RESEARCH PAPER

How are the Estimation of Investment Index and Its Improvement Strategy?

Nasikh[a,*]

a. Faculty of Economics, Universitas Negeri Malang, East Java, Indonesia

Abstract
This study analyzes to describe and develop investments for small, medium, and large entrepreneurs and policymakers. There are 50 respondents (including experts in Investment Agency and Central Bureau of Statistics in Malang City, heads of sub-districts in Malang City, and businessmen in small, medium, and large-sized enterprises in Malang City). The research finding shows that the values of ICOR Lag 1 to Lag 3 are efficient. Therefore, the investment should be done in a long-term period. The potential areas for investment are located in three sub-districts in Malang City.
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JEL Classification: E22, E27, E37, F43.

Introduction

The regional development in the macroeconomy, the distribution development, and the allocation of interregional investment are integral parts of investment. A problem that emerges as a logical reaction of the regional development in the globalization era is regencies and cities struggling to appeal to investors (Meeks, 2017; Badarau and Popescu, 2014; Yamey et al., 2017; Baik, 2016; Rifai et al., 2017; Bank Indonesia, 2013; Rahmawaty, 2007; Nasikh, 2017a). The external and internal environmental developments become the direct and indirect influences on the economic condition in Malang City (Assaf, 2015; Nasikh, 2016; Nandari et al., 2017). Several external factors affect the economic condition in Malang City: (a) Strong global economic globalization and establishment of the regional economic zone that will lead to tighter competition in investment, trading, and tourism; (b) Limited expansion of fiscal and monetary policies that will affect the real sector activities; (c) Goods distribution which in turns influences the inflation rate; and (d) Finite state financial condition that affects the ability to fund regional developments.

Meanwhile, the internal factors are mostly affected by the economic growth due to many investments (Assaf, 2015; Nasikh, 2017b; Nandari et al., 2017; Hou et al., 2019; Fagereng et al., 2017). Regional investment is the main instrument to accelerate the economic growth in Malang City. Therefore, a comprehensive strategy is required to manage the investment potential. This comprehensive strategy becomes a basic consideration to advance the investment development in Malang City.

It is difficult to compare the regional investment indices since there has not been sufficient data about them (Assaf, 2015; Nandari et al., 2017; Iglesias, 2015; Hou et al., 2019). The regional government of Malang City is accountable to establish a good investment climate in

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*. Corresponding author email: nasikh.fe@um.ac.id

its city due to the time and competing changes in various aspects. To obtain the data of investment index in Malang City in 2019-2020, research should be done. This document configuration is proposed to present an idea about the stand of the Malang investment index as well as to give the insight to stimulate economic development in the future through the establishment of a multisectoral investment approach. This research aims at analyzing the regional investment index in Malang City and identifying strategies needed to improve the investment in Malang City.

There have been various definitions of the term "investment" regarding finance and the economy. It is defined as the number of assets that are predicted to gain forthcoming profits. According to (Badarau and Popescu, 2014; Arfiani and Ade, 2017; Bank Indonesia, 2015) "Investment is a capital investment of one asset or more in a long period with expected profit to gain in the future". According to economic premises, investment means purchasing (and production) of inconsumable capital goods that are used in the future production or production goods (Assaf, 2015; Nandari et al., 2017; Hou et al., 2019; Marinda et al., 2017).

There are several roles of investment for the regional development of Malang City:

a. The supply of capital; is an aspect that is needed to carry out a regional development. It is the most essential element in every business conduct. Therefore, the development process needs investment as the supply of capital.

b. Employment access; is a consequence of investment. The investment could boost the employment rate. The investment will increase activities and restore the real sectors that affect the employment rate positively.

c. Technology transfer; must exist as the effect of investment. Global or foreign investment is expected to be able to generate the technology transfer. It is helpful for human resources in Malang City in the future.

d. Source of initial regional income; it is the final objective of investment. The investment will increase the initial regional income in Malang City. It means that investment becomes a sector that can generate the initial regional income. The investment will create multi-effects in the economic development (Central Bureau of Statistics of East Java in Numbers 2020; Malang City in number 2020; Bank Indonesia, 2017; Natalia et al., 2014; Ishii, 2017).
