188	147,684	157,831	169,408	172,302	189,240
25-29	138,438	146,104	160,963	169,810	172,022	187,794

	2017	2020	2025	2029	2030	2035
30-34	130,684	137,907	151,009	163,295	166,366	177,797
35-39	120,985	125,951	137,030	147,445	150,048	165,308
40-44	115,031	123,540	133,005	142,365	144,705	158,452
45-49	101,395	112,707	128,543	136,422	138,392	150,565
50-54	82,753	95,360	115,433	128,409	131,652	141,739
55-59	61,301	71,352	90,687	105,958	109,776	125,201
60-64	36,522	43,775	56,725	69,022	72,096	87,272
65-69	19,395	24,397	33,671	41,640	43,632	55,455
70-74	9,883	12,031	17,506	22,829	24,160	31,308
75+	7,675	9,227	12,604	16,293	17,216	23,516
<b>Total</b>	<b>1,441,137</b>	<b>1,547,495</b>	<b>1,726,887</b>	<b>1,869,860</b>	<b>1,905,603</b>	<b>2,082,457</b>
<b>Female</b>						
0-4	123,421	126,725	132,772	181,108	193,192	202,411
5-9	113,852	121,261	127,048	132,013	133,254	193,684
10-14	103,603	109,281	122,436	125,630	126,429	134,546
15-19	126,905	131,797	143,246	145,063	145,517	165,723
20-24	144,439	151,626	161,693	177,346	181,259	178,526
25-29	139,072	147,924	162,256	173,437	176,232	193,966
30-34	130,817	137,574	152,604	164,683	167,703	181,807
35-39	122,105	127,563	137,554	148,818	151,634	167,678
40-44	115,847	126,783	138,324	143,871	145,257	164,425
45-49	101,120	113,676	133,382	141,817	143,926	152,818
50-54	76,409	88,254	108,444	130,975	136,608	137,302
55-59	52,195	61,781	78,982	98,300	103,129	122,255
60-64	28,810	35,766	48,218	59,876	62,790	80,490
65-69	16,967	20,928	30,098	35,691	37,089	52,840
70-74	10,727	12,678	17,641	20,806	21,597	31,264
75+	12,204	14,578	19,692	25,219	26,601	35,932
<b>Total</b>	<b>1,418,493</b>	<b>1,528,195</b>	<b>1,714,390</b>	<b>1,904,651</b>	<b>1,952,216</b>	<b>2,195,666</b>
<b>Grand Total</b>	<b>2,859,630</b>	<b>3,075,690</b>	<b>3,441,277</b>	<b>3,774,510</b>	<b>3,857,818</b>	<b>4,278,123</b>

Source: JUTPI 2

In terms of gender proportion, the highest populous ratio is for age 60-64 (sex ratio is 108) while the lowest populous ratio is for age 75+ (sex ratio 65). On the other hand, the most populated age bracket is in the age of 25-29 (8.9%), followed by age 20-24 and 25-29 with 8.6% and 8.4%, respectively. Moreover, the age bracket with the least population is age 75+ (1.4%). It is inferred that the population structure in Kota Bekasi is dominated by mature age as illustrated by the following figure.



Source: JUTPI 2

**Figure 14 Population Structure of Kota Bekasi in 2035**

Compared to the figures in 2017, the young population (0-14) in 2017 was 24.4% or slightly higher than that of 2035 with 22.5%. The elderly population (65 years or above) in 2035 is 5.4% or doubled than in 2017 with 2.7%. This inferred that the old population in Kota Bekasi has increased because of the enhancement of life expectancy.

**(7) Kabupaten Bekasi Population Projection**

The population of Kabupaten Bekasi in 2035 is projected at 6.3 million with an average growth of 4.9%. The trend of growth was fluctuated during the years and will reach its peak in the period of 2025-2029. Overall sex ratio shows that the total number of female populations is higher than male populations (sex ratio is 96). The male population is leading the proportion margin, but the female population takes it over in the year 2029. Detail figures can be seen in the table below.

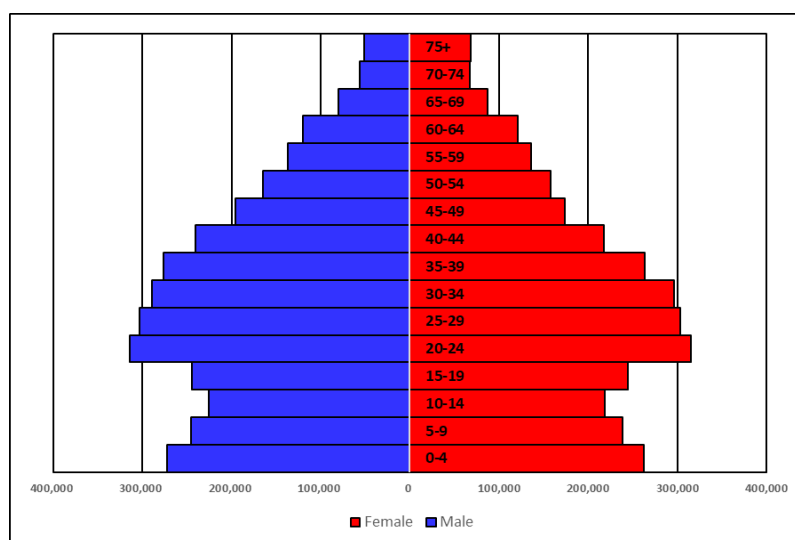
**Table 26 Population Projection by Gender and Age Group (Kabupaten Bekasi)**

	2017	2020	2025	2029	2030	2035
<b>Male</b>						
0-4	183,871	196,014	218,728	239,004	244,073	272,356
5-9	161,203	176,339	196,773	215,014	219,574	245,018
10-14	140,414	154,549	181,183	197,979	202,178	225,606
15-19	148,135	160,133	186,597	212,323	218,754	244,103
20-24	184,197	201,775	230,180	260,612	268,221	314,444

	2017	2020	2025	2029	2030	2035
25-29	176,507	193,704	227,794	253,448	259,862	302,807
30-34	168,334	184,713	215,899	246,296	253,895	289,637
35-39	159,685	172,859	200,745	227,859	234,638	275,931
40-44	137,936	154,040	177,023	199,869	205,580	240,289
45-49	103,882	120,071	146,173	163,620	167,982	195,081
50-54	76,043	91,118	117,736	138,212	143,331	164,716
55-59	52,830	63,940	86,745	107,018	112,086	136,453
60-64	39,776	49,575	68,568	88,133	93,024	120,199
65-69	22,250	29,104	42,871	56,011	59,296	80,445
70-74	13,972	17,688	27,475	37,872	40,471	55,976
75+	13,170	16,461	24,011	32,821	35,024	51,088
<b>Total</b>	<b>1,782,205</b>	<b>1,982,083</b>	<b>2,348,501</b>	<b>2,676,092</b>	<b>2,757,989</b>	<b>3,214,151</b>
<b>Female</b>						
0-4	176,081	187,872	209,913	229,615	234,541	262,057
5-9	154,218	170,681	190,706	208,605	213,079	238,078
10-14	133,636	146,479	175,002	191,428	195,534	218,474
15-19	146,107	157,676	182,759	211,230	218,348	243,964
20-24	183,379	200,031	227,462	256,410	263,647	314,986
25-29	177,956	196,694	230,070	255,310	261,620	303,239
30-34	172,238	188,238	222,675	252,902	260,459	296,177
35-39	152,541	165,617	190,474	218,351	225,320	263,553
40-44	120,908	137,691	160,264	179,507	184,317	218,037
45-49	88,514	103,495	129,770	146,790	151,045	173,714
50-54	68,554	82,283	107,956	129,882	135,364	157,555
55-59	49,248	60,528	82,524	103,123	108,272	135,761
60-64	36,728	47,247	67,804	87,516	92,444	121,288
65-69	22,702	29,142	44,553	60,061	63,938	87,174
70-74	16,664	20,492	30,513	43,423	46,650	66,947
75+	18,344	22,768	32,776	44,301	47,183	67,922
<b>Total</b>	<b>1,717,818</b>	<b>1,916,934</b>	<b>2,285,222</b>	<b>2,618,452</b>	<b>2,701,760</b>	<b>3,168,925</b>
<b>Grand Total</b>	<b>3,500,023</b>	<b>3,899,017</b>	<b>4,633,723</b>	<b>5,294,544</b>	<b>5,459,750</b>	<b>6,383,076</b>

Source: JUTPI 2

In terms of gender proportion, the highest populous ratio is for age 55-59 (sex ratio is 107) while the lowest populous ratio is for age 5-9 (sex ratio 74) as seen in Figure 15. On the other hand, the most populated age bracket is the group age of 0-4 (9.7%), followed by age 20-24 and 25-29 with 9.4% and 9.2%, respectively. Furthermore, the age bracket with the least population is age 70-74 (1.8%). It is inferred that the population structure in Kabupaten Bekasi is dominated by young and mature age.



Source: JUTPI 2

**Figure 15 Population Structure of Kabupaten Bekasi in 2035**

Compared to the figures in 2017, the young population (0-14) in 2017 was 27% or slightly higher than that of 2035 with 25%. The elderly population (65 years or above) in 2035 is 6.1% or nearly twice higher than in 2017 with 3.1%. It can be concluded that the old population has increased while the young generation’s growth is started to slow down.

**(8) Kota Tangerang Population Projection**

The population of Kota Tangerang in 2035 is approximately 2.9 million with an average growth of 1.9% as seen in Table 27. The trend of growth tends to slow down from 2017 onwards. Overall sex ratio shows that the total number of male populations is higher than female (sex ratio is 103) and leads the proportion until 2035.

**Table 27 Population Projection by Gender and Age Group (Kota Tangerang)**

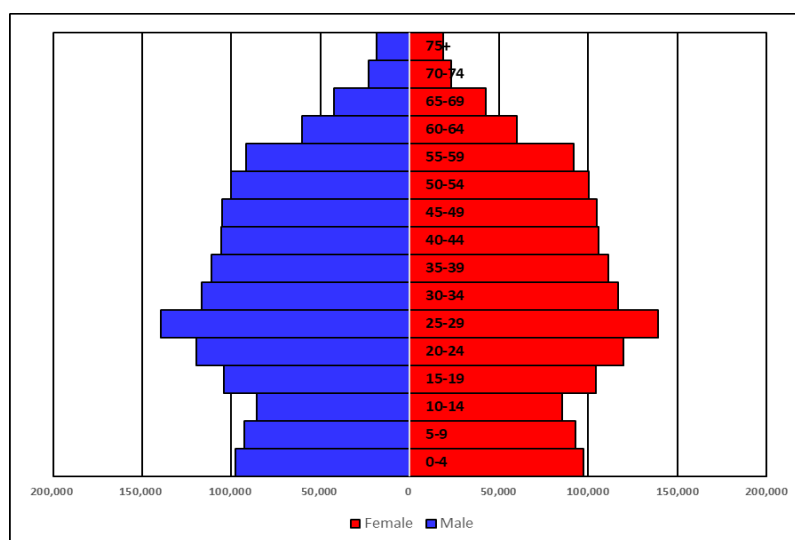
	2017	2020	2025	2029	2030	2035
<b>Male</b>						
0-4	104,459	103,601	102,775	102,119	101,955	101,142
5-9	93,841	97,679	96,900	96,282	96,127	95,360
10-14	74,238	80,972	89,020	88,452	88,310	87,606
15-19	80,938	81,813	92,346	99,689	101,525	100,715
20-24	102,410	104,175	105,567	116,441	119,159	131,003
25-29	114,888	116,501	120,301	121,588	121,909	137,605
30-34	112,481	116,489	120,329	123,469	124,255	125,915
35-39	97,661	102,892	109,658	112,549	113,272	116,968

	2017	2020	2025	2029	2030	2035
40-44	85,578	91,976	100,770	106,071	107,396	110,936
45-49	72,192	80,040	91,088	98,055	99,797	106,359
50-54	57,785	66,964	80,809	89,732	91,963	100,756
55-59	44,577	52,804	68,029	79,281	82,094	93,426
60-64	24,910	30,627	40,951	50,397	52,758	63,666
65-69	13,355	17,125	24,642	31,287	32,949	42,449
70-74	6,836	8,604	12,891	17,418	18,550	24,802
75+	5,638	6,529	8,326	10,159	10,617	13,539
<b>Total</b>	<b>1,091,787</b>	<b>1,158,791</b>	<b>1,264,403</b>	<b>1,342,990</b>	<b>1,362,637</b>	<b>1,452,248</b>
<b>Female</b>						
0-4	100,748	99,945	99,148	98,530	98,376	97,610
5-9	90,151	95,248	94,507	93,904	93,753	93,023
10-14	71,778	78,019	87,943	87,395	87,258	86,562
15-19	82,731	83,891	94,447	104,058	106,460	105,632
20-24	97,883	98,617	100,192	110,278	112,800	127,147
25-29	110,500	111,287	112,799	114,241	114,601	129,021
30-34	107,285	109,706	112,148	113,367	113,672	115,487
35-39	95,392	100,364	104,610	106,473	106,938	108,392
40-44	82,608	91,103	100,627	104,033	104,884	107,219
45-49	69,112	78,581	93,394	101,205	103,158	107,522
50-54	53,743	63,013	79,001	90,915	93,894	103,709
55-59	38,640	46,731	61,345	73,796	76,909	91,408
60-64	19,647	25,075	35,074	43,848	46,042	57,724
65-69	11,970	14,892	22,364	29,499	31,282	41,065
70-74	7,383	8,747	12,216	17,120	18,346	25,661
75+	8,533	9,687	12,086	14,481	15,080	18,815
<b>Total</b>	<b>1,048,104</b>	<b>1,114,906</b>	<b>1,221,901</b>	<b>1,303,142</b>	<b>1,323,453</b>	<b>1,415,997</b>
<b>Grand Total</b>	<b>2,139,891</b>	<b>2,273,697</b>	<b>2,486,304</b>	<b>2,646,132</b>	<b>2,686,090</b>	<b>2,868,245</b>

Source: JUTPI 2

In terms of gender proportion, the highest populous ratio is for age 20-24 (sex ratio is 109) while the lowest is for age 75+ (sex ratio 72). From the perspective of population number, the most populated age bracket is in the age of 25-29 (9.7%), followed by age 20-24 and 30-34 with 8.8% and 8.5%, respectively. Furthermore, the age bracket with the least population is age 75+ (1.1%). It is inferred that the population structure in Kota Tangerang is dominated by young-adult age (see Figure 16).





Source: JUTPI 2

**Figure 16 Population Structure of Kota Tangerang in 2035**

Compared to the figures in 2017, young populations (0-14) in 2017 was 25% or quite higher than the proportion in 2035 with 19.5%. The elderly population (65 years or above) in 2035 is 5.8% or much higher than in 2017 with 2.5%. It can be concluded that the old population has increased higher than the growth of the young generation throughout the years.

**(9) Kabupaten Tangerang Population Projection**

The population of Kabupaten Tangerang in 2035 is approximately 5.6 million with an average growth of 1.9% as shown in Table 28. The trend of growth tends to slow down from 2017 onwards. Overall sex ratio shows that the total number of male populations is higher than female (sex ratio is 103) and leads the proportion until 2035.

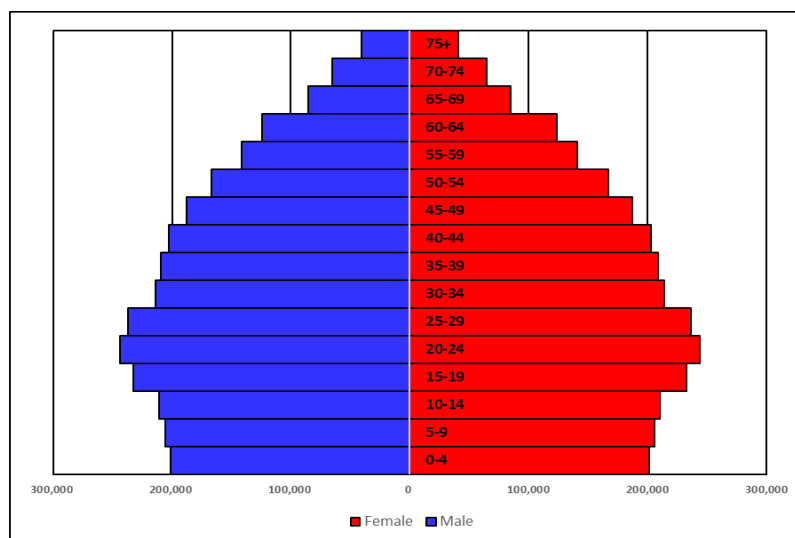
**Table 28 Population Projection by Gender and Age Group (Kabupaten Tangerang)**

	2017	2020	2025	2029	2030	2035
<b>Male</b>						
0-4	183,461	186,993	194,263	200,305	201,816	209,662
5-9	177,124	189,470	196,836	202,959	204,489	212,439
10-14	154,968	173,700	199,984	206,204	207,759	215,836
15-19	161,991	168,272	198,905	222,983	229,002	237,906
20-24	170,600	178,348	189,265	216,828	223,719	257,572
25-29	170,757	177,951	192,439	201,862	204,218	241,395
30-34	169,053	179,925	194,636	207,313	210,482	223,366
35-39	160,834	174,141	194,356	207,069	210,247	227,364
40-44	141,779	156,600	179,675	196,361	200,532	216,928

	2017	2020	2025	2029	2030	2035
45-49	111,203	126,708	151,008	168,809	173,259	193,371
50-54	83,167	99,043	125,164	144,367	149,168	171,147
55-59	58,535	71,257	96,138	116,422	121,493	144,793
60-64	40,224	50,825	71,163	91,042	96,012	121,333
65-69	24,200	31,893	48,058	63,443	67,290	90,785
70-74	13,891	17,962	28,186	39,616	42,473	59,469
75+	11,683	13,889	18,570	23,577	24,828	33,196
<b>Total</b>	<b>1,833,470</b>	<b>1,996,977</b>	<b>2,278,647</b>	<b>2,509,159</b>	<b>2,566,787</b>	<b>2,856,564</b>
<b>Female</b>						
0-4	176,294	179,705	186,692	192,484	193,932	201,453
5-9	168,973	183,462	190,577	196,504	197,986	205,664
10-14	149,093	166,528	196,539	202,636	204,161	212,098
15-19	156,944	163,548	192,773	220,565	227,513	236,336
20-24	160,833	166,489	177,106	202,424	208,753	246,374
25-29	165,613	171,393	181,848	191,125	193,444	228,011
30-34	170,598	179,320	191,927	201,293	203,634	216,620
35-39	159,736	172,698	188,579	199,185	201,836	214,148
40-44	128,731	146,001	168,831	181,251	184,356	197,317
45-49	96,495	112,882	140,655	158,251	162,650	177,606
50-54	73,056	88,055	115,811	138,606	144,305	166,870
55-59	52,361	65,053	89,458	112,016	117,656	146,604
60-64	37,477	48,991	71,696	93,213	98,592	129,670
65-69	23,284	29,795	46,682	63,989	68,316	93,945
70-74	15,980	19,500	28,583	41,542	44,782	65,536
75+	15,832	18,483	24,087	29,929	31,389	40,906
<b>Total</b>	<b>1,751,300</b>	<b>1,911,903</b>	<b>2,191,841</b>	<b>2,425,014</b>	<b>2,483,307</b>	<b>2,779,159</b>
<b>Grand Total</b>	<b>3,584,770</b>	<b>3,908,880</b>	<b>4,470,488</b>	<b>4,934,173</b>	<b>5,050,094</b>	<b>5,635,723</b>

Source: JUTPI 2

The highest populous ratio is for age 35-39 (sex ratio is 109) while the lowest is for age 75+ (sex ratio 81) as illustrated in Figure 17. From the perspective of population number, the most populated age bracket is in the age of 20-24 (8.9%), followed by age 25-29 and 15-19 with 8.5% and 8.4%, respectively. Furthermore, the age bracket with the least population is age 75+ (1.3%). It is inferred that the population structure in Kabupaten Tangerang is dominated by young-adult age.



Source: JUTPI 2

**Figure 17 Population Structure of Kabupaten Tangerang in 2035**

The young population proportion (0-14) in 2017 was 28% or much higher than the proportion in 2035 with 22.3%. The elderly population (65 years or above) in 2035 is 6.7% or much higher than in 2017 with 2.9%. It can be concluded that the old population in Kabupaten Tangerang has increased throughout the years while the growth of the young generation tends to slow down.

#### (10) Kota Tangerang Selatan Population Projection

The population of Kota Tangerang Selatan in 2035 is approximately 2.6 million with an average growth of 3.2% as depicted in Table 29. The trend of growth tends to slow down from 2017 onwards. Overall sex ratio is 100 shows that the total number of male populations and females is proportional, but the number of male populations is slightly higher than female populations.

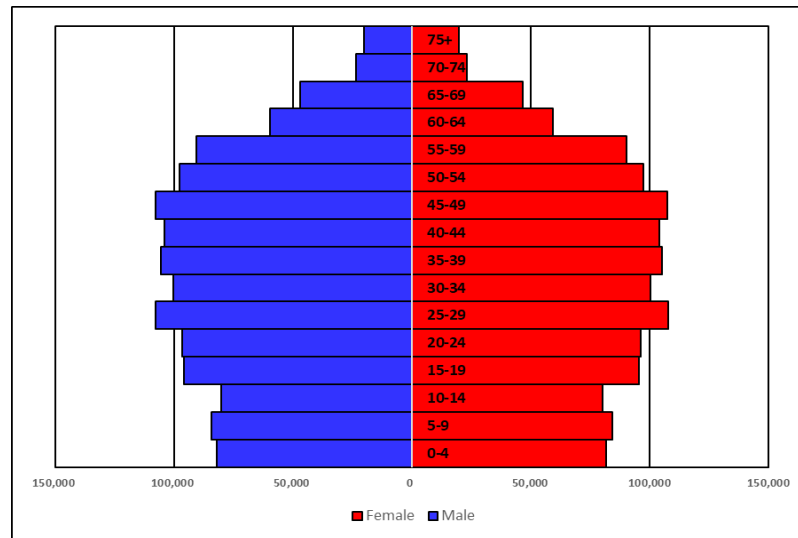
**Table 29 Population Projection by Gender and Age Group (Kota Tangerang Selatan)**

	2017	2020	2025	2029	2030	2035
<b>Male</b>						
0-4	75,083	76,340	78,944	81,098	81,637	84,421
5-9	73,202	78,113	80,777	82,982	83,533	86,382
10-14	60,050	67,142	76,946	79,046	79,571	82,285
15-19	62,001	64,246	75,590	84,420	86,628	89,582
20-24	68,263	71,187	75,195	85,816	88,471	101,390

	2017	2020	2025	2029	2030	2035
25-29	75,258	78,234	84,214	88,007	88,955	104,661
30-34	78,134	82,954	89,324	94,786	96,152	101,564
35-39	75,319	81,350	90,378	95,929	97,317	104,756
40-44	70,103	77,240	88,215	96,047	98,004	105,530
45-49	60,548	68,818	81,638	90,918	93,238	103,584
50-54	47,987	57,008	71,711	82,398	85,070	97,157
55-59	36,895	44,803	60,171	72,586	75,690	89,789
60-64	21,392	26,965	37,583	47,896	50,475	63,493
65-69	12,305	16,180	24,271	31,917	33,828	45,432
70-74	6,303	8,131	12,701	17,782	19,053	26,555
75+	5,549	6,585	8,765	11,087	11,668	15,531
<b>Total</b>	<b>828,392</b>	<b>905,296</b>	<b>1,036,423</b>	<b>1,142,715</b>	<b>1,169,288</b>	<b>1,302,114</b>
<b>Female</b>						
0-4	72,660	73,916	76,437	78,566	79,099	81,853
5-9	70,282	76,145	78,796	80,946	81,484	84,321
10-14	57,598	64,203	75,475	77,577	78,103	80,767
15-19	64,780	67,359	79,097	90,207	92,984	96,222
20-24	69,866	72,203	76,505	87,171	89,838	105,610
25-29	76,917	79,454	84,041	88,047	89,049	104,567
30-34	78,740	82,594	88,084	92,152	93,169	98,721
35-39	77,240	83,338	90,647	95,468	96,673	102,254
40-44	69,379	78,436	90,336	96,674	98,259	104,790
45-49	59,475	69,322	85,882	96,305	98,911	107,586
50-54	45,116	54,244	70,894	84,442	87,830	101,154
55-59	32,305	40,061	54,839	68,306	71,673	88,794
60-64	16,703	21,861	31,886	41,296	43,648	57,046
65-69	11,119	14,181	22,220	30,371	32,409	44,365
70-74	6,493	7,879	11,477	16,682	17,984	26,230
75+	7,834	9,113	11,835	14,663	15,370	19,961
<b>Total</b>	<b>816,507</b>	<b>894,309</b>	<b>1,028,453</b>	<b>1,138,875</b>	<b>1,166,481</b>	<b>1,304,241</b>
<b>Grand Total</b>	<b>1,644,899</b>	<b>1,799,605</b>	<b>2,064,875</b>	<b>2,281,590</b>	<b>2,335,769</b>	<b>2,606,355</b>

Source: JUTPI 2

The highest populous ratio is for age 70-74 (sex ratio is 114) while the lowest is for age 75+ (sex ratio 78). From the perspective of population number, the most populated age bracket is in the age group of 25-29 (8.2%), followed by age 45-49 and 35-39 with the same ratio of 8.11%, while the least population is in age 75+ (1.4%). It is inferred that the population structure in Kota Tangerang Selatan is spread almost in all ages but the age of 60 above (which share is below 5% in each age bracket). The population structure of Kota Tangerang Selatan can be seen in the following figure.



Source: JUTPI 2

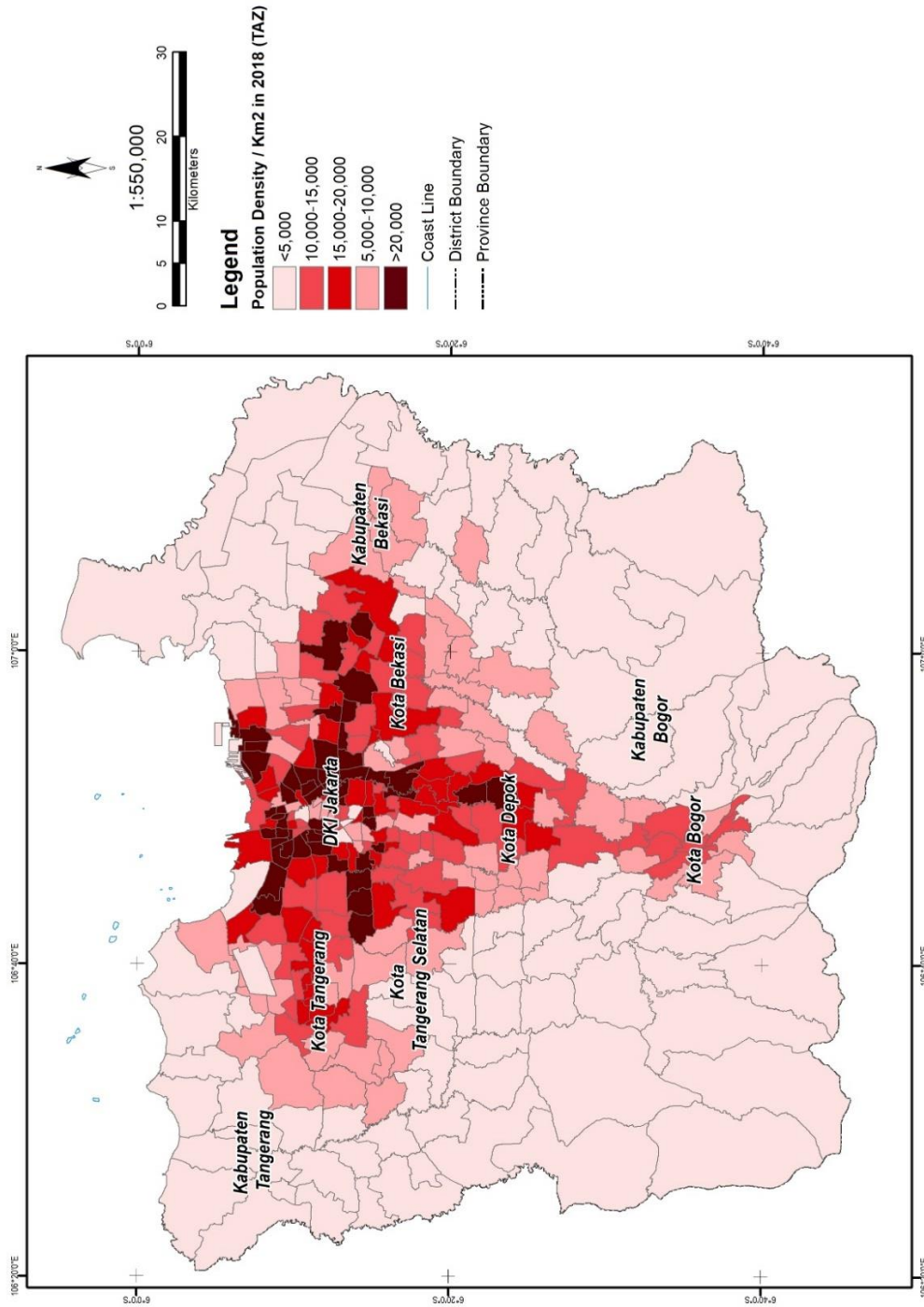
**Figure 18 Population Structure of Kota Tangerang Selatan in 2035**

There is a 6% gap when young population proportion (age 0-14) between the year 2017 and 2035 are compared. Meanwhile, the elderly ratio is rising from 3% in 2017 to 6.8% in 2035, which shows an increase of 3.8%. Therefore, it can be concluded that the population in Kota Tangerang Selatan has been aging progressively while the growth of the young generation tends to slow down.

## 1.4 Distributing Population to TAZ

### 1.4.1 Distributing Population to TAZ

Appropriate population distribution to particular areas in future years is essential for the traffic demand forecast and transportation planning. Socioeconomic framework data is fundamental for transport modeling exercises to obtain reliable forecast results. The projected socio-economic framework data in JUTPI 2 is prepared at *Kota/Kabupaten* level, thus, it is spatially distributed to the traffic analysis zones (TAZ). For the distribution of framework data, it uses multiple linear regression analysis and GIS-based “development potential model” were utilized with various statistical and spatial data. By using these methods, future population and other necessary socioeconomic indicators are properly distributed. Population density distribution in 2018 is shown in Figure 19.



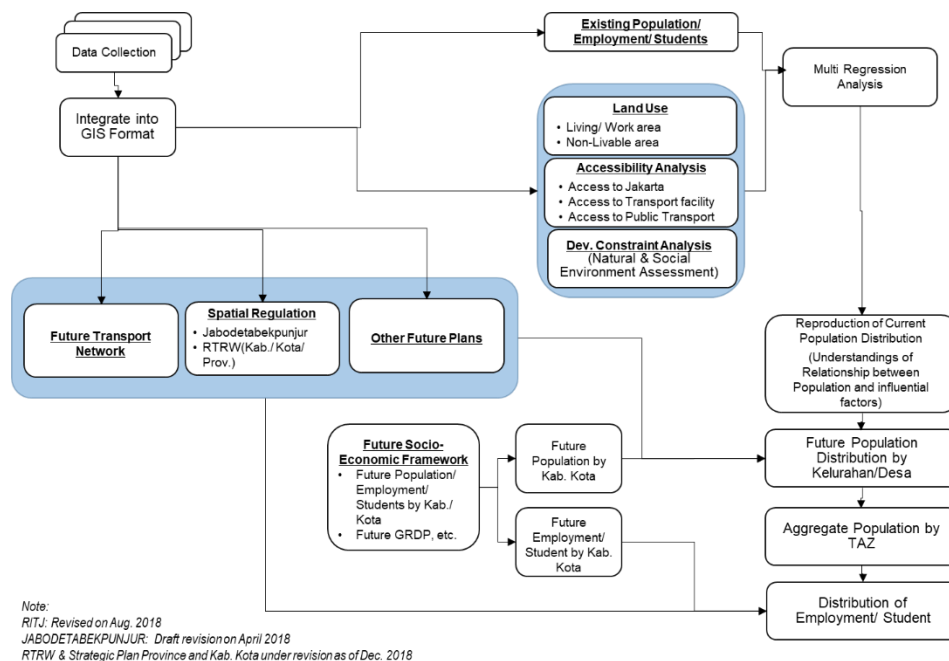
Source: JUTPI 2

Figure 19 Population Density Distribution by TAZ 2018

**(1) Overall Distribution Methodology**

The overall methodology of population and employment distribution for Master Plan case (the target year 2035) is explained as follows:

- 1) Data collection and integration to GIS dataset
- 2) The development of the population/employment distribution model is prepared to reproduce base year population distribution, using multi-regression analysis with population, current land use, accessibility to transport facilities, and natural conditions.
- 3) Based on base year model, future socioeconomic indicators are distributed in *Kelurahan/Desa* level with given future transport network and other future development plans like a spatial plan.
- 4) Aggregate *Kelurahan/Desa* level population into the TAZ level.
- 5) Based on the TAZ population, estimate the number of employees and students based on the total population in 2035 and target year land use.



Source: JUTPI 2

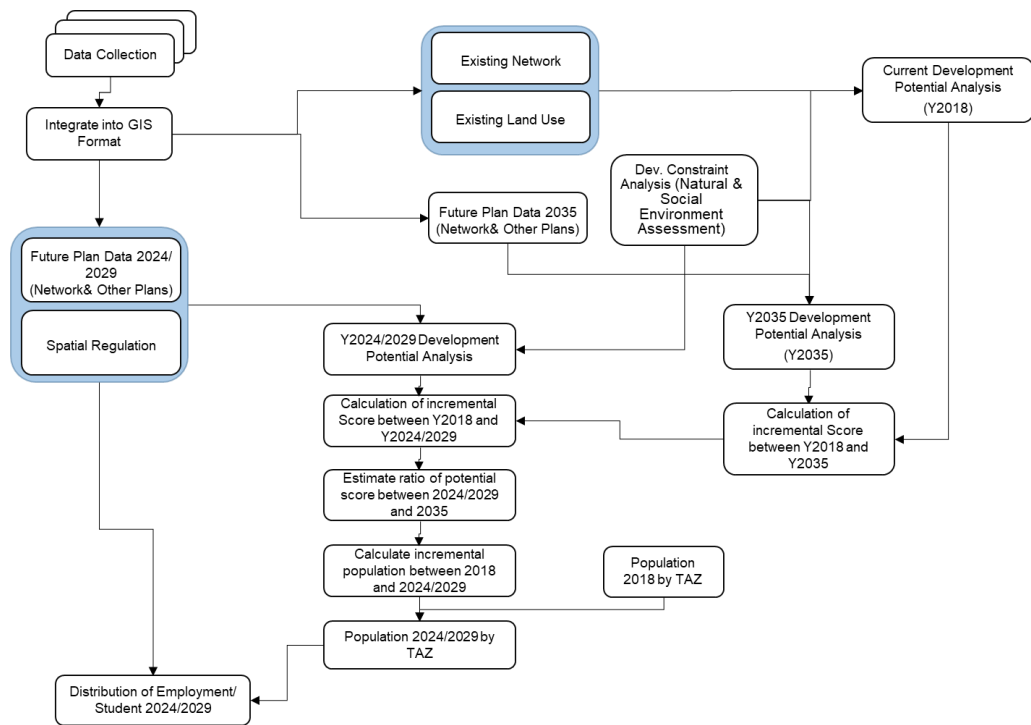
**Figure 20 Overall Methodology of Population Distribution 2035**

On the other hand, the intermediate year 2024 and 2029 are estimated using a different method, which is the development potential model because no data of each intermediate

year land use plan is available. Summary of estimation of intermediate year population is as follows:

- 1) Calculate development potential score of the base year 2018 and target year 2035 by TAZ.
- 2) Based on the given transport network data of each intermediate year and other development potential data like TOD development plans, estimate the development potential score of intermediate year by TAZ. (This part uses the “Development Potential Model” explains in Section 1.4.2.
- 3) Set target year potential score as 100 and base year potential as zero, then calculate a ratio of intermediate year potential score (achievement ratio of development potential).
- 4) Based on base year population and target year population, achievement ratio of development potential estimates increments population of intermediate year population by TAZ (calculation of incremental population between base years to intermediate year).
- 5) Add increment population into base year population by TAZ.
- 6) Based on the TAZ population, estimate the number of employees and students based on the total population of intermediate year and target year land use.

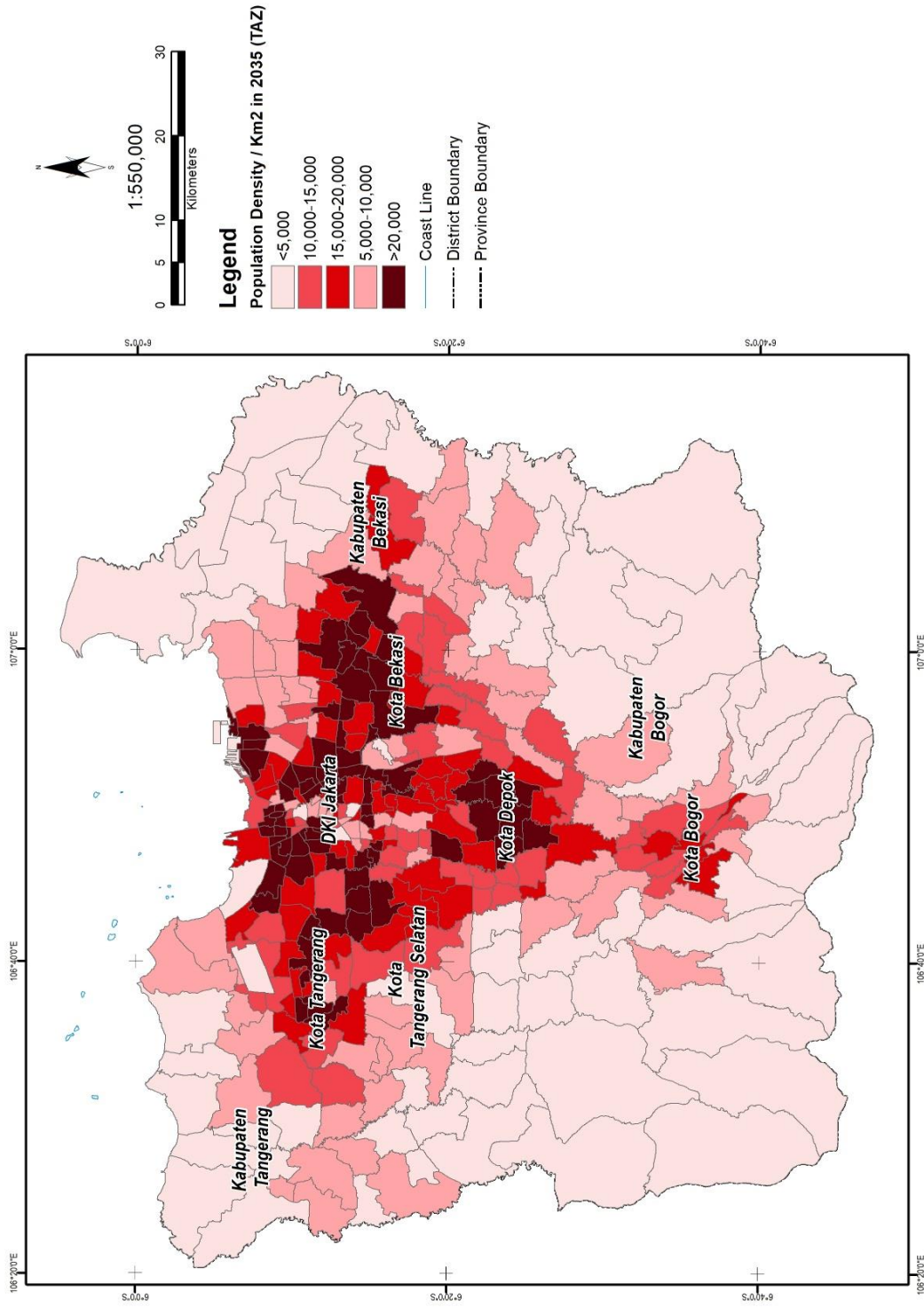




Source: JUTPI 2

**Figure 21 Overall Methodology of Population Distribution 2024 and 2029**

By following the methodology as explained above, it is forecasted that population distribution in 2035 more likely as shown in Figure 22.



Source: JUTPI 2

Figure 22 Population Density Distribution Projection by TAZ 2035

## (2) Data Collection and Preparation

Various data are collected from various entities and these data are examined and integrated as a GIS format for further analyses such as estimation of population distribution. Especially spatial plan data prepared by each Kabupaten and Kota, JABODETABEK Urban Transportation Master Plan (RITJ) prepared by BPTJ and JABODETABEKPUNJUR plan prepared by Ministry of ATR/BPN (Agraria Tata Ruang/Badan Pertanahan Nasional: Agrarian and Spatial Planning/National Land Agency)) are well-considered for population distribution as fundamental information.

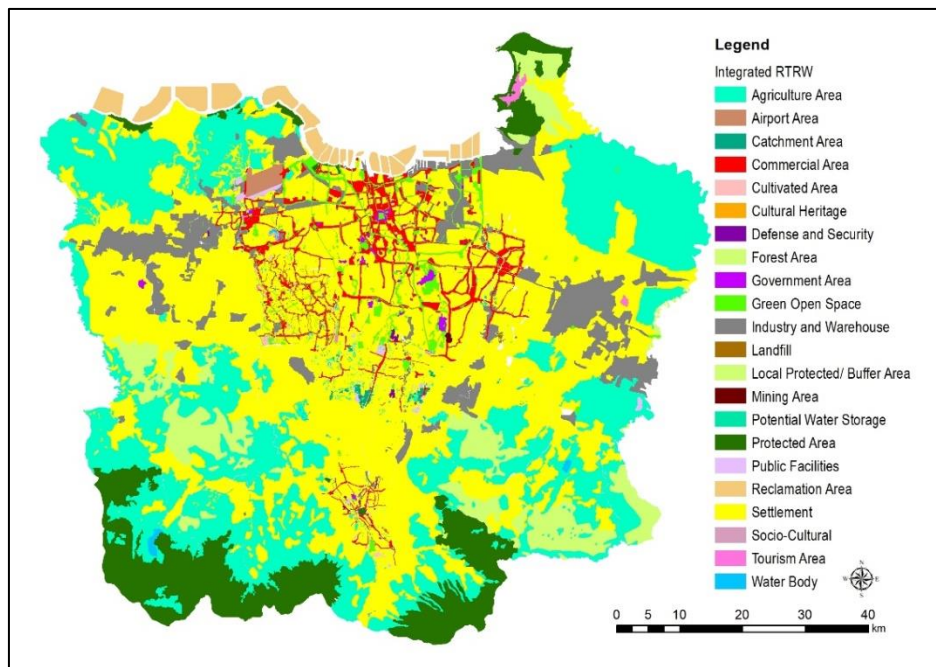
Each Kota/Kabupaten had formulated its spatial plan using its category or land use type. In this project, in order to integrate and utilize these data as a unified form, their categories were interpreted. This integrated RTRW data also considered the target year land use plan in the Study.

The following table shows a list of main collected data that was integrated into the GIS database for socioeconomic framework distribution.

**Table 30 Collected Data for Population and Employment Distribution**

Base year data	Future year
<GIS data>	<GIS data>
<ul style="list-style-type: none"> <li>• Base year road network</li> <li>• Base year public transport network</li> <li>• Base year public transport facilities</li> <li>• Base year land use</li> <li>• Socioeconomic indicators</li> <li>• Administrative boundary</li> <li>• Protected/conservation area</li> <li>• JUTPI 1 GIS database</li> <li>• Satellite imagery for DKI Jakarta</li> </ul>	<ul style="list-style-type: none"> <li>• Spatial plan by Kota/Kabupaten (for target year)</li> <li>• Strategic plan by Kota/Kabupaten (for target year)</li> <li>• Spatial plan for JABODETABEKPUNJUR</li> <li>• JABODETABEK Urban Transportation Master Plan (RITJ)</li> <li>• Future transport network by JUTPI 2</li> <li>• Other development plans (industrial area, TOD, etc.)</li> </ul>
<ul style="list-style-type: none"> <li>• Socioeconomic framework</li> </ul>	<ul style="list-style-type: none"> <li>• Protected/conservation area</li> <li>• Socioeconomic framework</li> </ul>

Source: JUTPI 2



Source: RTRW by each Kota/Kabupaten and JUTPI 2

**Figure 23 Integrated Spatial Plan Prepared by Kota/Kabupaten**

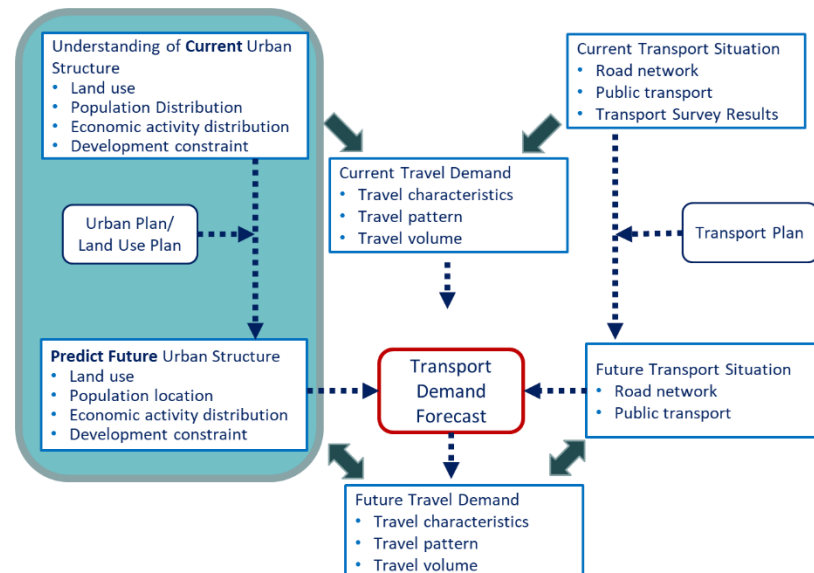
### (3) Utilization of GIS

A variety of data/information has been collected from government agencies and relevant agencies in addition to various surveys conducted by JUTPI 2. These collected data were compiled/integrated into the numerical format or in the format of geographical data, so-called GIS format, for further analysis. In JUTPI 2, these collected GIS data are used not only for mapping or visualizing purposes but also as a planning tool. For population and other socioeconomic framework distribution, GIS is also utilized in various ways, and advantage of utilization of GIS in transportation planning work are followings:

- Integrate various data/information into GIS format and visualize data
- Multiple data analysis in a spatial manner
- Manage various types of data easily in GIS format
- Good communication with transport planning software.

#### (4) Relations of Socioeconomic Framework and Transport Demand Forecast

The purpose of socioeconomic framework distribution is a part of the preparation work of input parameters for the travel demand forecast model. To distribute various socioeconomic indicators in the base year, at first, the total population by *Kelurahan/Desa* is estimated by the population of *Kota/Kabupaten* multiplied by the percentage of the population each *Kelurahan/Desa* from the trend of the previous years. As a next step, other variables such as employment by sector and number of students are estimated based on the total population in *Kelurahan/Desa* and land use as explained in the following tables. To prepare socioeconomic indicators for the transport model, these socioeconomic indicators need to be distributed by the TAZ level.



Source: JUTPI 2

**Figure 24 Relation of Socioeconomic Framework and Travel Demand Forecast Model**

In this section, it is described that the methodology of distribution data by *Kota/Kabupaten* to *Kelurahan/Desa*. Once the population is distributed by *Kelurahan/Desa* level, then this *Kelurahan/Desa* population is aggregated into TAZ. As a next step, based on the estimated population by TAZ, the numbers of employees and students are distributed. To estimate the number of employment both residential place and working place, it is necessary to estimate not only the total number of employees, but also the number of

employments by industrial sectors, namely primary, secondary, and tertiary sectors. To distribute employments by sector, land use information, and total population size by TAZ are utilized.

**Table 31 Methodology of Employment and Student Distribution at Residential Place**

	<b>Methodology to distribute by TAZ from by Kota/Kabupaten</b>
Primary Sector	<ul style="list-style-type: none"> <li>Identify agriculture land area distribution by TAZ</li> <li>50% of primary sector employment estimates based on total population size</li> <li>50% of primary sector employment estimates based on agriculture land size</li> </ul>
Secondary Sector	<ul style="list-style-type: none"> <li>Identify industrial area distribution by TAZ</li> <li>50% of secondary sector employment estimates based on total population size</li> <li>50% of secondary sector employment estimates based on agriculture land size</li> </ul>
Tertiary Sector	<ul style="list-style-type: none"> <li>Identify commercial/education/public facility/mixed-use area distribution by TAZ</li> <li>50% of tertiary sector employment estimates based on total population size</li> <li>50% of tertiary sector employment estimates based on agriculture land size</li> </ul>
Students	<ul style="list-style-type: none"> <li>Based on population size by TAZ</li> </ul>

Source: JUTPI 2

**Table 32 Methodology of Workers and Student Distribution at Working/School Place**

	<b>Methodology to distribute by TAZ from by Kota/Kabupaten</b>
Primary Sector	<ul style="list-style-type: none"> <li>Identify agriculture land area distribution by TAZ</li> <li>20% of primary sector employment estimates based on total population size</li> <li>80% of primary sector employment estimates based on agriculture land size</li> </ul>
Secondary Sector	<ul style="list-style-type: none"> <li>Identify industrial area distribution by TAZ</li> <li>30% of secondary sector employment estimates based on total population size</li> <li>70% of secondary sector employment estimates based on agriculture land size</li> </ul>
Tertiary Sector	<ul style="list-style-type: none"> <li>Identify commercial/education/public facility/mixed-use area distribution by TAZ</li> <li>20% of tertiary sector employment estimates based on total population size</li> <li>80% of tertiary sector employment estimates based on agriculture land size</li> </ul>
Students	<ul style="list-style-type: none"> <li>Identify Education distribution by TAZ</li> <li>25% of the number of students estimates based on total population size</li> <li>75% of the number of students estimates based on agriculture land size</li> </ul>

Source: JUTPI 2

## (5) Base Year Socioeconomic Indicators

The base year population was collected by Kelurahan/Desa for the entire JABODETABEK area, so the TAZ population is calculated to integrate based on the corresponding table between *Kelurahan/Desa* and TAZ. Other socioeconomic indicators, such as employment and students, are estimated based on activity-travel diary (ADS) survey and other referential data, such as statistical data and publications from statistical agencies (BPS) in the level of national, regional, and local (*Kota/Kabupaten*), Ministry of Education, and Ministry of Manpower.

## (6) Target Year 2035 Population and Employment Distribution

### 1. Multi Regression Analysis for Population Distribution 2035

Using base year population data, multi regression analysis is adopted to identify the relationship between land use, accessibility to transport facilities, development constraints, and population. As a result, the relationship among the number of populations, land use, accessibility to transport facilities, and spatial regulations are identified. The population for each *Kelurahan/Desa* is estimated as shown in the following formula.

$$\begin{aligned} Pop_i = & 0.01401 \times \text{Residential area} + \\ & 0.006821 \times \text{Industry \& Warehouse} + \\ & 0.007292 \times \text{Commercial, Education \& Pub. Facility area} + \\ & 0.005291 \times \text{Agriculture area} + \\ & 0.005992 \times \text{Swamp, River \& Pond area} + \\ & 0.006163 \times \text{Bush \& Forest area} + \\ & -0.00838 \times \text{Dev. Constraint score (Natural Condition)} + \\ & 0.000404 \times \text{Dev. Constraint score (Regulation)} + \\ & 0.002002 \times \text{Access to JKT score} + \\ & 0.000957 \times \text{Access to Pub. Transport score} + \\ & 2452.762 \times \text{Access to Road score} \end{aligned}$$

Based on the above formula, the target year 2035 population by *Kelurahan/Desa* are estimated by considering transport network 2035 and spatial plan data.

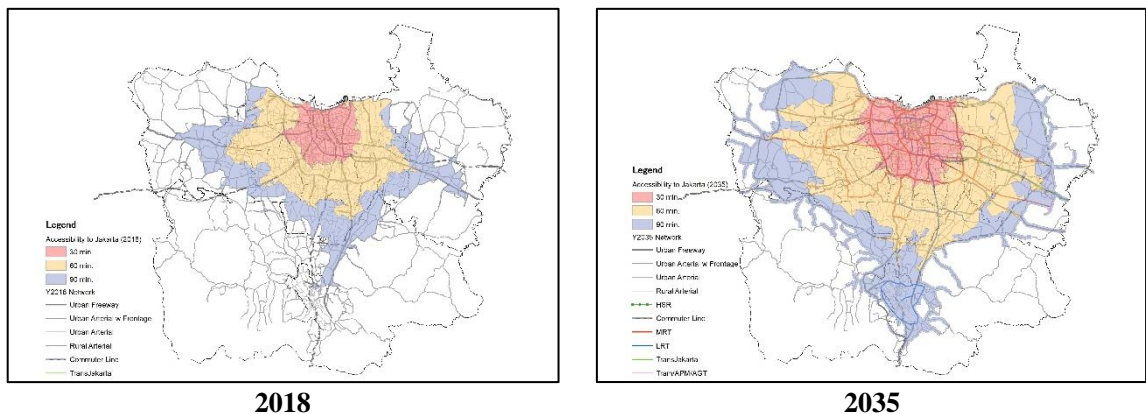
Three types of accessibility parameters were included as explanatory variables, which are “Access to JKT (DKI Jakarta)”, “Access to Public Transport,” and “Access to Road” as mentioned in Table 33. These parameters are results of accessibility analysis also using GIS techniques. For “Access to JKT (DKI Jakarta)” analysis, geospatial software is

utilized. Using the geospatial software, it is possible to obtain travel distance from a particular location referring to given network data and travel speed. Other variables related to accessibilities, such as accessibility to public transport and accessibility to roads are calculated using simple buffer analysis which calculates a particular distance from railway stations, bus stops, and road networks.

**Table 33 Estimated Factors of Development Potential Model**

	Explanatory variables	Coefficients	t -value	P-value	R Square	Obsn
Land use	Residential area	0.01401	15.19636	1.35E-48	0.831	1501
	Industry & Warehouse	0.006821	6.515418	9.89E-11		
	Commercial, Education & Public Facility	0.007292	3.391975	0.000712		
	Agriculture	0.005291	5.927388	3.82E-09		
	Swamp, River & Pond	0.005992	5.979235	2.8E-09		
	Bush & Forest	0.006163	6.392709	2.17E-10		
Dev. Constraint (Natural Condition)	Waterbody, Slope, Elevation	-0.00838	-8.77062	4.76E-18	0.831	1501
Dev. Constraint (Regulation)	Airport, Protected area, Low Capacity area, Technical Irrigation, Buffer for Protected area & Low capacity area, Security area	0.000404	1.956395	0.050605		
Accessibility	Access to DKI Jakarta	0.002002	10.9289	8.46E-27		
	Access to Public Transport	0.000957	6.233614	5.92E-10		
	Access to Road	2452.762	11.65018	4.41E-30		

Source: JUTPI 2



Source: JUTPI 2

**Figure 25 Result of Network Analysis for Accessibility to Jakarta (2018/2035)**



## 2. Future Population Distribution for Target year 2035

For the future socioeconomic indicator distribution, at first, the total population by *Kelurahan/Desa* are estimated based on the multi regression analysis as explained in the previous section.

To estimate the 2035 population, variables such as network data and land use data are replaced from existing condition data to future data. On the other hand, variables related to development constraints use the same data with the existing condition. The list of data to be used is shown in the following table.

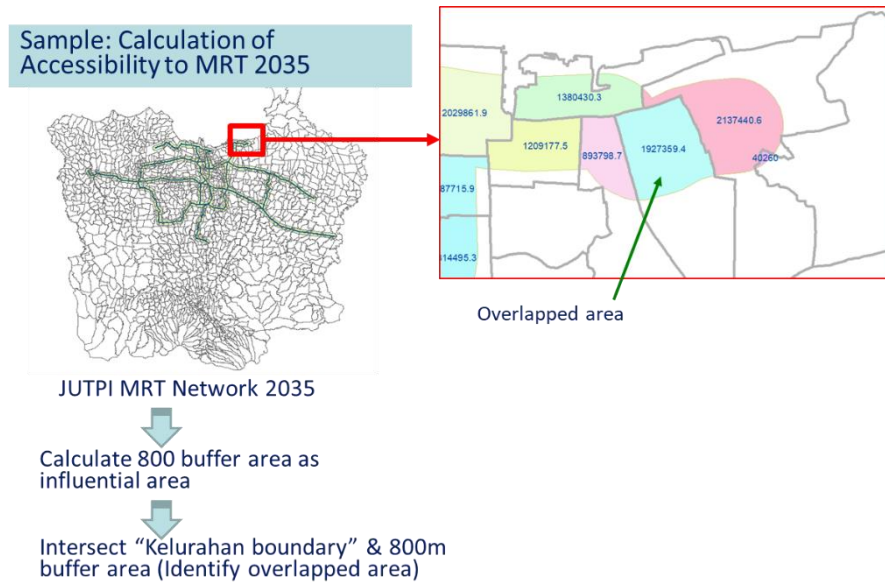
**Table 34 Data Source of Explanatory Variables**

	Explanatory variables	Data source	
		Base year	Target year
Land use	Residential area	Existing land use data prepared by JUTPI 2	RTRW prepared by <i>Kota/Kabupaten</i> , and existing land use data
	Industry & Warehouse		
	Commercial, Education & Pub. Facility		
	Agriculture		
	Swamp, River & Pond		
	Bush & Forest		
Dev. Constraint (Natural Condition)	Waterbody, Slope, Elevation	JABODETABEKPUNJUR plan and RTRW prepared by <i>Kota/Kabupaten</i>	Use same data with base year
Dev. Constraint (Regulation)	Airport, Protected Area, Low Capacity Area, Technical Irrigation, Buffer for Protected Area & Low Capacity Area, Security Area	JABODETABEKPUNJUR Spatial Plan and RTRW prepared by <i>Kota/Kabupaten</i>	Use same data with base year
Accessibility	Access to DKI Jakarta	Base year network data	Target year network data
	Access to Public Transport		
	Access to Road		

Source: JUTPI 2

These variables are prepared using overlay operation with GIS software between *Kelurahan/Desa* boundary and the variable. In the results of overlaid operation, the overlapped area of each variable and *Kelurahan/Desa* area is obtained. Using obtained areas, necessary explanatory variables are prepared as a table. Figures below show samples' image of the variables table to apply to the formula to estimate the target year

population.



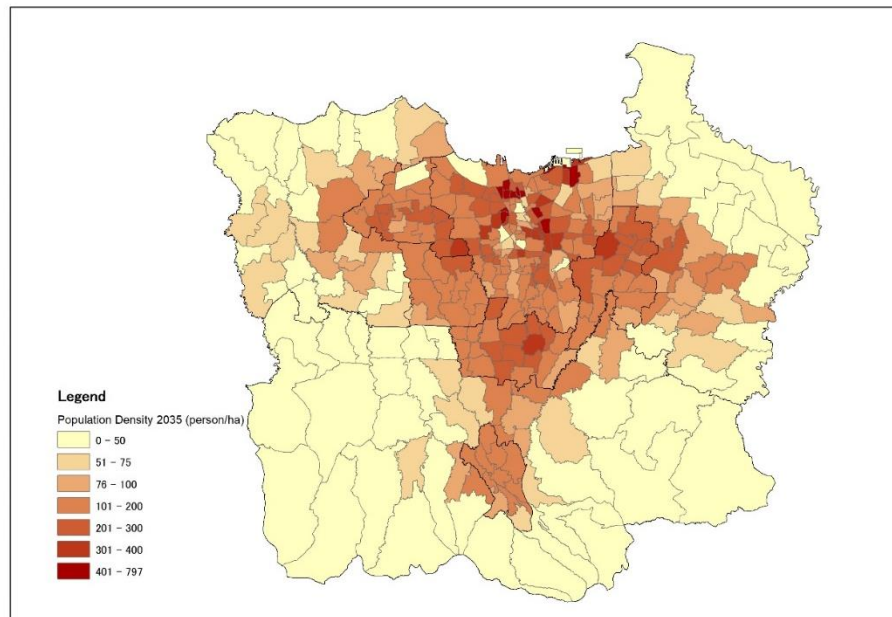
Source: JUTPI 2

**Figure 26 Preparation of Explanatory Variables for Target Year**

Kelurahan / Desa Code	Total area Kel/Desa	Waterbody score	*****	Protected area	Low Capacity area	*****	Access to Road	Access to Pub. Transport	*****	Residential area
3171010001	4110714.3	101123.3	*****	258098.4	52809.1	*****	4001350.8	2101350.8	*****	3538902.1
3171010002	3322110	221133.4	*****	112233.4	0	*****	334455.6	1234.1	*****	45678.9
*****										

Source: JUTPI 2

**Figure 27 Image of Input Data for Target Year Population Estimation**



Source: JUTPI 2

**Figure 28 Estimated 2035 Population Density by TAZ**

**(7) Intermediate Year Socioeconomic Framework Distribution (Year 2024/2029)**

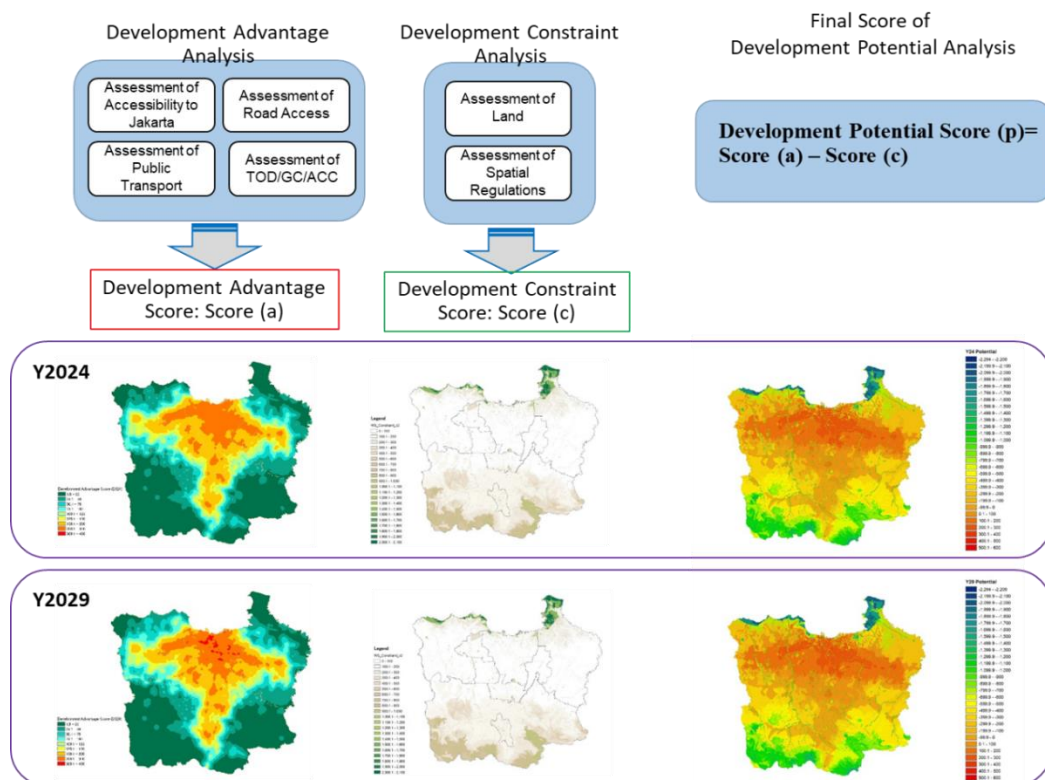
In the final stage of the JUTPI 2, it is requested to formulate intermediate year transport plans in 2024 and 2029. To formulate intermediate plans, it is necessary to run the transport demand forecast model of intermediate years in parallel with preparing intermediate year socioeconomic indicators. However, intermediate year land use plan data is not available, so different method of population estimation is applied using the development potential model.

As an initial step, the development potential scores of the base year and target year are calculated. The following potential scores of intermediate years is also calculated. As explained in the previous section, base year and target year population were prepared in advance, using these population data and potential scores of base years, target year and intermediate year, intermediate year total population is estimated without land use plan data. Figure 29 shows the concept of intermediate year population estimation.

### 1.4.2 Development Potential Model

Development potential model is prepared to distribute the total population by *Kota/Kabupaten* to village level of the intermediate year, 2024 and 2029 because these intermediate year land use plans are not available.

As explained in 1.4.1(6), population agglomerations have a relationship with land use, accessibility to transport facilities, and development constraints. Considering these relationships, it is estimated future population distribution patterns for intermediate years together with a base year and 2035 potentials as the benchmark. This development potential model is a multi-criteria spatial analysis with population, land use, accessibility (road, railway station, urban centers, etc.), and development constraint area to calculate development potential score by 200 m cell basis in raster format. Calculated total development potential scores by 200 m cell basis are aggregated into a TAZ basis.



Source: JUTPI 2

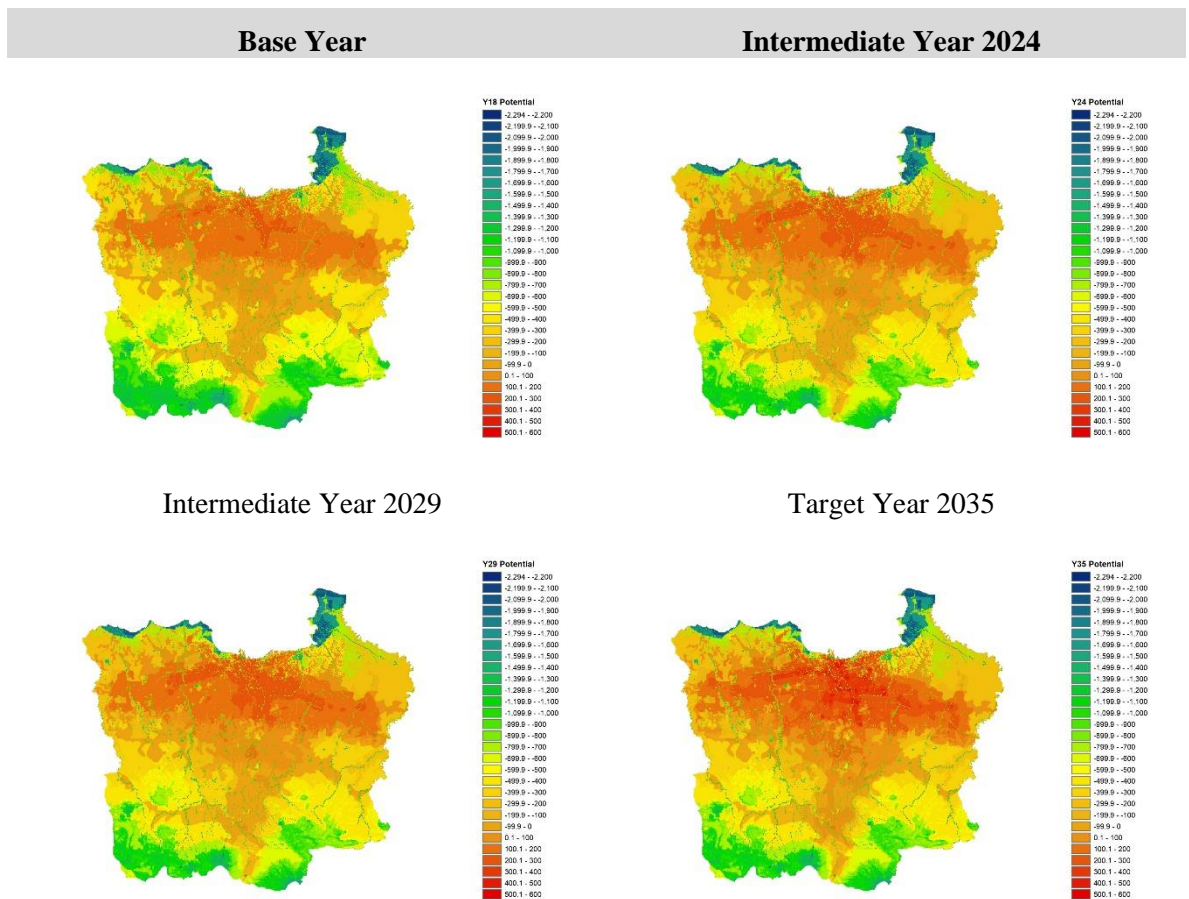
Figure 29 Image of Development Potential Model

**Table 35 Input Parameters for Development Potential Model**

	<b>Base year</b>	<b>Target year</b>	<b>Intermediate year</b>	<b>Remarks</b>
Accessibility to Jakarta	<ul style="list-style-type: none"> <li>DKI Jakarta Access (30/60/90 min.) travel time</li> <li>Distance from DKI Jakarta central area (10 km area)</li> </ul>	<ul style="list-style-type: none"> <li>DKI Jakarta Access (30/60/90 min.) travel time</li> <li>Distance from DKI Jakarta central area (10 km area)</li> </ul>	<ul style="list-style-type: none"> <li>DKI Jakarta Access (30/60/90 min.) travel time</li> <li>Distance from DKI Jakarta central area (10 km area)</li> </ul>	The base year uses base year network data, target year and intermediate year uses particular year network data for transport demand forecast model
Road Access	<ul style="list-style-type: none"> <li>Access to Urban Freeway</li> <li>Access to Urban Arterial</li> <li>Access to Rural Arterial</li> </ul>	<ul style="list-style-type: none"> <li>Access to Urban Freeway</li> <li>Access to Urban Arterial</li> <li>Access to Rural Arterial</li> </ul>	<ul style="list-style-type: none"> <li>Access to Urban Freeway</li> <li>Access to Urban Arterial</li> <li>Access to Rural Arterial</li> </ul>	
Public Transport Access	<ul style="list-style-type: none"> <li>Access to Commuter rail station</li> <li>Access to BRT station</li> </ul>	<ul style="list-style-type: none"> <li>Access to Commuter rail station</li> <li>Access to BRT station</li> <li>Access to Tram/APM/AGT station</li> <li>Access to MRT station</li> <li>Access to LRT station</li> <li>Access to BRT station</li> </ul>	<ul style="list-style-type: none"> <li>Access to Commuter rail station</li> <li>Access to BRT station</li> <li>Access to Tram/APM/AGT station</li> <li>Access to MRT station</li> <li>Access to LRT station</li> <li>Access to BRT station</li> </ul>	
Land use	<ul style="list-style-type: none"> <li>Residential area (Planned house, High-density Kampung, Low-density kampung)</li> <li>Industrial area</li> <li>Commercial, Education &amp; Public Facility</li> <li>Agriculture area</li> <li>Waterbody (Swamp, River &amp; Pond)</li> <li>Bush &amp; Forest</li> </ul>	<ul style="list-style-type: none"> <li>Residential area (Planned house, High-density Kampung, Low-density kampung)</li> <li>Industrial area</li> <li>Commercial, Education &amp; Public Facility</li> <li>Agriculture area</li> <li>Waterbody (Swamp, River &amp; Pond)</li> <li>Bush &amp; Forest</li> <li>New Development areas based on RTRW</li> </ul>	<ul style="list-style-type: none"> <li>Not available</li> </ul>	
Other Development Plan	-	<ul style="list-style-type: none"> <li>TOD</li> <li>Growth Center</li> <li>Activity Center</li> </ul>	<ul style="list-style-type: none"> <li>TOD</li> <li>Growth Center</li> <li>Activity Center</li> </ul>	Collected and Prepared by JUTPI 2 for each case
Development Constraint (Natural Condition)	<ul style="list-style-type: none"> <li>Airport</li> <li>Slope condition</li> <li>Elevation</li> </ul>	<ul style="list-style-type: none"> <li>Airport</li> <li>Slope condition</li> <li>Elevation</li> </ul>	<ul style="list-style-type: none"> <li>Airport</li> <li>Slope condition</li> <li>Elevation</li> </ul>	Base year, target year and intermediate year use the same data
Development Constraint (Spatial Regulation: JABODETAB EKUNJUR plan)	<ul style="list-style-type: none"> <li>Protected area and areas to protect the protected area (L1, P1, P2)</li> <li>Low environment capacity (B3, B4)</li> <li>Tech. Irrigation (B5)</li> <li>The buffer zone for the protected area (B7)</li> </ul>	<ul style="list-style-type: none"> <li>Protected area and areas to protect the protected area (L1, P1, P2)</li> <li>Low environment capacity (B3, B4)</li> <li>Tech. Irrigation (B5)</li> <li>The buffer zone for the protected area (B7)</li> </ul>	<ul style="list-style-type: none"> <li>Protected area and areas to protect the protected area (L1, P1, P2)</li> <li>Low environment capacity (B3, B4)</li> <li>Tech. Irrigation (B5)</li> <li>The buffer zone for the protected area (B7)</li> </ul>	
Development Constraint (Spatial Regulation: RTRW by Kota/Kabupaten)	<ul style="list-style-type: none"> <li>Military/Security area</li> </ul>	<ul style="list-style-type: none"> <li>Military/Security area</li> </ul>	<ul style="list-style-type: none"> <li>Military/Security area</li> </ul>	

Source: JUTPI 2

For the development potential model, all of the GIS data are converted into raster format which is a cell size of 200 square meters, after calculating potential score on the cell basis, the total potential score by *Kelurahan/Desa* are aggregated as a result of the model. Figure 30 shows the results of the model for the base year, both intermediate year (2024 and 2029) and target year 2035.



Source: JUTPI 2

**Figure 30 Result of Development Potential Model**

### Estimation of Intermediate Year Population by TAZ

Based on the result score of the development potential model, the following procedure is applied to estimate the population by TAZ.

- 1) Set the target year 2035 potential score as 100 and base year potential as zero, calculate the ratio of intermediate year potential score (achievement ratio of development potential)

- 2) Based on the base year population, target year population and achievement ratio of development potential estimates increment population of intermediate year population by TAZ
- 3) Add increment population into base year population by TAZ.

**Table 36 Concept of Intermediate Year Population Estimation**

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
	Base Year Pop	Target Year Pop	Base Year Score	Target Year Score	Score Balance (Target-Base year)	Increment population (target year Pop. - base year Pop.)	Intermediate year score 2024	Achievement of score to target year	Incremental population between base year to 2024	Population 2024
Village A	10,000	11,000	1,000	2,000	1,000	1,000	1,050	5%	50	10,050
Village B	15,000	20,000	500	900	400	5,000	600	25%	1250	16,250
Village C	20,000	30,000	1,000	2,000	1,000	10,000	1,100	10%	1000	21,000
Village D	30,000	33,000	1,200	1,400	200	3,000	1,300	50%	1500	31,500

- ① Base year population by *Kelurahan/Desa* are collected by JUTPI 2
- ② Target year population was estimated using multi regression analysis with base year population, land use, accessibility and development constraint
- ③ Base year development potential score calculated using the development potential model
- ④ Target year development potential score calculated using the development potential model
- ⑤ Calculate an incremental score between base year and target year
- ⑥ Calculate an incremental number of populations between base year and target year
- ⑦ Intermediate year development potential score calculated using development potential model
- ⑧ Calculate the ratio of intermediate year score with incremental score between base year and target year:  $= \frac{(7-3)}{5}$
- ⑨ Estimated incremental population between base year and intermediate year:  $= 6 * 8$
- ⑩ The estimated total population in intermediate year:  $= 1 + 9$

Source: JUTPI 2

## Chapter 2 EMPLOYMENT AND SCHOOL ENROLLMENT

This chapter examines the socioeconomic characteristics that relate to workers and students. Economic activity, the profile of workers and students with future projection become the focus of this chapter. Assumptions and results of the future projection will be utilized as an input for transport demand modeling later in the study.

### 2.1 Socioeconomic Characteristics

#### 2.1.1 Economic Activity

The labor force portion is relatively different by gender as depicted in Table 37. It is counted based on BPS data in 2017, the male portion accounts for 86.6%, while the female portion is 31.7%. From the percentage, the ratio of people looking for work (unemployment) is 8%. On the other hand, the non-economically active population for the male is 13.4% and 68.3% for female. From the non-economically active population, the thing to focus on is the housekeeping portion, which is substantially large, accounting for 59.9%.

**Table 37 Economic and Non-Economic Active Population Share**

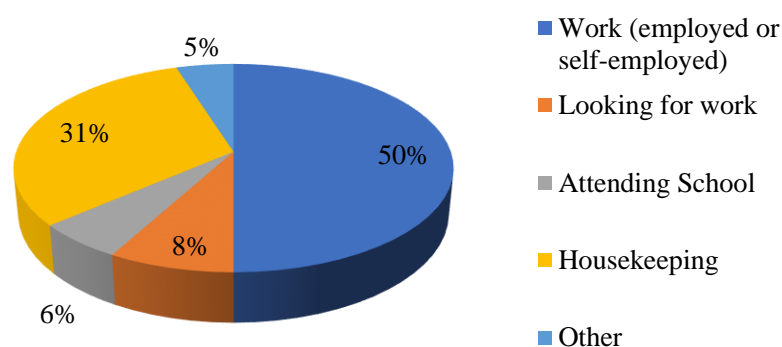
Classification	SITRAMP (2002)			JUTPI1 (2010)			JUTPI2 (2018)		
	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)
Labour Force	66.9	27.6	47.5	88.5	32.0	59.1	86.6	31.7	58.0
Work (employed or self-employed)	57.7	21.3	39.7	76.1	24.5	49.2	76.7	25.4	50.0
Looking for work	9.2	6.3	7.8	12.4	7.5	9.8	9.9	6.3	8.0
Non-economically active population	33.1	72.4	52.5	4.6	65.2	36.2	13.4	68.3	42.0
Attending School	28.8	27.9	28.4	3.9	4.2	4.1	5.6	5.8	5.7
Housekeeping	0.5	43.6	21.9	0.7	61.0	32.1	0.5	59.9	31.4
Other	3.8	0.9	2.4	6.9	2.8	4.8	7.3	2.7	4.9

Source: JUTPI 2 based on BPS (2017), JUTPI1 (2010), and SITRAMP (2002)

The proportion of economic and non-economic activity share of the JABODETABEK



population can be shown in the following figure.



Source: JUTPI 2

**Figure 31 Types of Economic Activity in JABODETABEK as of 2017**

### 2.1.2 Workers at Residential and Workplace Profile

The number of workers is identified based on residential place and workplace. It is found out that the number of primary sectors fluctuates throughout the years. The share in 2002 is the highest (8%) and after 2002, the share of primary workers decreases to 3% in 2017 and the share of the secondary sector has been quite the same trend from 2002 to 2017 although the numbers by provincial- and city- levels do not indicate the same trend. The tertiary sector increases from 68% in 2002 to 73% in 2017. Average growth shows that the tertiary sector has the highest rate compared to other sectors as depicted in the following table.

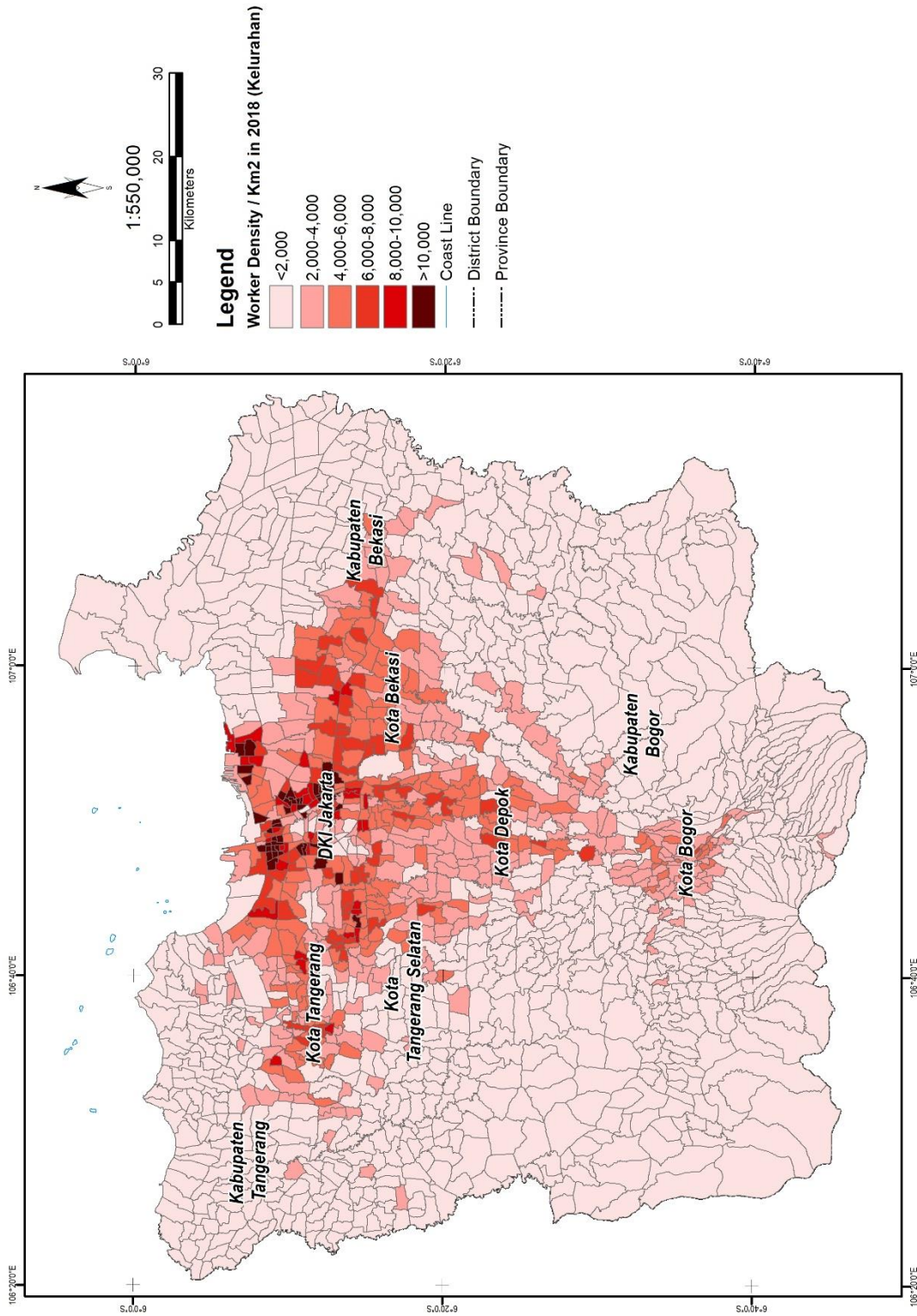
**Table 38 Workers Share by Work Sector in JABODETABEK**

Unit: 1000 persons

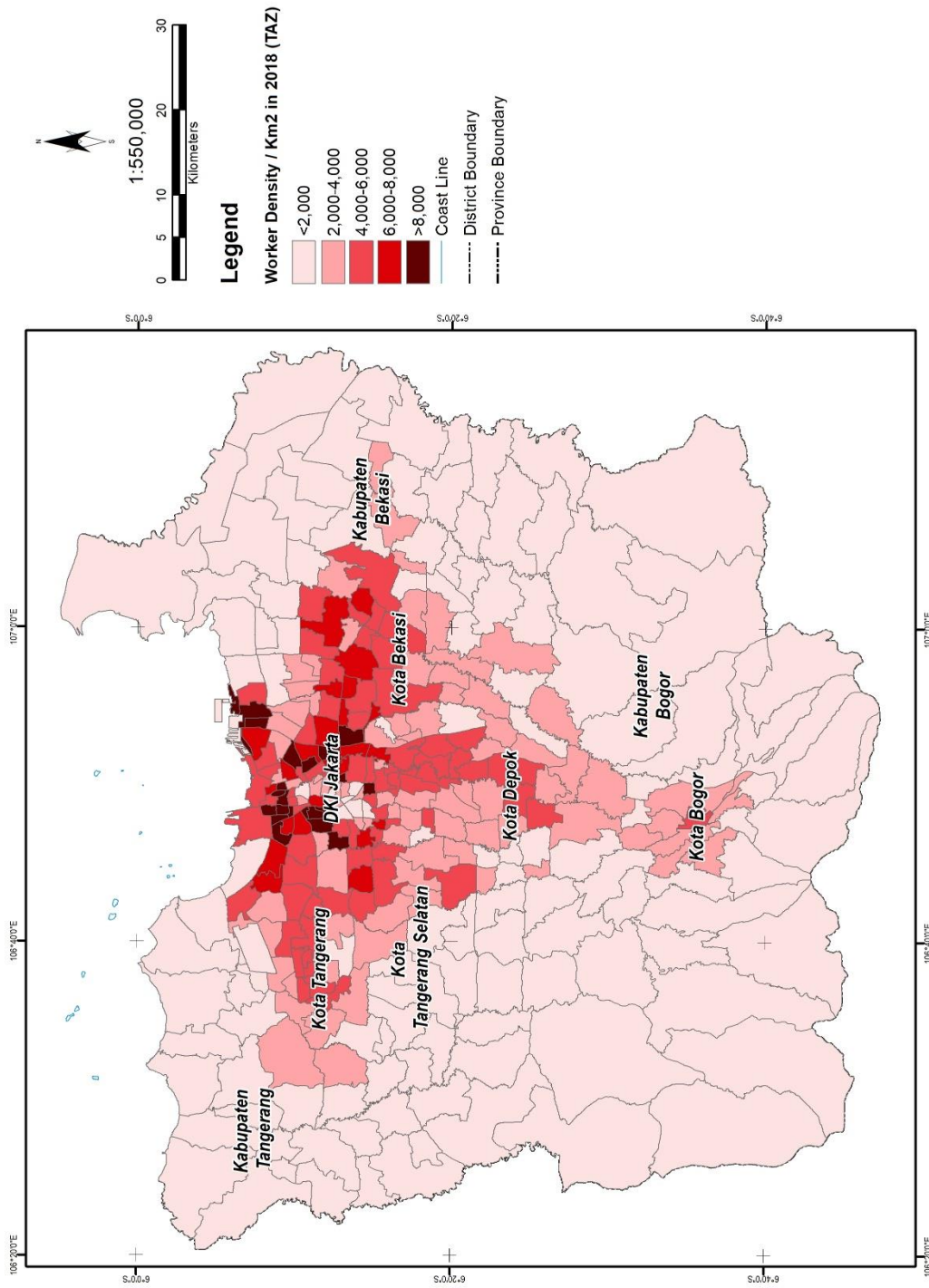
Sector	2002 (SITRAMP)	2010 (JUTPI 1)	BPS Data			2002	2010	2014	2015	2017	Average share
			2014	2015	2017						
Primary	576	531	555	386	449	8%	6%	4%	3%	3%	5%
Secondary	1,856	2,125	3,367	3,252	3,229	24%	25%	25%	24%	24%	24%
Tertiary	5,160	5,889	9,472	9,819	10,016	68%	69%	71%	73%	73%	71%
Total	7,592	8,545	13,394	13,456	13,695	100%	100%	100%	100%	100%	100%

Source: JUTPI 2 based on BPS (2017), JUTPI1 (2010), and SITRAMP (2002)

Furthermore, workers' density distribution by *Kelurahan/Desa* and TAZ can be seen in Figure 32 and Figure 33.



Source: JUTPI 2  
**Figure 32 Workers Density Distribution at Residential Place by Kelurahan 2018**



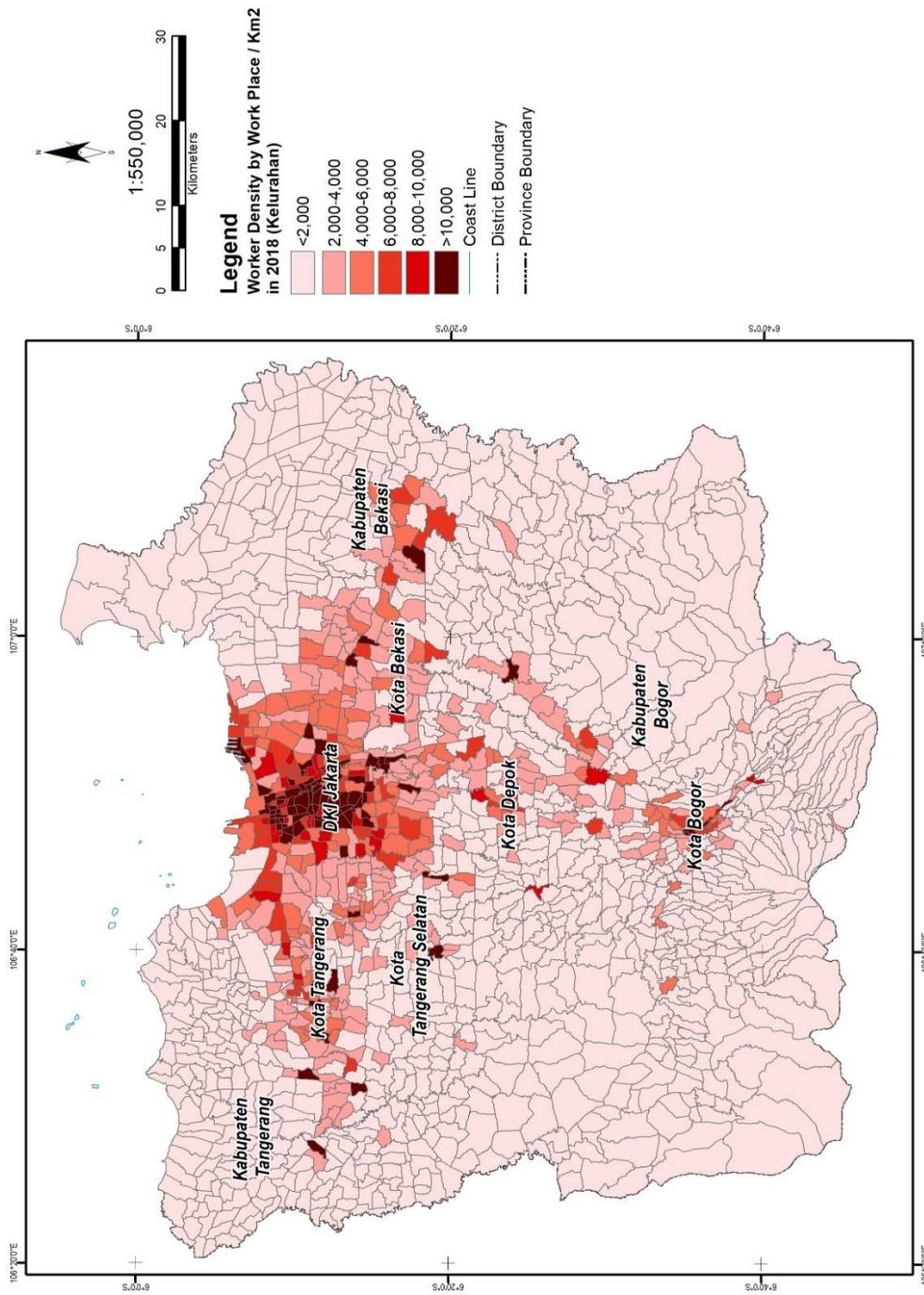
Source: JUTPI 2  
**Figure 33 Workers Density Distribution at Residential Place by TAZ 2018**

The number of workers by the workplace in each *Kota/Kabupaten* is shown in Table 39 below. The tertiary sector made a significant increase in 2018 compare to 2010. Moreover, DKI Jakarta workers' portion shows the trend of decreasing from 2002 to 2018 while Kabupaten Bogor shows the trend of increasing and began equaled the number of workers in DKI Jakarta. The distribution of workers density at the workplace by *Kelurahan/Desa* and TAZ can be shown in Figure 34 and Figure 35.

**Table 39 Workers at Workplace**

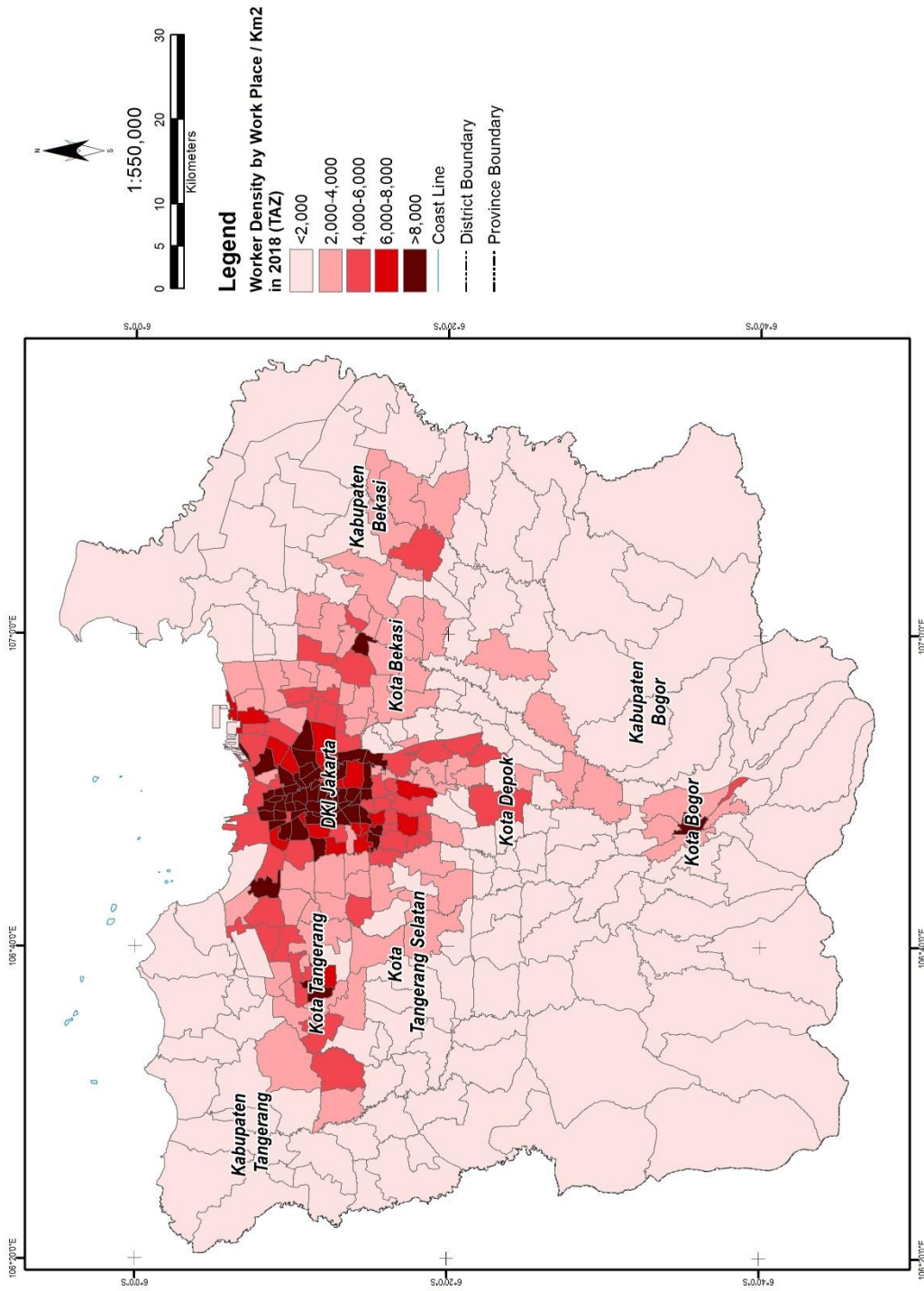
	SITRAMP (2002)							
	Primary		Secondary		Tertiary		Total	
	No. ('000)	%	No. ('000)	%	No. ('000)	%	No. ('000)	%
DKI Jakarta	90	2.5%	627	17.6%	2,849	79.9%	3,565	46.8%
Kota Tangerang	336	46.7%	166	23.1%	218	30.3%	719	9.4%
Kab. Tangerang	108	15.5%	209	30.0%	379	54.5%	696	9.1%
Kota Tangerang Selatan	-	-	-	-	-	-	-	-
Kota Depok	181	46.8%	49	12.7%	157	40.6%	387	5.1%
Kota Bogor	219	49.1%	50	11.2%	177	39.7%	446	5.9%
Kab. Bogor	187	20.1%	256	27.6%	486	52.3%	929	12.2%
Kota Bekasi	132	38.8%	142	41.8%	66	19.4%	340	4.5%
Kab. Bekasi	201	37.6%	133	24.9%	200	37.5%	534	7.0%
Total	1,454	19.1%	1,631	21.4%	4,532	59.5%	7,617	100.0%
	JUTPI 1 (2010)							
	Primary		Secondary		Tertiary		Total	
	No. ('000)	%	No. ('000)	%	No. ('000)	%	No. ('000)	%
DKI Jakarta	86	3.0%	818	28.5%	1,969	68.5%	2,873	40.7%
Kota Tangerang	10	1.7%	146	24.6%	438	73.9%	593	8.4%
Kab. Tangerang	18	3.0%	154	25.7%	428	71.5%	599	8.5%
Kota Tangerang Selatan	23	13.0%	37	20.9%	117	66.1%	177	2.5%
Kota Depok	54	13.1%	135	32.7%	224	54.2%	413	5.8%
Kota Bogor	22	14.0%	78	49.7%	57	36.3%	157	2.2%
Kab. Bogor	85	7.9%	500	46.4%	492	45.6%	1,078	15.3%
Kota Bekasi	20	6.8%	89	30.1%	187	63.2%	296	4.2%
Kab. Bekasi	48	5.5%	281	32.2%	545	62.4%	873	12.4%
Total	365	5.2%	2,238	31.7%	4,457	63.1%	7,060	100.0%
	JUTPI 2 (2018)							
	Primary		Secondary		Tertiary		Total	
	No. ('000)	%	No. ('000)	%	No. ('000)	%	No. ('000)	%
DKI Jakarta	72	1.9%	701	18.7%	2,973	79.3%	3,747	30.1%
Kota Tangerang	8	1.3%	227	37.0%	378	61.6%	614	5.6%
Kab. Tangerang	48	6.4%	346	46.1%	355	47.3%	751	9.5%
Kota Tangerang Selatan	7	1.9%	62	16.5%	306	81.4%	376	3.0%
Kota Depok	9	2.4%	92	24.1%	280	73.5%	381	3.3%
Kota Bogor	13	4.1%	66	21.0%	235	74.6%	315	3.0%
Kab. Bogor	279	19.7%	437	30.9%	696	49.2%	1414	27.2%
Kota Bekasi	9	1.5%	170	28.1%	424	70.1%	605	5.2%
Kab. Bekasi	78	8.6%	461	51.0%	364	40.3%	904	13.0%
Total	528	5.8%	2,566	28.2%	6,015	66.0%	9,110	100.0%

Source: JUTPI 2



Source: JUTPI 2

Figure 34 Distribution of Workers Density at Workplace by Kelurahan 2018



Source: JUTPI 2  
 Figure 35 Distribution of Workers Density at Workplace by TAZ 2018

### 2.1.3 Students at Residential and School Place Profile

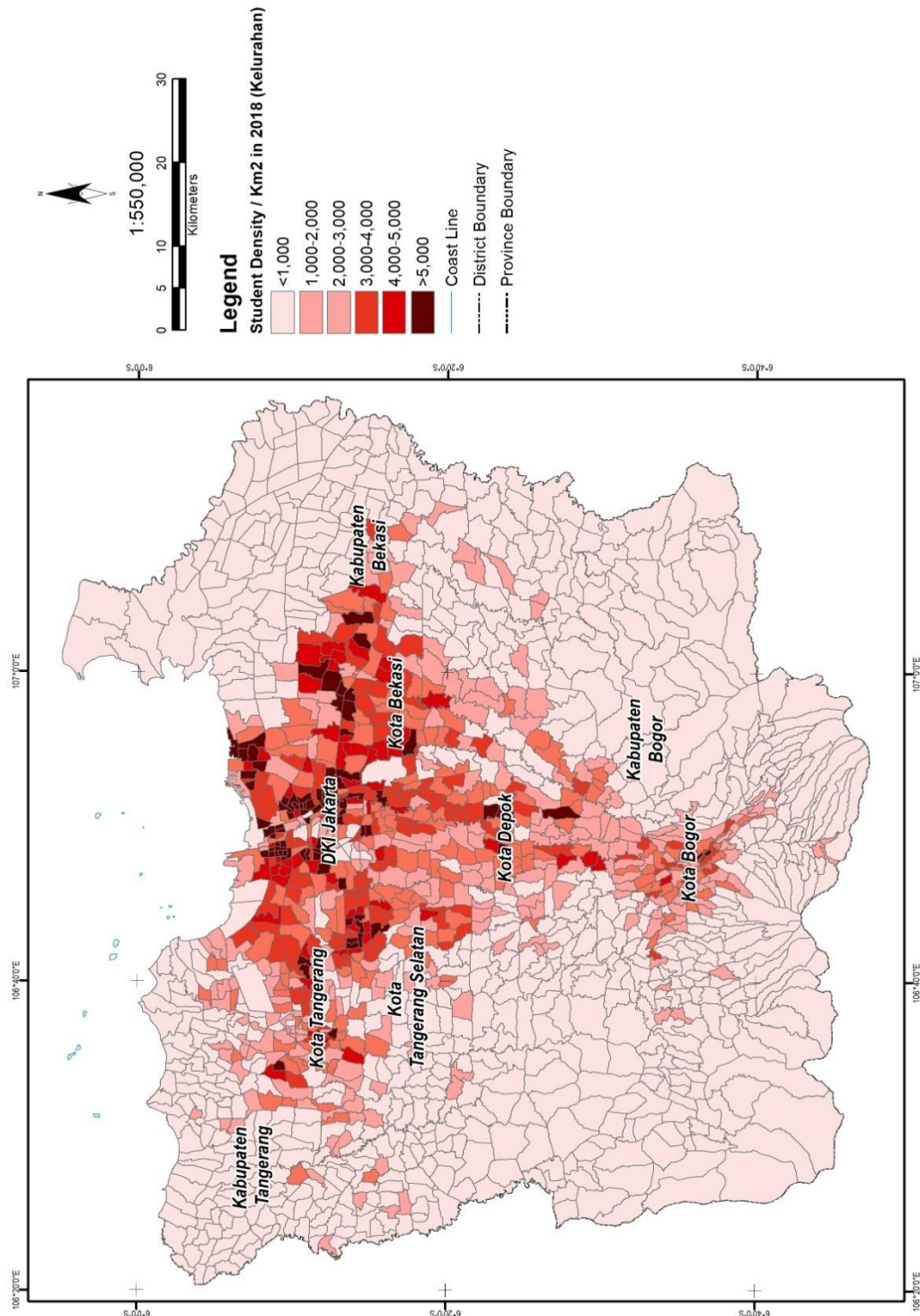
The number of students at the residential base is calculated based on BPS data by considering the trend of population growth and pattern of the previous study (SITRAMP and JUTPI 1). Based on prior studies, the number of students in residential places has been increasing from 5.6 million to 6.5 million from 2002 – 2010. In 2018, the number of students has been increased by 1.1 million to 7.6 million students, showing a variation of growth direction in the urban area. The highest share comes from Kabupaten Bogor and the least share is from Jakarta Pusat and Kota Bogor.

**Table 40 Number of Students at Residential Place**

Students	SITRAMP (2002)		JUTPI 1 (2010)		JUTPI 2 (2018)	
	No. '000	%	No. '000	%	No. '000	%
Jakarta Selatan	454	8%	880	13%	459	6%
Jakarta Timur	642	11%	570	9%	616	8%
Jakarta Pusat	195	3%	483	7%	196	3%
Jakarta Barat	498	9%	433	7%	574	7%
Jakarta Utara	380	7%	234	4%	405	5%
Kota Tangerang	389	7%	530	8%	887	12%
Kota Tangerang Selatan	-	-	-	3%	-	6%
Kabupaten Tangerang	759	13%	603	9%	334	4%
Kota Depok	321	6%	432	7%	1,516	20%
Kota Bogor	196	3%	146	2%	814	11%
Kabupaten Bogor	870	16%	952	15%	243	3%
Kota Bekasi	518	9%	349	5%	640	8%
Kabupaten Bekasi	420	8%	734	11%	502	7%
Total	5,643	100%	6,545	100%	7,664	100%

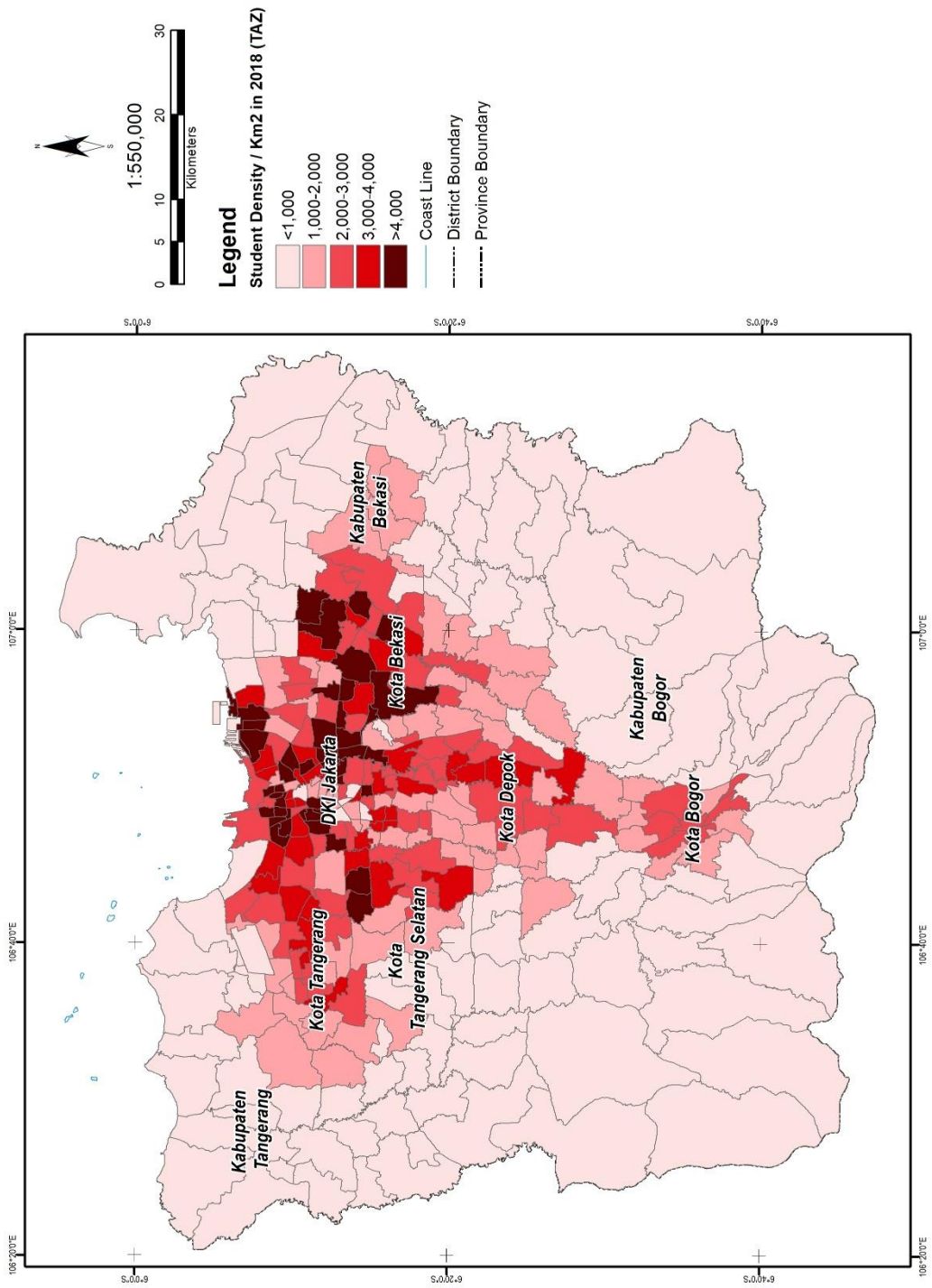
Source: JUTPI 2

In the following figures about student density at residential place by *Kelurahan/Desa* and TAZ, Kota Bekasi has the most equitable student distribution compared to other cities. Other areas such as Kabupaten Bogor, Kabupaten Tangerang, and Kabupaten Bekasi have uneven student distribution, due to broader area and not fully developed.



Source: JUTPI 2  
**Figure 36 Students Density Distribution at Residential Place by Kelurahan 2018**





Source: JUTPI 2  
 Figure 37 Students Density Distribution at Residential Place by TAZ 2018

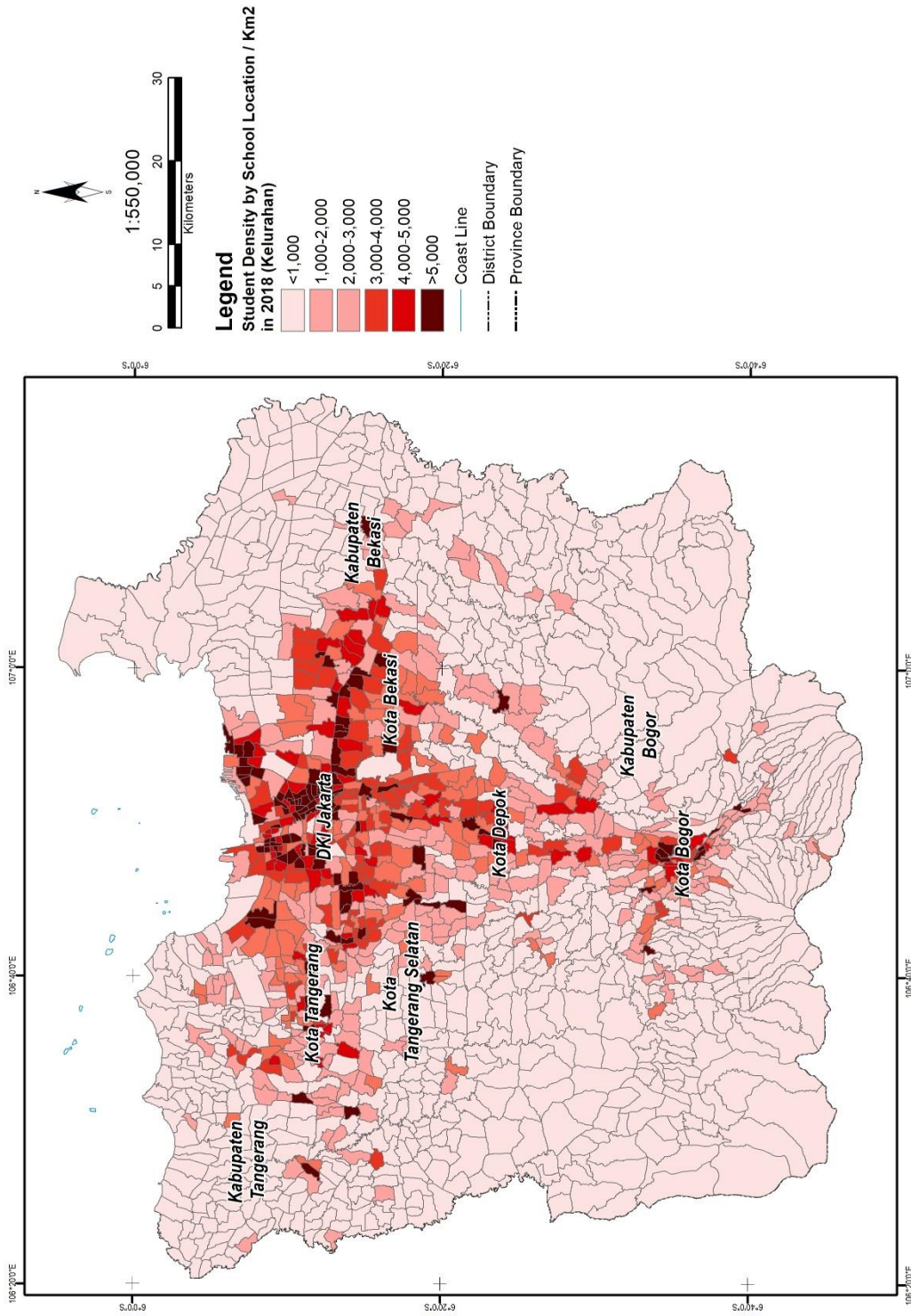
The number of students by school place is calculated based on BPS data that shows the number of students from each level of study (primary school, secondary school, high school, and higher education) in each *Kota/Kabupaten*. Regarding the school place, the distribution of students by BPS data is almost the same between years as it is dependable on population structure. In 2018, the number of students at school place is around 7.6 million or increases by nearly 20% in 8 years. The highest share is from Kabupaten Bogor and Kabupaten Tangerang while the least share is from Jakarta Pusat and Kota Bogor. Below is further information about the number of students in the school place.

**Table 41 Number of Students at School Place**

Students	SITRAMP (2002)		JUTPI 1 (2010)		2017 (BPS)		JUTPI2 (2018)	
	No. 000	%	No. 000	%	No. 000	%	No. 000	%
Jakarta Selatan	576	10%	755	12%	617	8%	446	6%
Jakarta Timur	684	12%	579	9%	627	9%	628	8%
Jakarta Pusat	287	5%	545	8%	280	4%	197	3%
Jakarta Barat	525	9%	426	7%	489	7%	537	7%
Jakarta Utara	313	6%	272	4%	275	4%	407	5%
Kota Tangerang	338	6%	535	8%	403	5%	483	6%
Kota Tangerang Selatan	-	-	236	4%	809	11%	401	5%
Kabupaten Tangerang	707	13%	660	10%	700	10%	917	12%
Kota Depok	312	6%	369	6%	384	5%	489	6%
Kota Bogor	232	4%	135	2%	513	7%	237	3%
Kabupaten Bogor	834	15%	886	14%	1,134	15%	1,454	19%
Kota Bekasi	412	7%	324	5%	524	7%	632	8%
Kabupaten Bekasi	406	7%	754	11%	610	8%	806	11%
Total	5,628	100%	6,383	100%	7,365	100%	7,633	100%

Source: JUTPI 2 based on BPS (2017), JUTPI1 (2010), and SITRAMP (2002)

In the following figures about student density at school location by *Kelurahan/Desa* and TAZ, it is shown that DKI Jakarta, Kota Bekasi, and Kota Depok have an equitable student distribution as shown in Figure 38 and Figure 39 about student density at school location by *Kelurahan/Desa* and TAZ. Moreover, some areas in DKI Jakarta and Kota Bekasi have dense student distribution. Similar to student distribution by residential place case, Kabupaten Bogor, Kabupaten Tangerang, and Kabupaten Bekasi have uneven student distribution, due to a broader area and not fully developed.



Source: JUTPI 2

Figure 38 Distribution of Students Density School Locations by Kelurahan 2018

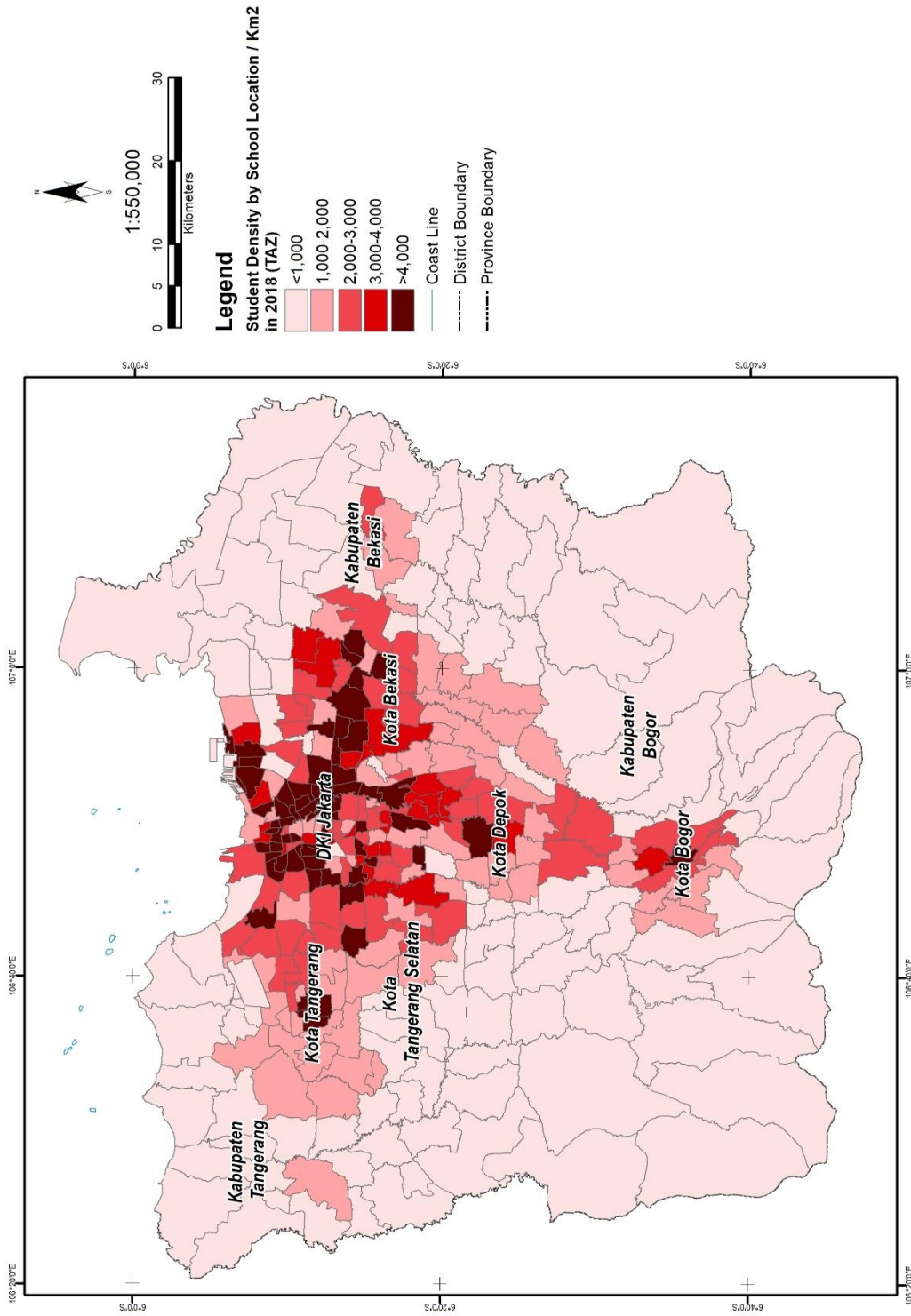


Figure 39 Distribution of Students Density School Locations by TAZ 2018

Source: JUTPI 2

## 2.2 Future Workers and Students Distribution

### 2.2.1 Workers at Residential and Workplace Projection

The number of workers at the residential base is calculated with population structure and composition. The number of workers and students that were calculated with the population structure and composition population is shown below. The number of workers increases from 7 million in 2010 to 18 million in 2035, and the number of students increases from 6.5 million in 2010 to 10.3 million in 2035 as depicted in the table below.

**Table 42 Number of Workers at Residential Place in The Future**

Unit: 1000 persons

City	2010 (JUTPI 1)	2017	2020	2025	2029	2030	2035
Jakarta Selatan	794	739	768	811	849	859	911
Jakarta Timur	621	999	1,034	1,086	1,132	1,144	1,209
Jakarta Pusat	569	323	331	342	351	353	364
Jakarta Barat	453	919	960	1,025	1,085	1,102	1,193
Jakarta Utara	228	627	648	677	707	715	757
Kab. Tangerang	628	1,166	1,308	1,561	1,792	1,852	2,187
Kota Tangerang	536	785	859	984	1,090	1,117	1,262
Kota Tangerang Selatan	215	566	638	765	880	910	1,071
Kab. Bogor	1,221	1,746	1,928	2,250	2,525	2,597	2,976
Kab. Bekasi	807	1,166	1,342	1,679	1,997	2,080	2,560
Kota Bogor	180	335	363	410	448	458	507
Kota Bekasi	344	947	1,052	1,239	1,397	1,439	1,657
Kota Depok	570	752	855	1,047	1,221	1,266	1,518
Total	7,164	11,069	12,087	13,873	15,474	15,891	18,174

Source: JUTPI 2

In the future, two things affect the number of workers; one is the share of the work sector, and another is the growth rate. Thus, the number of workers is estimated considering these two factors. Because the trend is different between *Kota/Kabupaten* levels, the share of the work sector should be considered by averaging the number of shares in *Kota/Kabupaten*. Thus, the whole growth rate should be considered towards the direction of low increment in the primary and secondary sectors and higher increment for the tertiary sector. As a result, the share of workers by sector is shown below.

**Table 43 Future Share of Workers by Sector in 2035**

Sector	City	2002 (SITRAMP)	2010 (JUTPI 1)	Average share	2035 Assumption
Primary	DKI Jakarta	2%	2%	1%	0.4%
	Kab. Tangerang	12%	8%	8%	3%
	Kota Tangerang	2%	2%	1%	0.4%
	Kota Tangerang Selatan	-	3%	1%	0.4%
	Kab. Bogor	18%	17%	13%	4%
	Kab. Bekasi	21%	15%	11%	4%
	Kota Bogor	6%	5%	3%	1%
	Kota Bekasi	3%	2%	1%	0.5%
	Kota Depok	4%	3%	2%	1%
	Total		8%	6%	5%
Secondary	DKI Jakarta	19%	17%	19%	11%
	Kab. Tangerang	29%	40%	40%	29%
	Kota Tangerang	34%	29%	32%	20%
	Kota Tangerang Selatan	-	14%	11%	6%
	Kab. Bogor	26%	28%	25%	17%
	Kab. Bekasi	32%	38%	36%	26%
	Kota Bogor	24%	21%	18%	11%
	Kota Bekasi	27%	29%	25%	16%
	Kota Depok	21%	21%	16%	9%
	Total		24%	25%	24%
Tertiary	DKI Jakarta	78%	81%	80%	89%
	Kab. Tangerang	60%	51%	52%	68%
	Kota Tangerang	64%	70%	67%	79%
	Kota Tangerang Selatan	-	84%	88%	93%
	Kab. Bogor	56%	54%	62%	79%
	Kab. Bekasi	47%	47%	53%	70%
	Kota Bogor	69%	74%	79%	88%
	Kota Bekasi	69%	69%	73%	84%
	Kota Depok	74%	76%	82%	90%
	Total		68%	69%	71%
Total	DKI Jakarta	100%	100%	100%	100%
	Kab. Tangerang	100%	100%	100%	100%
	Kota Tangerang	100%	100%	100%	100%
	Kota Tangerang Selatan	-	100%	100%	100%
	Kab. Bogor	100%	100%	100%	100%
	Kab. Bekasi	100%	100%	100%	100%
	Kota Bogor	100%	100%	100%	100%
	Kota Bekasi	100%	100%	100%	100%
	Kota Depok	100%	100%	100%	100%
	Total		100%	100%	100%

Source: JUTPI 2

Based on population structure and the assumption of the worker by sector, the number of workers by residential place in 2035 is estimated. Most of the workers are engaged in tertiary activities for 82%, followed by secondary sectors with 16% and primary sectors with 2%. The tertiary sector is distinguished in DKI Jakarta, Kabupaten Bogor, and

Kabupaten Bekasi. The primary sector has a large portion in Kabupaten Bogor, Kabupaten Bekasi, and Kabupaten Tangerang, while the secondary sector has a large portion in Kabupaten Bekasi and Kabupaten Tangerang. Further information about the number of workers in the future can be seen in the table below.

**Table 44 Future Number of Workers by Sector at Residential Place (Year 2035)**

	Primary		Secondary		Tertiary		Total	
	No. ('000)	%	No. ('000)	%	No. ('000)	%	No. ('000)	%
DKI Jakarta	22	0.5%	459	10.3%	3,954	89.2%	4,435	24.4%
Kota Tangerang	6	0.5%	246	19.5%	1,009	80.0%	1,262	6.9%
Kab. Tangerang	76	3.5%	605	27.7%	1,507	68.9%	2,187	12.0%
Kota Tangerang - Selatan	5	0.5%	66	6.2%	1,001	93.5%	1,071	5.9%
Kota Depok	12	0.8%	134	8.8%	1,372	90.4%	1,518	8.4%
Kota Bogor	7	1.4%	57	11.2%	443	87.4%	507	2.8%
Kab. Bogor	187	6.3%	486	16.3%	2,303	77.4%	2,976	16.4%
Kota Bekasi	10	0.6%	249	15.0%	1,398	84.4%	1,657	9.1%
Kab. Bekasi	119	4.6%	641	25.0%	1,801	70.4%	2,560	14.1%
Total	305	1.7%	2,896	15.9%	14,973	82.4%	18,174	100.0%

Source: JUTPI 2

According to the population structure, it is assumed that the workers at workplace are affected by regional industries' development plans. In the future, most of the workers in the cities will be worked in the tertiary sector and most proportion of workers for the secondary sector will shift to Kabupaten Bekasi that accounts for 50.3% share of the total sector in that regency.

**Table 45 Number of Workers at Workplace in 2035**

	Primary		Secondary		Tertiary		Total	
	No. ('000)	%	No. ('000)	%	No. ('000)	%	No. ('000)	%
DKI Jakarta	62	0.8%	790	10.4%	6,776	88.8%	7,628	39.4%
Kota Tangerang	6	0.4%	103	6.4%	1,487	93.1%	1,597	8.2%
Kab. Tangerang	13	0.6%	615	28.6%	1,523	70.8%	2,151	11.1%
Kota Tangerang - Selatan	17	3.9%	26	5.9%	398	90.2%	441	2.3%
Kota Depok	41	5.1%	96	12.0%	663	82.9%	800	4.1%
Kota Bogor	17	8.2%	56	27.1%	135	65.2%	207	1.1%
Kab. Bogor	65	3.2%	470	23.4%	1,477	73.4%	2,011	10.4%
Kota Bekasi	14	1.9%	63	8.7%	644	89.2%	722	3.7%
Kab. Bekasi	36	0.9%	1,913	50.3%	1,854	48.7%	3,804	19.6%
Total	273	1.4%	4,132	21.3%	14,956	77.2%	19,362	100.0%

Source: JUTPI 2

Areas traversed by good infrastructure have a fairly high worker distribution. Moreover,

several industrial estates in *Kabupaten* are labor-intensive locations that make the area dense with workers as illustrated in below pictures.

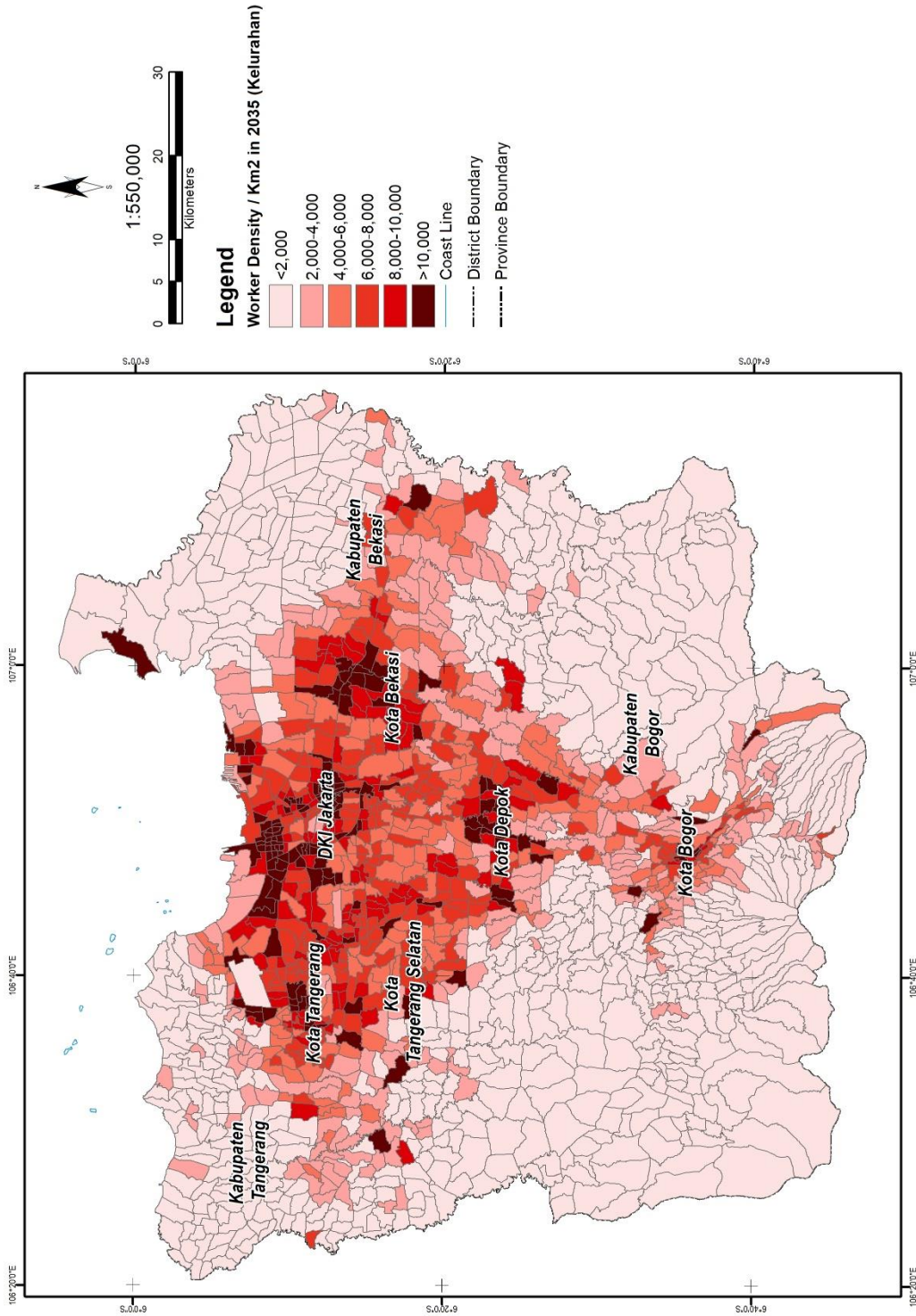
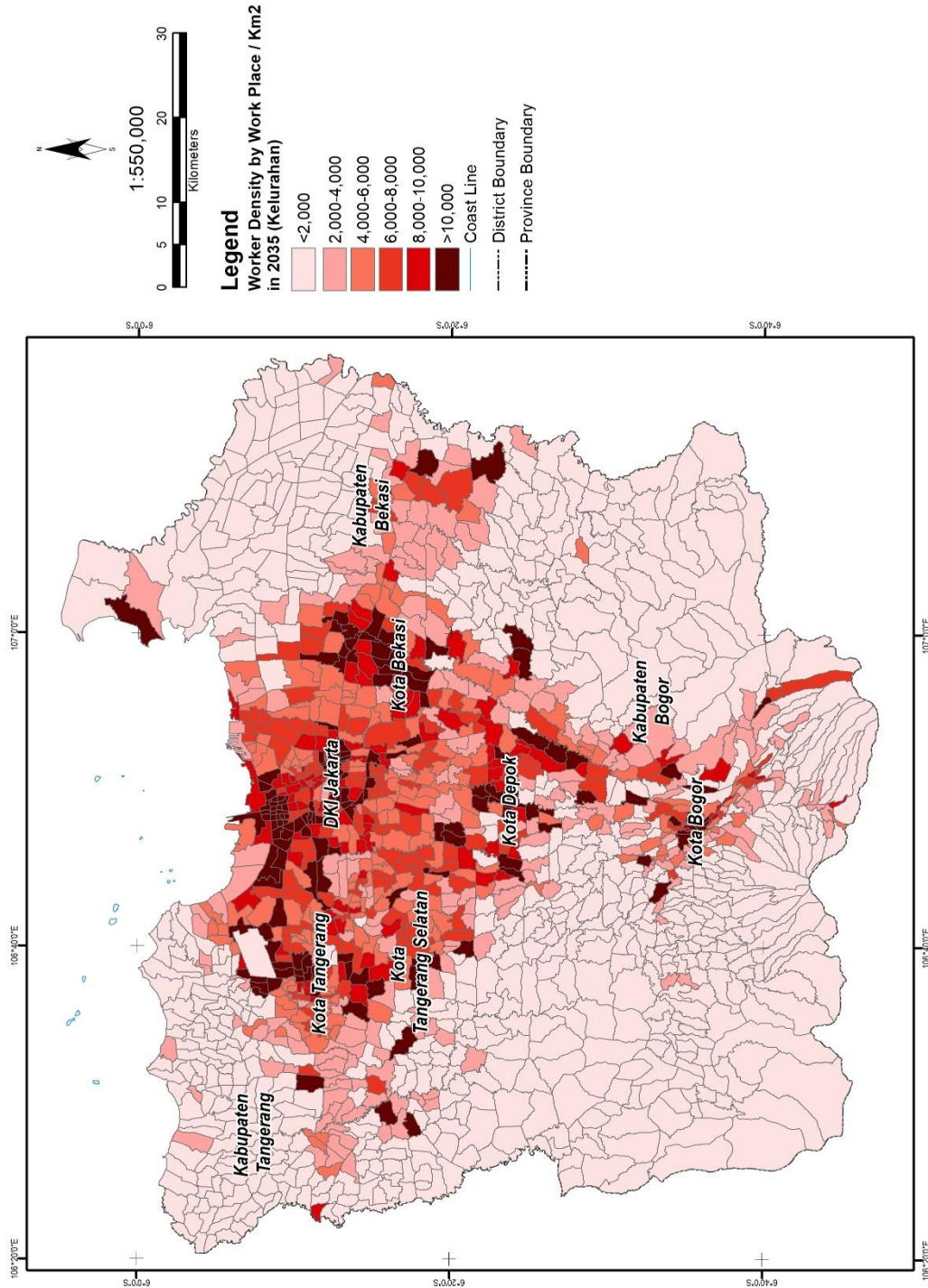


Figure 40 Workers Density Distribution by Kelurahan 2035

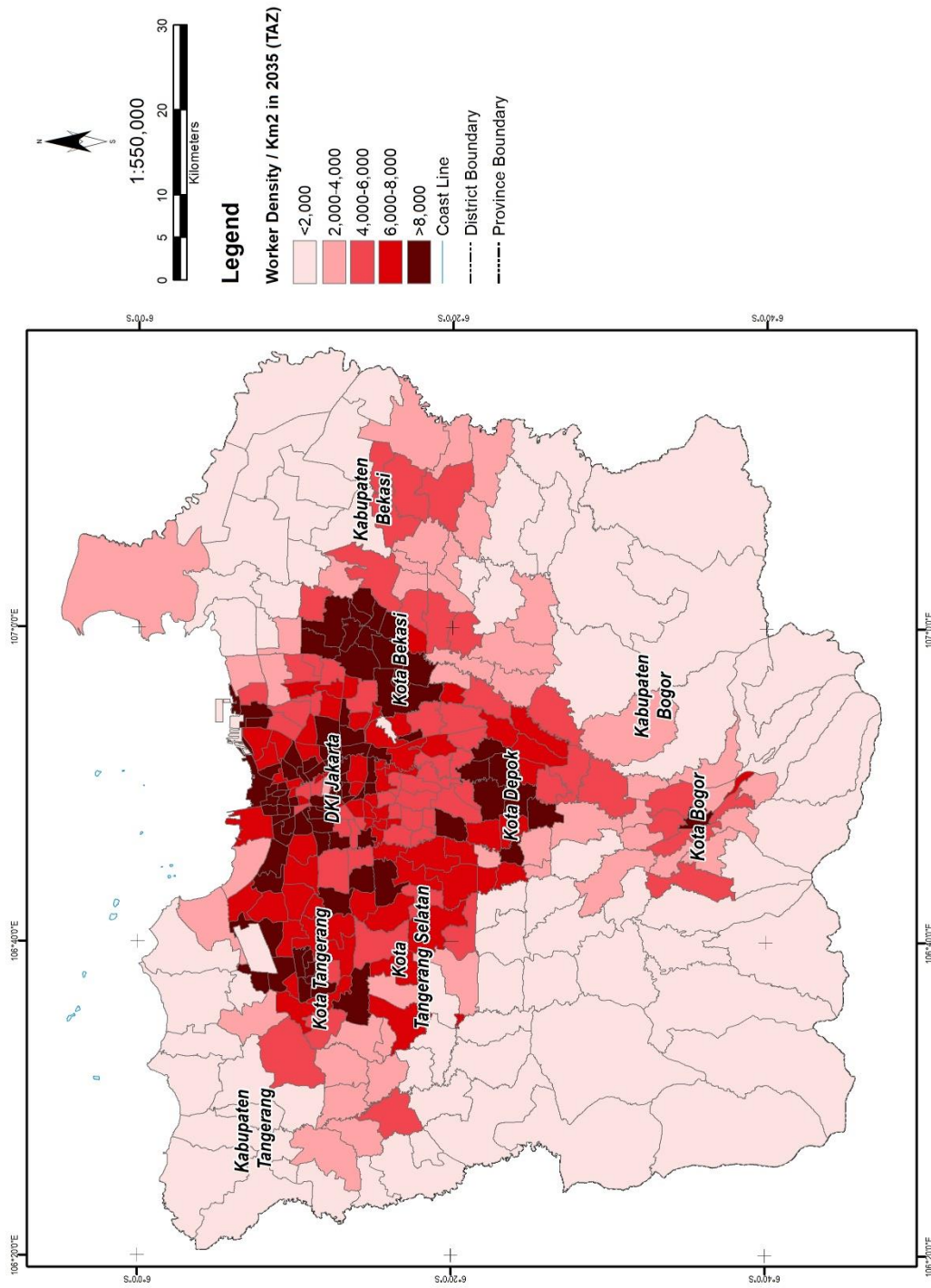
Source: JUTPI 2





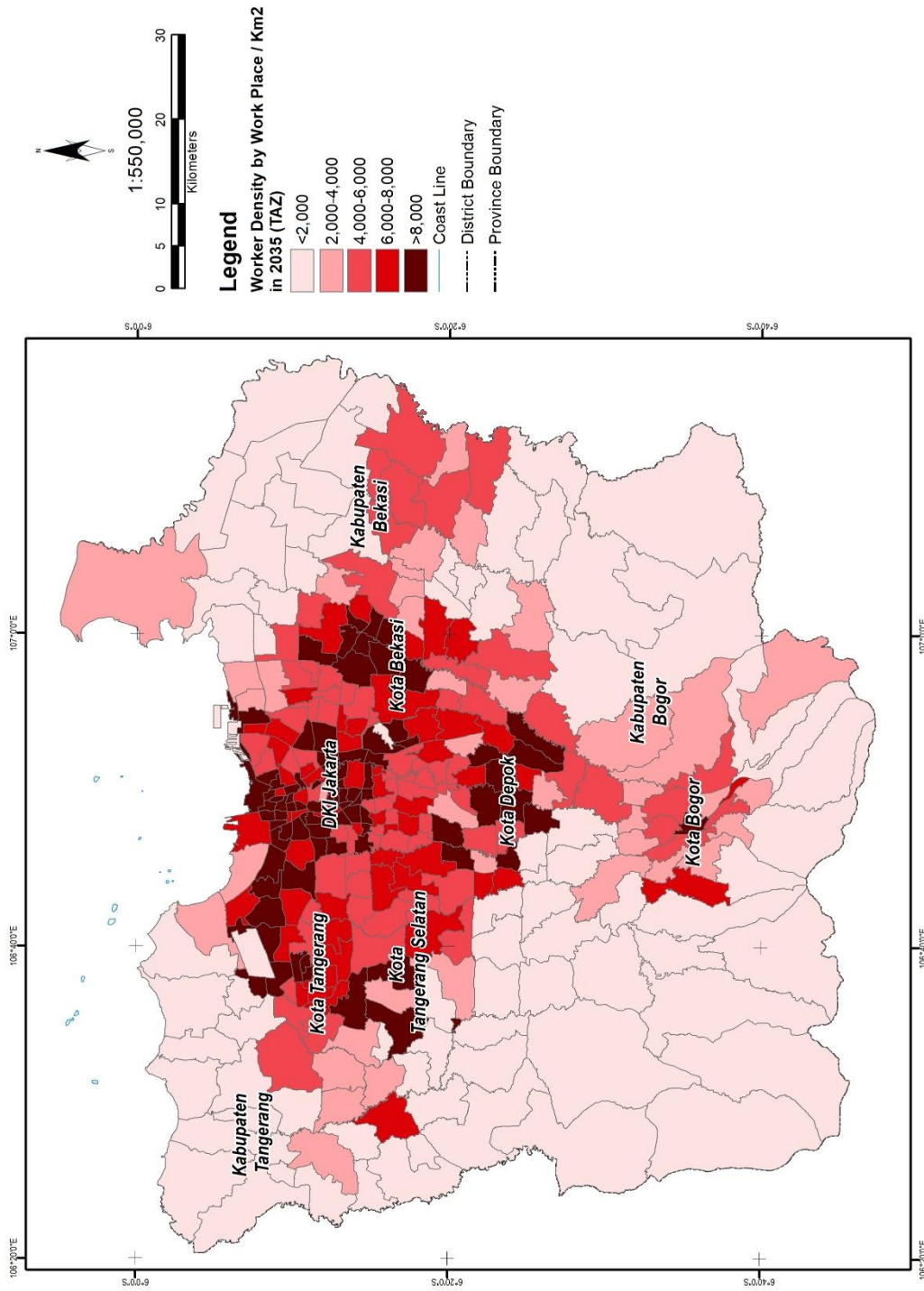
Source: JUTPI 2

Figure 41 Workers Density Distribution at Workplace by Kelurahan 2035



Source: JUTPI 2

**Figure 42 Workers Density Distribution at Residential Place by TAZ 2035**



Source: JUTPI 2  
**Figure 43 Workers Density Distribution at Workplace by TAZ 2035**

### 2.2.2 Students at Residential and School Place Projection

The number of students of the JABODETABEK area in the year 2035 is predicted at 10.2 million with the highest portion of distribution located in 3 *Kabupaten* areas, namely Kabupaten Bogor, Kabupaten Tangerang, and Kabupaten Bekasi. Both students by school place and school location are relatively almost similar in total students.

**Table 46 Future Estimation of Students Distribution**

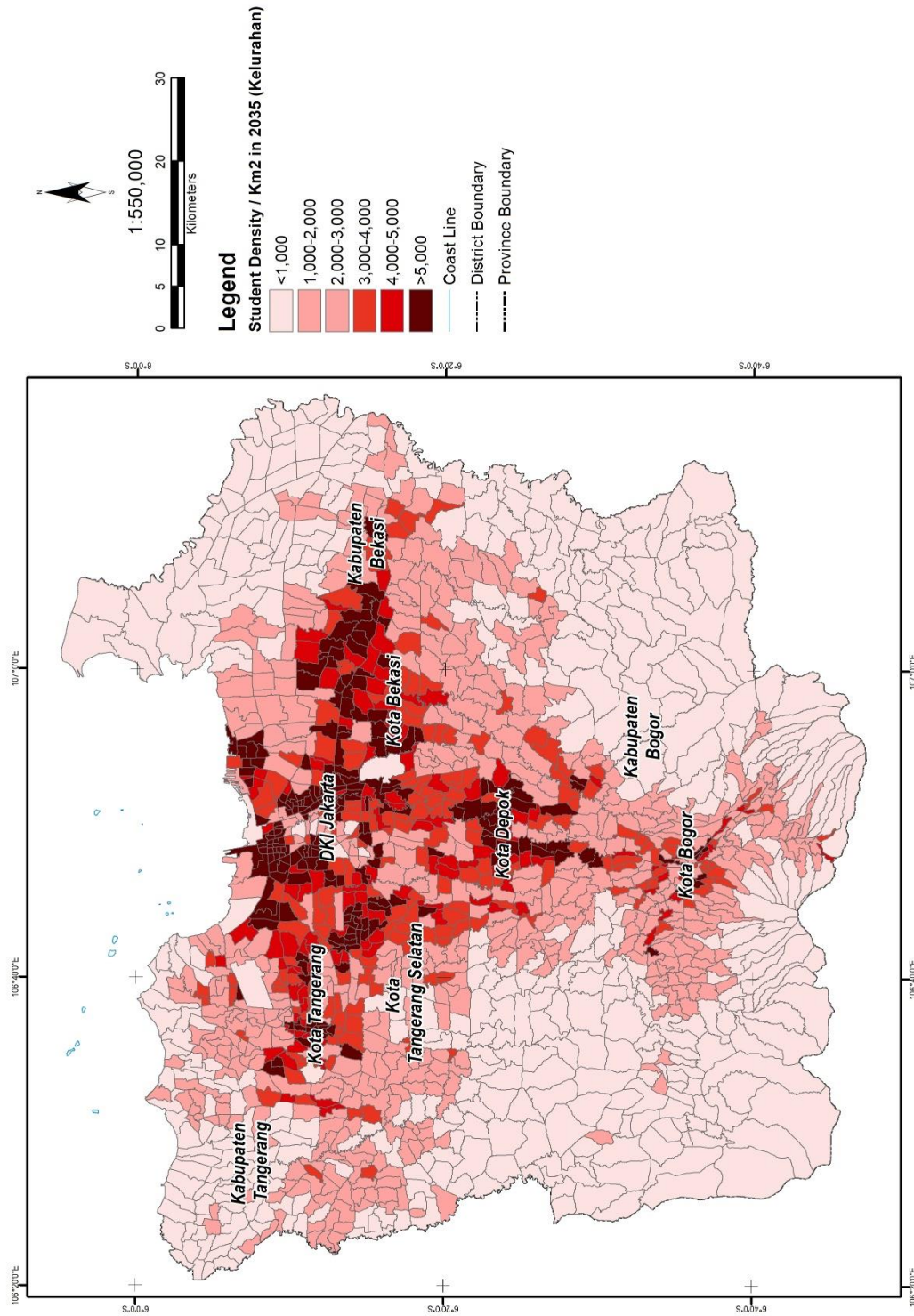
Unit: 1000 persons

Students	2035			
	School Place	%	Residential Place	%
Jakarta Selatan	475	5%	493	5%
Jakarta Timur	667	7%	652	6%
Jakarta Pusat	186	2%	182	2%
Jakarta Barat	627	6%	670	7%
Jakarta Utara	450	4%	440	4%
Kota Tangerang	609	6%	600	6%
Kabupaten Tangerang	1,361	13%	1,320	13%
Kota Tangerang Selatan	611	6%	500	5%
Kota Depok	787	8%	805	8%
Kota Bogor	280	3%	287	3%
Kabupaten Bogor	1,912	19%	2,009	20%
Kota Bekasi	866	8%	884	9%
Kabupaten Bekasi	1,405	14%	1,420	14%
Total	10,234	100%	10,263	100%

Source: JUTPI 2

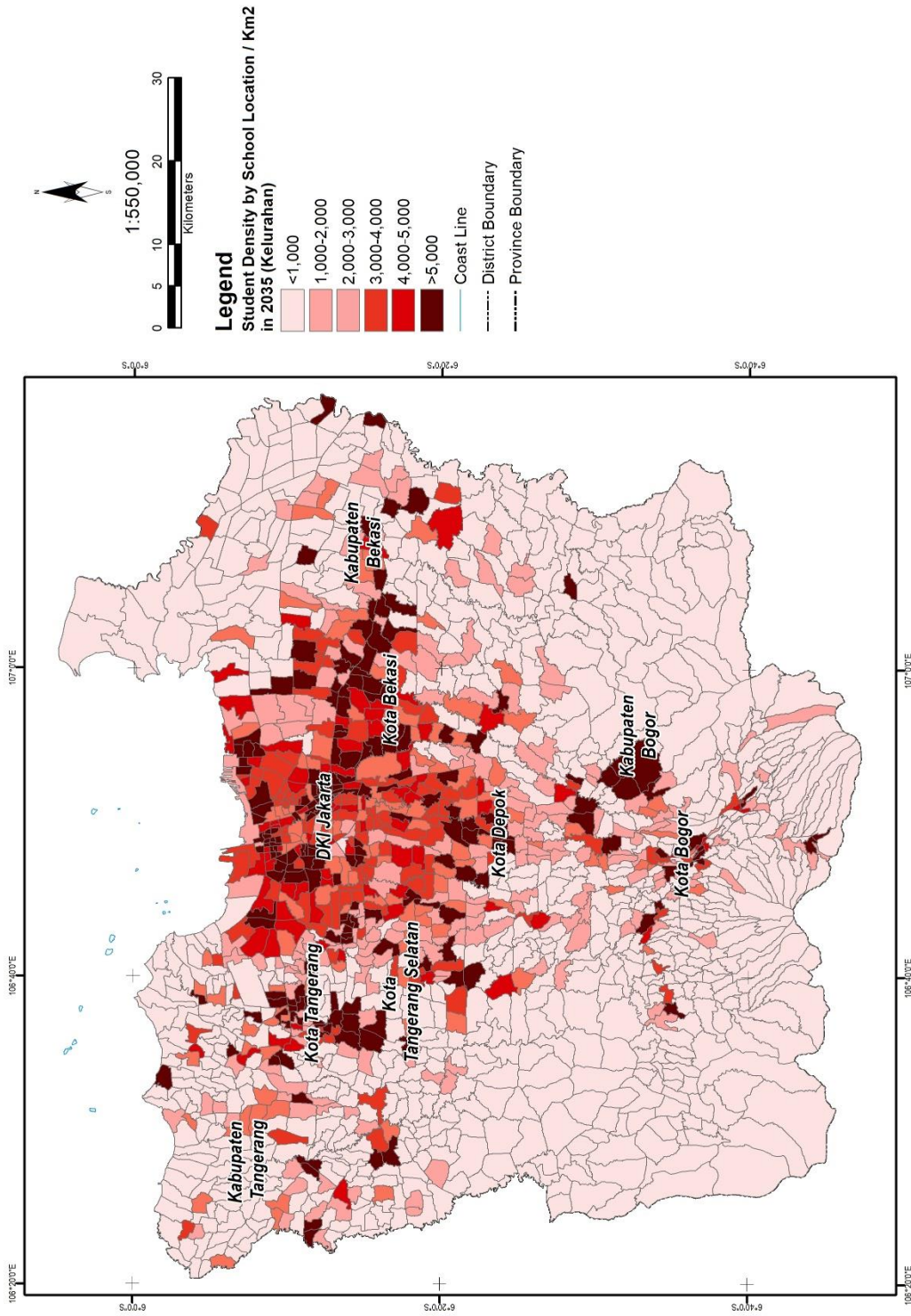
Students' density distribution is affected by the locations where adequate infrastructure exists such as road access or public transport, as seen in Figure 44 and Figure 45.

Moreover, certain locations such as Kota Bekasi and Jakarta Barat have a dense student number. In some locations in the *Kabupaten* area, the number of students looks dense due to the population in that area.



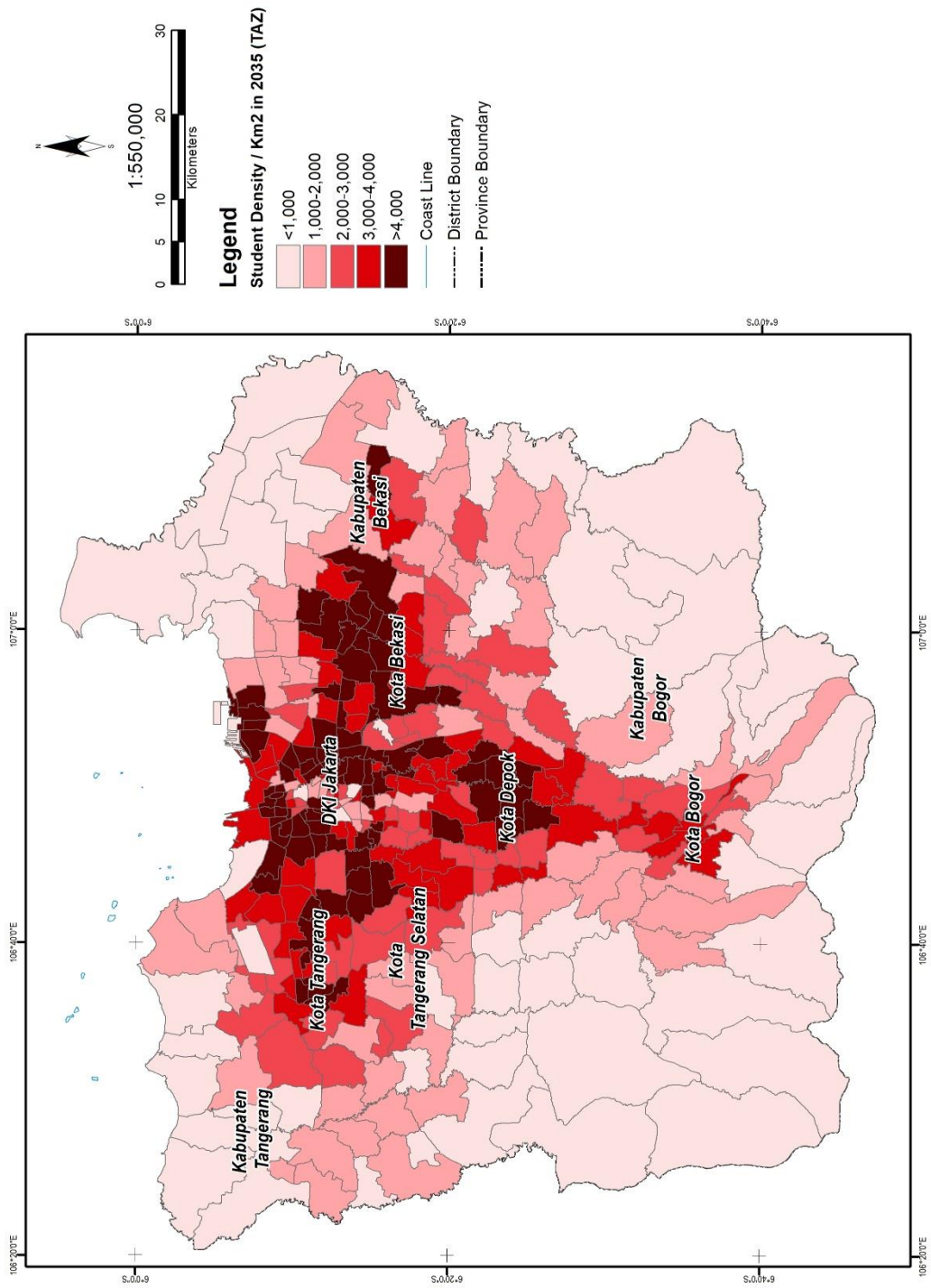
Source: JUTPI 2

Figure 44 Students Density Distribution at Residential Place by Kelurahan 2035

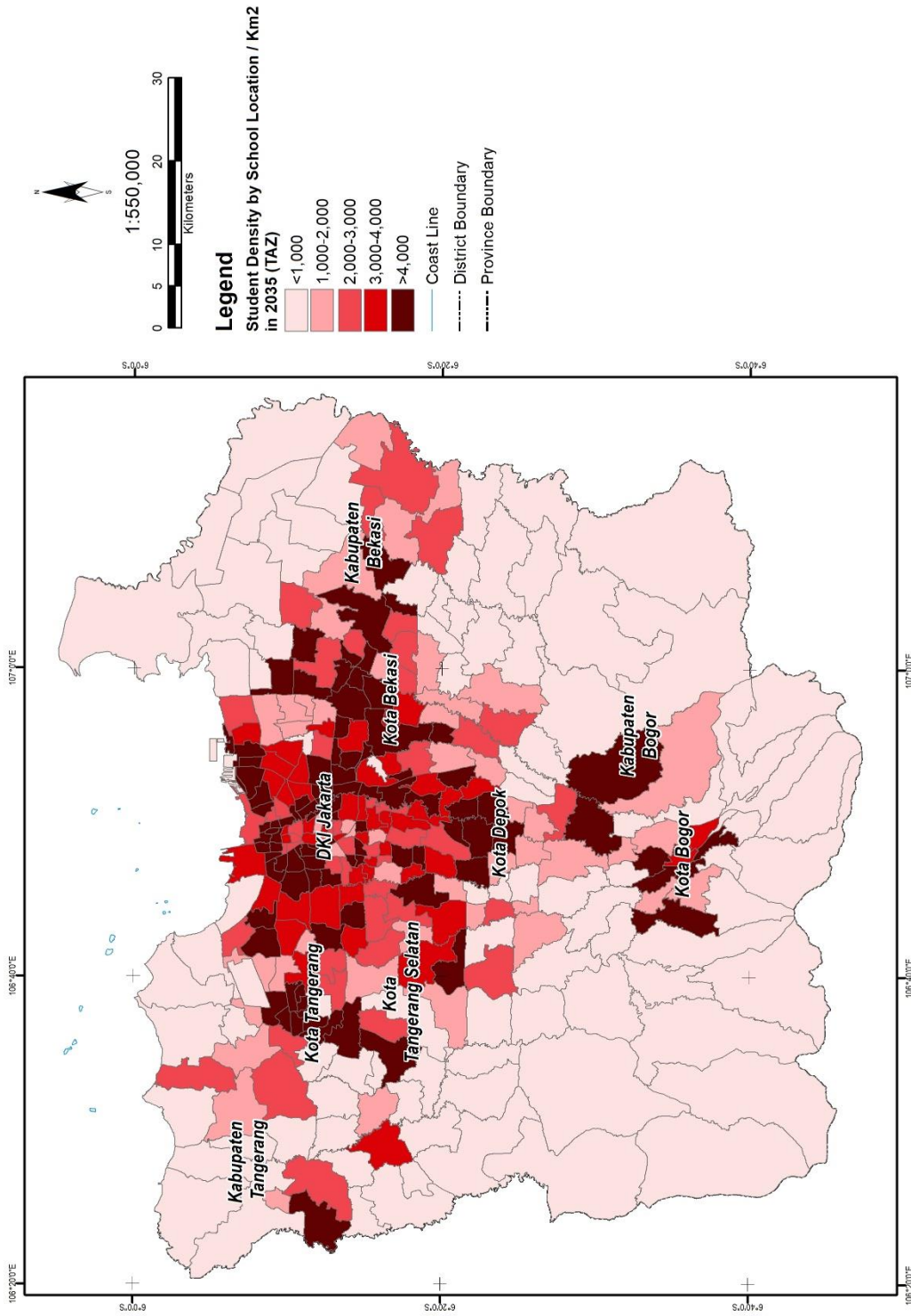


Source: JUTPI 2

Figure 45 Students Density Distribution at School Locations by Kelurahan 2035



Source: JUTPI 2  
**Figure 46 Students Density Distribution at Residential Place by TAZ 2035**



Source: JUTPI 2  
 Figure 47 Distribution of Students Density at School Locations by TAZ 2035



School enrollment will be further promoted in the age group of the 5-24-year-old segment of both males and females. Therefore, young inhabitants are forecasted. However, the number of students will account for 25.8%, with an increase of 1.9 points, between 2017 and 2035. The absolute number of students will remain almost the same, that is, 3 million in both 2017 and 2035.

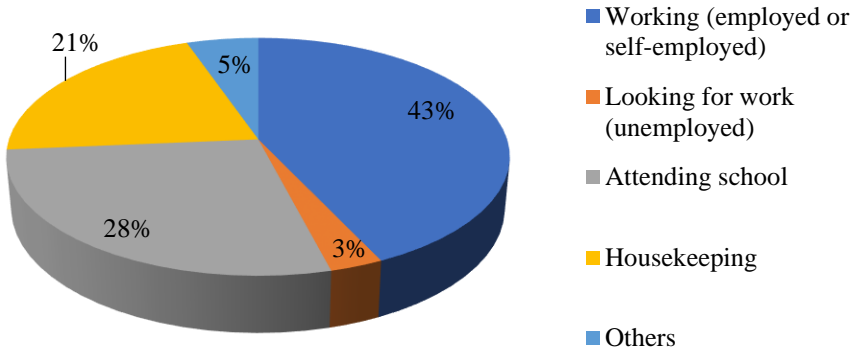
Other non-economically active populations such as students, housewives, and retirees will decrease its share from 56.0% in 2002 to 54.0% mainly due to the decrease of housewives and others (aged inhabitants). As a result, the labor force population share will slightly increase from 44.0% in 2017 to 46.0% in 2035. It is expected that the existing unemployment rate of 6.7% will be improved to 3.0% on the conditions of steady economic growth and moderate migration as shown in the table below.

**Table 47 Forecasted Socioeconomic Data of JABODETABEK Residents in 2017 and 2035**

Category	2017			2035		
	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)
Labor Force	64.4	23.0	44.0	66.5	26.2	46.0
Working (employed or self-employed)	56.3	17.7	37.3	62.1	23.3	43.0
Looking for work (unemployed)	8.1	5.2	6.7	4.4	3.0	3.0
Non-economically Active Population	35.6	77.0	56.0	34.9	73.8	54.0
Attending school	25.9	25.8	25.8	27.7	27.6	27.7
Housekeeping	0.4	47.2	23.5	0.1	42.8	21.1
Others	9.3	4.0	6.7	7.2	3.3	5.3

Source: JUTPI 2

Economic activity composition in 2035 can be illustrated in the following chart, where the working population (employed or self-employed) will dominate the economic types, followed by a group of attending school and housekeeping.



Source: JUTPI 2

**Figure 48 Types of Economic Activity in JABODETABEK Inhabitants in 2035**

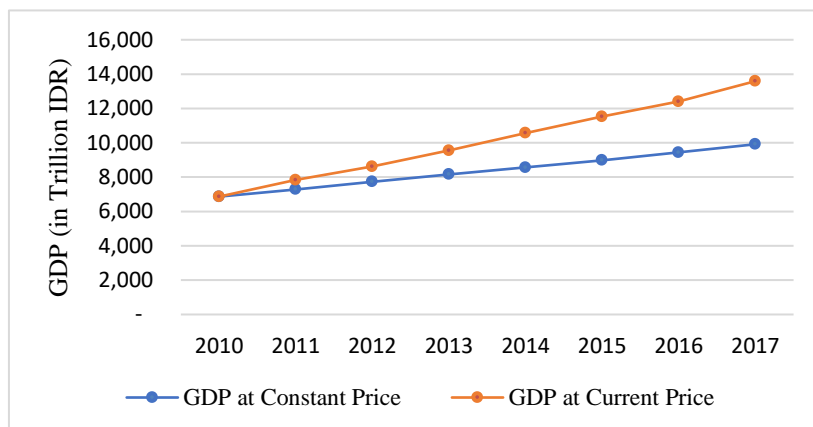
## Chapter 3 MACROECONOMIC FRAMEWORK

This chapter describes the macroeconomic framework in the study area consists of GDP and GRDP as well as the future economic projections. Future GRDP forecasts consider a number of influential factors, including future population growth and necessary levels of investment (fixed capital formation) to achieve certain levels of GDP growth. The regional population and GRDP forecasts are based on an assumed regional economic development scenario that will be elaborated later in the study.

### 3.1 Gross Domestic Product (GDP)

#### 3.1.1 Current GDP

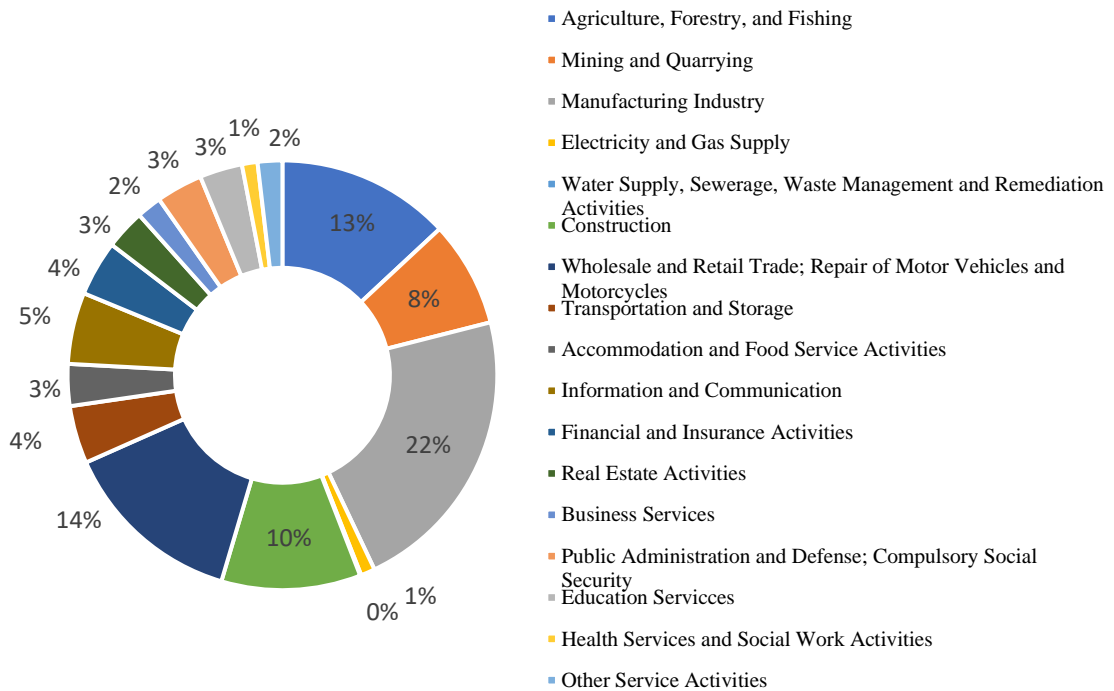
GDP of Indonesia as of 2017 at the current market price is IDR 13,587 trillion or approximately 958 billion USD in total (1 USD = IDR 14,182). At the 2010 constant market price, GDP in 2017 has reached IDR 9,913 trillion or grew 5.1% compared to the previous year. On average, GDP has been increased by 5.4% during 2010-2017.



Source: JUTPI 2 based on BPS data

**Figure 49 GDP of Indonesia Year 2010- 2018**

In the economic sector, the biggest share is contributed by manufacturing industry for 22%, followed by wholesale and retail trade (14%), agriculture, forestry, fishing (13%), and construction (10%), while the remaining sectors contributed less than 10% to the formation of GDP.

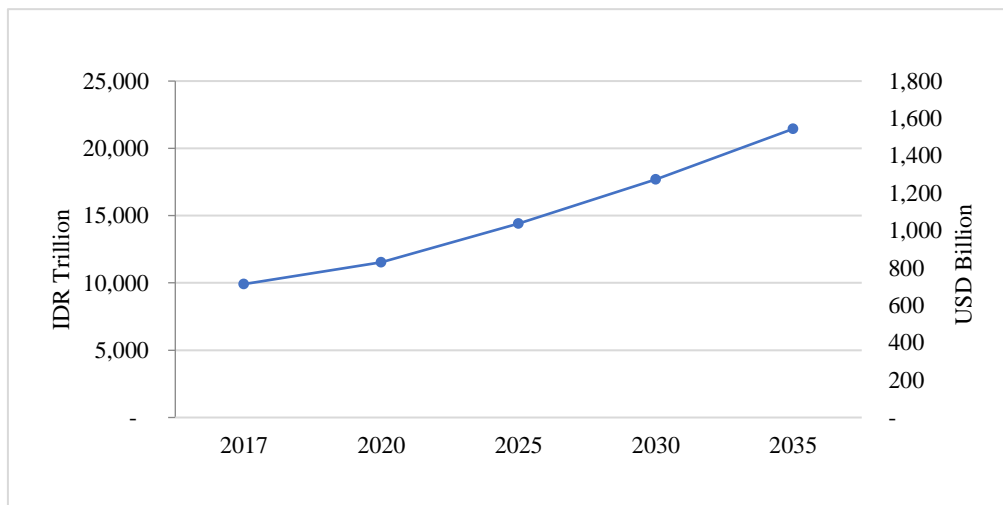


Source: JUTPI 2

**Figure 50 Share of Each Sector to Indonesian GDP as of 2017**

### 3.1.2 Future GDP

Future GDP is obtained from OECD data which projected the nation’s GDP based on the trend of GDP, assessment of the economic climate, and the world economy, using a combination of model-based analyses and measured at constant prices and Purchasing Power Parities (PPPs) of 2010. Projected GDP is calculated based on the assumption that the economy is in a good condition which generated by household spending and fixed capital investment with an interest rate of 4.25% and targeted to be controlled at 3.0 – 4.0%. After 2020, the growth rate is starting to slow down, and the country’s GDP will reach Rp. 21,447 trillion in 2035 as depicted in the following figure.



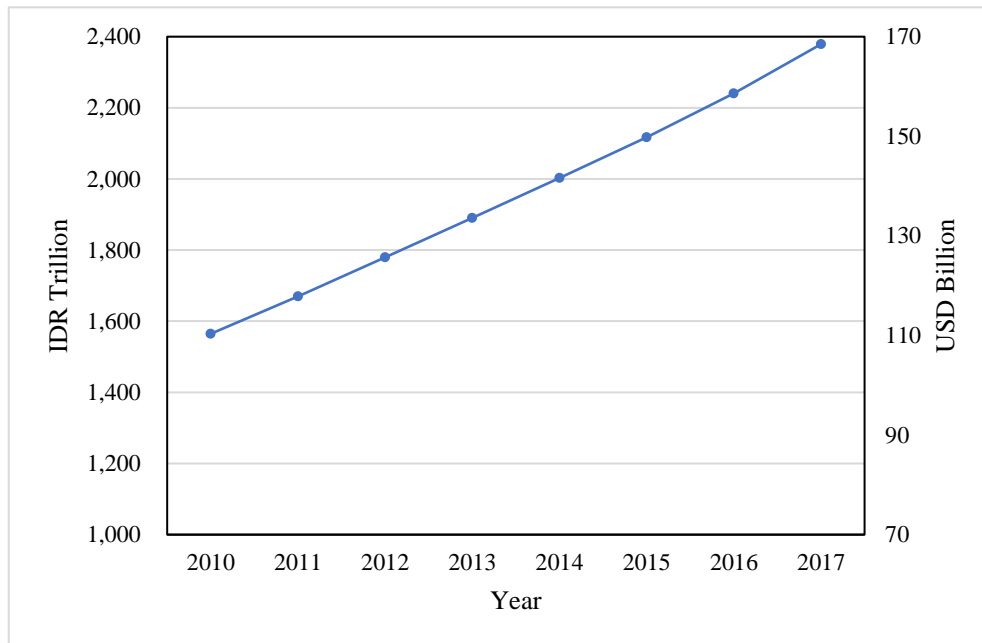
Source: OECD  
Note: 1 USD = IDR 14,182 (2019)

**Figure 51 Long-Term GDP Projection Year 2017 – 2035**

## 3.2 Gross Regional Domestic Product (GRDP)

### 3.2.1 Current GRDP

The most recently calculated Gross Regional Domestic Product (GRDP) was done in 2017 by BPS. Total GRDP of JABODETABEK at the current price in 2017 is IDR 3,412 trillion and IDR 2,379 trillion at 2010 constant price. GRDP has grown up gradually with an average growth rate of 6.17% from 2010 to 2017 and the largest increase occurred in 2011-2012 with a growth rate of 6.72%.



Source: JUTPI 2 based on BPS data

Note: 1 USD = IDR 14,182 (2019)

**Figure 52 JABODETABEK GRDP Year 2010 - 2017**

GRDP of JABODETABEK contributes to 25% of the total GDP of Indonesia. Within JABODETABEK, DKI Jakarta has the largest GRDP that valued at IDR 1,636 trillion followed by Kabupaten Bekasi (IDR 229 trillion), while Kota Bogor has the least amount of GRDP (IDR 29 trillion) in the year 2017 based on 2010 constant price as depicted in the following table.

**Table 48 GRDP at Constant Market Price by Kota/Kabupaten**

Unit: Trillion IDR/Billion USD

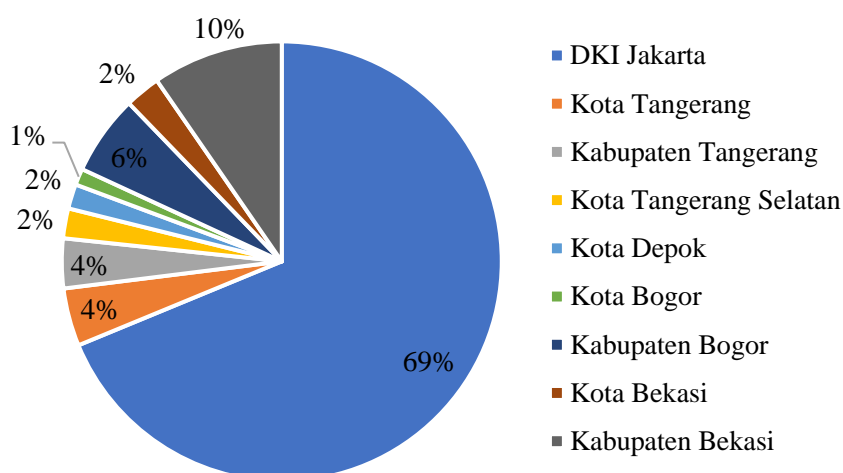
No	Kota/ Kabupaten	2010	2011	2012	2013	2014	2015	2016	2017
1	DKI Jakarta	1,075.2/ 75.8	1,147.6/ 80.9	1,222.5/ 86.2	1,297.2/ 91.5	1,374.3/ 96.9	1,454.1/ 102.5	1,539.4/ 108.5	1,635.9/ 115.3
2	Kabupaten Tangerang	58.1/ 4.1	62.0/ 4.4	65.8/ 4.6	70.1/ 4.9	73.8/ 5.2	77.8/ 5.5	81.9/ 5.8	86.9/ 6.1
3	Kota Tangerang	66.9/ 4.7	71.9/ 5.1	76.9/ 5.4	82.0/ 5.8	86.2/ 6.1	90.8/ 6.4	95.6/ 6.7	101.3/ 7.1
4	Kota Tangerang Selatan	30.5/ 2.2	33.2/ 2.3	36.1/ 2.5	39.3/ 2.8	42.4/ 3.0	45.5/ 3.2	48.6/ 3.4	52.2/ 3.7
5	Kota Bekasi	41.3/ 2.9	43.9/ 3.1	46.9/ 3.3	49.7/ 3.5	52.5/ 3.7	55.5/ 3.9	58.8/ 4.1	62.2/ 4.4

No	Kota/ Kabupaten	2010	2011	2012	2013	2014	2015	2016	2017
6	Kabupaten Bekasi	154.3/ 10.9	164.5/ 11.6	175.3/ 12.4	186.2/ 13.1	197.2/ 13.9	206.0/ 14.5	216.0/ 15.2	228.7/ 16.1
7	Kota Bogor	18.8/ 1.3	19.9/ 1.4	21.2/ 1.5	22.5/ 1.6	23.8/ 1.7	25.3/ 1.8	27.0/ 1.9	28.7/ 2.0
8	Kabupaten Bogor	92.9/ 6.6	98.4/ 6.9	104.3/ 7.4	110.7/ 7.8	117.3/ 8.3	124.5/ 8.8	132.4/ 9.3	140.0/ 9.9
9	Kota Depok	26.6/ 1.9	28.4/ 2.0	30.7/ 2.2	32.8/ 2.3	35.2/ 2.5	37.5/ 2.6	40.3/ 2.8	42.9/ 3.0
Total		1,565/ 110.3	1,670/ 117.7	1,780/ 125.5	1,890/ 133.3	2,003/ 141.2	2,117/ 149.3	2,240/ 157.9	2,379/ 167.7

Source: JUTPI 2 based on BPS data

Note: 1 USD = IDR 14,182 (2019)

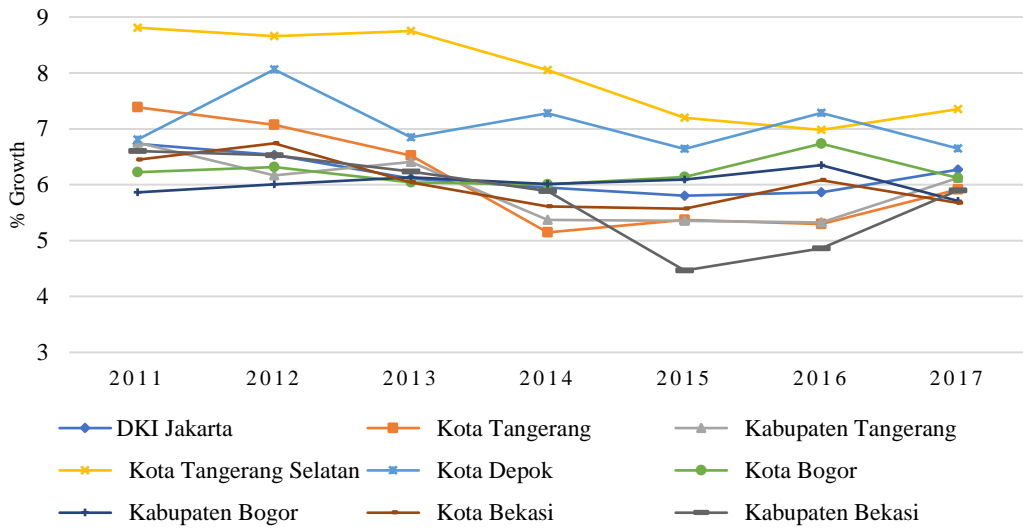
As the largest economy in Jabodetabek, DKI Jakarta takes 69% of total JABODETABEK GRDP, followed by Kabupaten Bekasi (10%) and Kabupaten Bogor (6%). The least share comes from Kota Bogor with 1% as illustrated in the following figure.



Source: JUTPI 2 based on BPS data

**Figure 53 Share of Each Kota and Kabupaten to JABODETABEK'S GRDP**

GRDP growth in each Kota/Kabupaten can be seen in Figure 54. In terms of economic growth, Kota Tangerang Selatan is the most growing region with the highest GRDP growth rate of all Kota/Kabupaten with an average of 7.97%, followed by Kota Depok and Kota Bogor.



Source: JUTPI 2 based on BPS data

**Figure 54 GRDP Growth Rate by Kota/Kabupaten**

All regencies, Kota Bekasi, Kota Depok, and Kota Tangerang have manufacture industry as their leading sector. Industrial sector growth in BODETABEK is more developed in areas with administrative levels of the city, and the impact of development in DKI Jakarta is more influential on the city’s administrative level.

DKI Jakarta and Kota Bogor have wholesale and retail as their main sector, and Kota Tangerang Selatan has real estate as its prominent sector. The tertiary sector especially information and communication and financial have profound contribution in some areas of BODETABEK of which development is higher than the trade sector. On the contrary, primary sectors like agriculture and mining have quite small contribution which mostly exists in regencies as shown in the table below.



**Table 49 GRDP by Sector in JABODETABEK as of 2017**

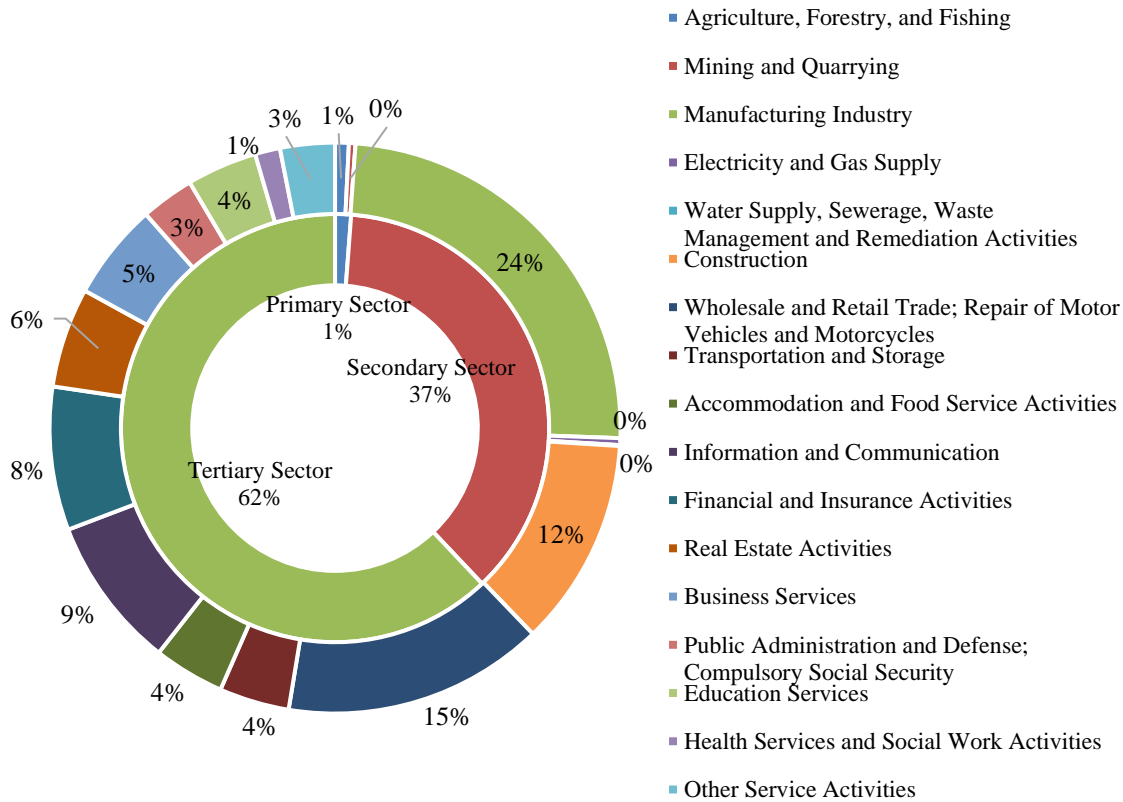
Unit: Trillion IDR/Billion USD

Industrial Origin	DKI Jakarta	Kota Bekasi	Kab. Bekasi	Kota Depok	Kota Bogor	Kab. Bogor	Kab. Tangerang	Kota Tangerang	Kota Tangerang Selatan	Total	Share (%)
Agriculture, Forestry, and Fishing	1.4/ 0.1	0.3/ 0.0	2.3/ 0.2	0.5/ 0.0	0.2/ 0.0	6.9/ 0.5	5.3/ 0.4	1.5/ 0.1	0.1/ 0.0	18.5/ 1.3	0.8
Mining and Quarrying	2.9/ 0.2	-	2.4/ 0.2	-	-	3.5/ 0.2	0.0/ 0.0	-	-	8.8/ 0.6	0.4
Manufacturing Industry	208.0/ 14.7	21.4/ 1.5	180.2/ 12.7	13.3/ 0.9	5.4/ 0.4	76.2/ 5.4	33.9/ 2.4	37.4/ 2.6	5.0/ 0.4	580.7/ 40.9	24.4
Electricity and Gas Supply	4.3/ 0.3	0.8/ 0.1	1.2/ 0.1	0.1/ 0.0	0.8/ 0.1	0.2/ 0.0	1.4/ 0.1	0.2/ 0.0	0.1/ 0.0	9.3/ 0.7	0.4
Water Supply, Sewerage, Waste Mngmt & Remediation Activities	0.7/ 0.0	0.1/ 0.0	0.1/ 0.0	0.0/ 0.0	0.0/ 0.0	0.2/ 0.0	0.1/ 0.0	0.1/ 0.0	0.0/ 0.0	1.2/ 0.1	0.1
Construction	209.0/ 14.7	7.0/ 0.5	14.7/ 1.0	8.7/ 0.6	3.2/ 0.2	13.1/ 0.9	10.9/ 0.8	7.3/ 0.5	7.0/ 0.5	281.0/ 19.8	11.8
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	259.3/ 18.3	14.3/ 1.0	13.2/ 0.9	9.2/ 0.6	6.3/ 0.4	17.8/ 1.3	9.9/ 0.7	12.9/ 0.9	8.8/ 0.6	351.8/ 24.8	14.8
Transportation and Storage	56.3/ 4.0	5.8/ 0.4	2.4/ 0.2	1.5/ 0.1	3.4/ 0.2	4.5/ 0.3	2.5/ 0.2	16.6/ 1.2	1.6/ 0.1	94.4/ 6.7	4.0
Accommodation and Food Service Activities	81.3/ 5.7	2.5/ 0.2	1.1/ 0.1	1.4/ 0.1	1.3/ 0.1	3.6/ 0.3	1.3/ 0.1	1.5/ 0.1	1.6/ 0.1	95.6/ 6.7	4.0
Information and Communication	173.5/ 12.2	1.7/ 0.1	2.7/ 0.2	1.1/ 0.1	1.9/ 0.1	3.6/ 0.3	4.4/ 0.3	7.9/ 0.6	8.3/ 0.6	205.1/ 14.5	8.6
Financial and Insurance Activities	177.3/ 12.5	1.8/ 0.1	2.0/ 0.1	1.7/ 0.1	2.0/ 0.1	0.7/ 0.1	4.3/ 0.3	2.8/ 0.2	0.6/ 0.0	193.2/ 13.6	8.1
Real Estate Activities	106.8/ 7.5	1.1/ 0.1	1.0/ 0.1	0.7/ 0.1	0.6/ 0.0	1.2/ 0.1	7.0/ 0.5	6.5/ 0.5	9.6/ 0.7	134.6/ 9.5	5.7
Business Services	125.1/ 8.8	0.3/ 0.0	0.3/ 0.0	0.1/ 0.0	0.6/ 0.0	0.3/ 0.0	0.8/ 0.1	1.0/ 0.1	1.8/ 0.1	130.3/ 9.2	5.5
Public Administration and Defense; Compulsory Social Security	63.1/ 4.4	1.1/ 0.1	1.4/ 0.1	1.0/ 0.1	0.4/ 0.0	2.1/ 0.2	1.2/ 0.1	1.1/ 0.1	0.5/ 0.0	72.0/ 5.1	3.0
Education Services	78.8/ 5.6	1.4/ 0.1	2.0/ 0.1	1.2/ 0.1	0.7/ 0.0	2.8/ 0.2	2.0/ 0.1	2.2/ 0.2	3.8/ 0.3	94.8/ 6.7	4.0

Industrial Origin	DKI Jakarta	Kota Bekasi	Kab. Bekasi	Kota Depok	Kota Bogor	Kab. Bogor	Kab. Tangerang	Kota Tangerang	Kota Tangerang Selatan	Total	Share (%)
Health Services and Social Work Activities	27.0/ 1.9	0.7/ 0,1	0.5/ 0.0	0.5/ 0.0	0.8/ 0.1	0.8/ 0.1	0.4/ 0.0	0.9/ 0.1	2.1/ 0.1	33.8/ 2.4	1.4
Other Service Activities	61.1/ 4.3	1.8/ 0,1	1.3/ 0.1	1.7/ 0.1	1.0/ 0.1	2.6/ 0.2	1.2/ 0.1	1.3/ 0.1	1.4/ 0.1	73.6/ 5.2	3.1
Total	1,635.9/ 115.3	62.2/ 4.4	228.7/ 16.1	42.9/ 3.0	28.7/ 2.0	140.0/ 9.9	86.9/ 6.1	101.3/ 7.1	52.2/ 3.7	2,378. 7/ 167.7	100.0

Source: JUTPI 2 based on BPS data

The biggest contributor for JABODETABEK economy is manufacturing industry which gives 24% share to the region economy, followed by wholesale and retail (15%) and construction (12%) in 2017, as presented in Figure 55. Other sectors that have large shares are service sectors especially financial and information and communication sector. On the contrary, primary sector (agriculture and mining) has a small share of only 1%.



Source: JUTPI 2 based on BPS data

**Figure 55 Economic Structure of JABODETABEK in 2017**

Average GRDP per capita of JABODETABEK in 2017 is IDR 71.80 million. DKI Jakarta has the highest GRDP per capita with IDR 158 million, followed by Kabupaten Bekasi and Kota Tangerang. DKI Jakarta has more than double GRDP per capita of Kabupaten Bekasi and almost 10 times larger than Kota Depok as presented in the following table.

**Table 50 GRDP Per Capita of JABODETABEK Area in 2017**

No	Region	GRDP Per Capita (in million IDR)	GRDP Per Capita (in USD)
1	DKI Jakarta	158.0	11,144
2	Kota Tangerang	47.3	3,337
3	Kabupaten Tangerang	24.2	1,710
4	Kota Tangerang Selatan	31.7	2,238
5	Kota Depok	19.0	1,343
6	Kota Bogor	26.5	1,869
7	Kabupaten Bogor	24.5	1,727
8	Kota Bekasi	21.7	1,533
9	Kabupaten Bekasi	65.3	4,608
10	JABODETABEK	71.8	5,063

Source: BPS, 2018

Note: 1 USD = IDR 14,182 (2019)

### 3.2.2 Future GRDP

JABODETABEK's economy has grown more rapidly compared to the national economy, which growth surpassed the national GDP with a 0.66% margin. Following the forecast of GDP, JUTPI 2 assumed that the GRDP growth rate of JABODETABEK will be stable around 5% for the couple years to come by considering the recent trend of GRDP.

**Table 51 Projected GRDP and GRDP Per Capita**

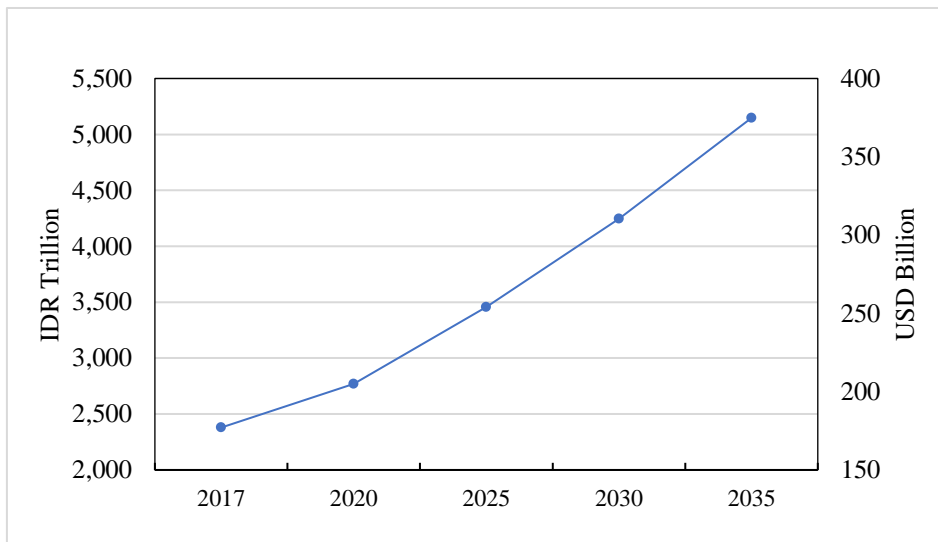
	Value at 2010 Constant Price				
	2017	2020	2025	2030	2035
GRDP (trillion IDR)	2,379	2,770	3,457	4,245	5,147
GRDP (billion USD)	168	195	244	299	363
Population (million persons)	33.1	35.3	38.8	42.1	45.3
GRDP Per Capita (million IDR)	71.8	84.5	105.5	129.5	157
GRDP Per Capita (USD)	5,063	5,958	7,439	9,131	11,070

Source: JUTPI 2

Note: 1 USD = IDR 14,182 (2019)

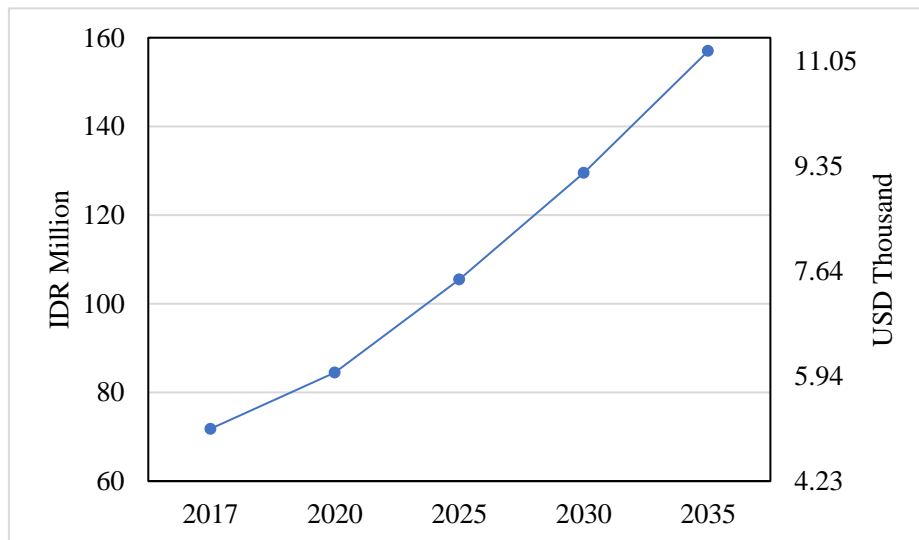
In the long-term, it is assumed that the economic growth period will be continued until the next 5 years before starting to slow down in the next few years. On the other hand, GRDP

and GRDP per capita projection will make a growth due to the completion of RITJ, some infrastructure projects, and improvement in the transportation system. As depicted in Figure 56, GRDP of JABODETABEK is predicted at IDR 5,147 trillion while GRDP per capita is projected at IDR 157 million as illustrated in Figure 56.



Source: JUTPI 2  
 Note: (2019) 1 USD = IDR 14,182

**Figure 56 GRDP Projection of JABODETABEK Year 2017 – 2035**



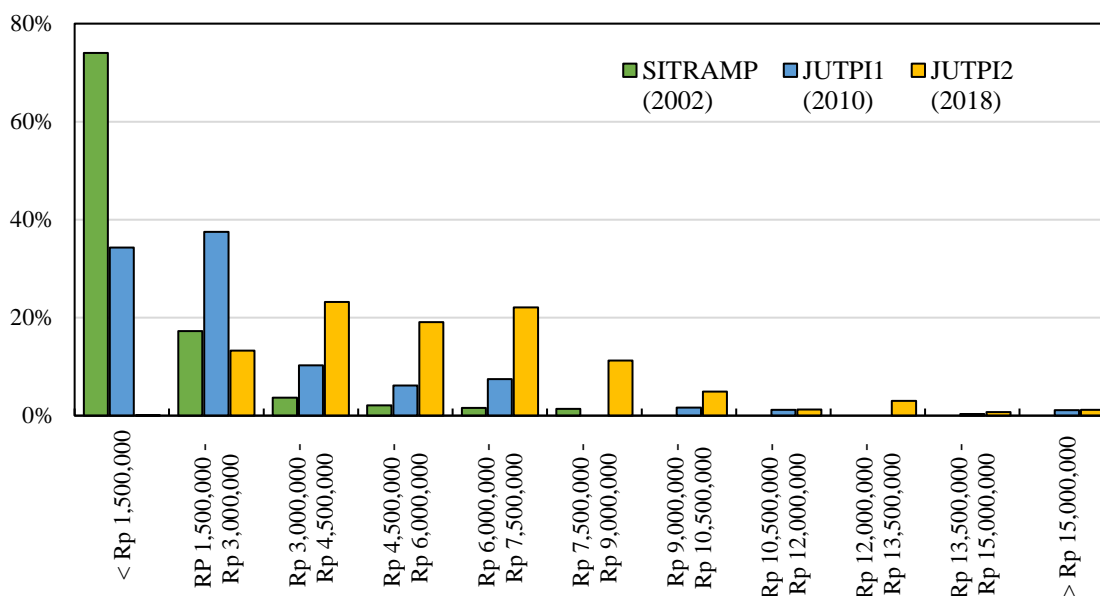
Source: JUTPI 2  
 Note: 1 USD = IDR 14,182 (2019)

**Figure 57 GRDP Per Capita Projection of JABODETABEK Year 2017 - 2035**

### 3.3 Household Income

To understand the characteristics of daily activity-travel from each respondent and to update socioeconomic data collected from the older large-scale Commuter Trip Survey (CTS) that was conducted in JUTPI 1 in 2010, the Activity-Travel Diary Survey was conducted in 2018. The data was obtained by collecting the comprehensive socioeconomic information of the household and one household member for each household in the study area.

Before JUTPI 1, Person Trip Survey was conducted in SITRAMP in 2002. By comparing the survey results of the Person Trip Survey, Commuter Trip Survey, and Activity-Travel Diary Survey which was conducted in this study, the change of household income can be illustrated in the following figure.



Source: JUTPI 2

**Figure 58 Changing of Household Income Distribution in JABODETABEK  
(Year of 2002, 2010, and 2018)**

The household income value is growing over the years and depicts the overall growth of economic conditions in JABODETABEK. In the early 2000s, most of the households' monthly income was less than IDR 3 million, and even more than 70% of households were within "less than IDR 1.5 million." In 2010, the highest share of households was within the range of "IDR 1.5 to 3 million" (37.5%) and is followed by 34% of households in "less than IDR 1.5 million." On the other hand, almost 90% of households in 2018 are fairly grouped in the income range of "IDR

1.5 – 9 million” and the largest share of 64% is in “IDR 3 to 7.5 million.

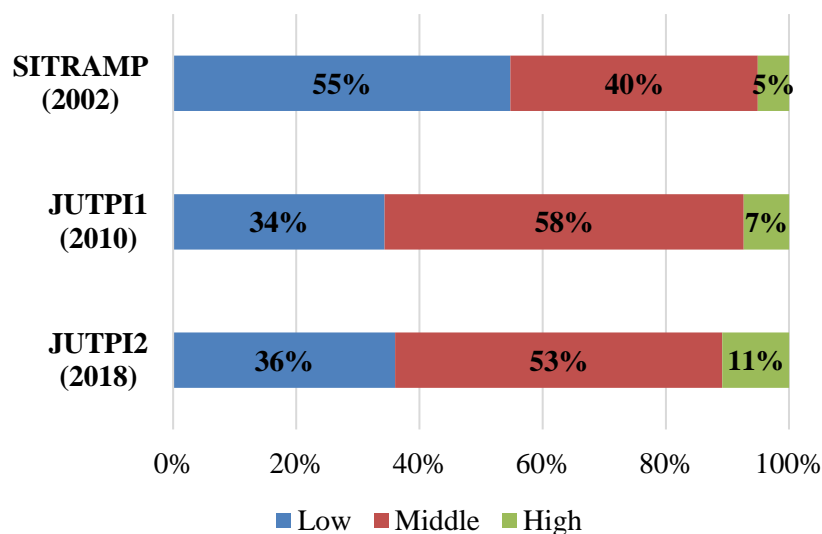
For further analysis, household income is classified into three income groups: low-, middle-, and high-income groups. The definition of income range has been adjusted by considering the income distribution of respondents in each survey period (SITRAMP, JUTPI 1, and JUTPI 2), the regional economic condition, and the Consumer Price Index (CPI) throughout the years. Below table shows the changing of household income group and average household income in the year of 2002, 2010, and 2018.

**Table 52 Changing Household Income Group (Year 2002, 2010, and 2018)**

<b>SITRAMP (2002) - Avg. Income: 1.30 Mill IDR/month -</b>	
INCOME GROUP:	
Low	: < Rp 1,000,000
Middle	: Rp 1,000,000 – Rp 4,000,000
High	: > Rp 4,000,000
<b>JUTPI 1 (2010) - Avg. Income: 2.75 Mill DR/month -</b>	
INCOME GROUP:	
Low	: < Rp 1,500,000
Middle	: Rp 1,500,000 – Rp 6,000,000
High	: > Rp 6,000,000
<b>JUTPI 2 (2018) - Avg. Income: 6.15 Mill IDR/month -</b>	
INCOME GROUP:	
Low	: < Rp 4,000,000
Middle	: Rp 4,000,000 – Rp 10,000,000
High	: > Rp 10,000,000

Source: JUTPI 2

Based on the above range, changing household compositions by income group can be calculated as shown in Figure 59. With an increase of average income over the years, high-income household share increases for more than double, from only 5% in 2002 to 11% in 2018. On the other hand, low-income household share decreases from 55% to 36% and middle-income household share increases from 40% in 2002 to 53% in 2018, as shown in the following figure.



Source: JUTPI 2

**Figure 59 Changing of Household Income Ratio (Year of 2002, 2010, and 2018)**

The household income ratio by *Kota/Kabupaten* shows that Kabupaten Bogor has the largest share of the low-income household while the proportion of middle-income households is the largest in Kabupaten Bekasi and Jakarta Selatan has the highest percentage of high-income household among others. The number of household income and its ratio can be seen in the table below.

**Table 53 Household Income Ratio by Kota/Kabupaten**

City	Low-Income		Middle-Income		High-Income		Total
	No. of HH ('000)	%	No. of HH ('000)	%	No. of HH ('000)	%	
Jakarta Selatan	190	27%	393	55%	130	18%	713
Jakarta Timur	280	30%	528	56%	135	14%	943
Jakarta Pusat	96	33%	157	55%	35	12%	288
Jakarta Barat	267	32%	477	56%	104	12%	848
Jakarta Utara	178	30%	319	54%	99	17%	596
Kabupaten Bogor	871	59%	570	39%	36	2%	1,477
Kabupaten Bekasi	321	36%	520	59%	46	5%	888
Kota Bogor	137	52%	113	43%	13	5%	263
Kota Bekasi	193	28%	401	58%	96	14%	690
Kota Depok	212	37%	313	55%	46	8%	571
Kab. Tangerang	317	38%	457	55%	53	6%	828
Kota Tangerang	211	36%	324	56%	47	8%	581

City	Low-Income		Middle-Income		High-Income		Total
	No. of HH ('000)	%	No. of HH ('000)	%	No. of HH ('000)	%	
Kota Tangerang Selatan	141	32%	230	52%	70	16%	441
Total	3,414	37%	4,802	53%	910	10%	9,126

Source: JUTPI 2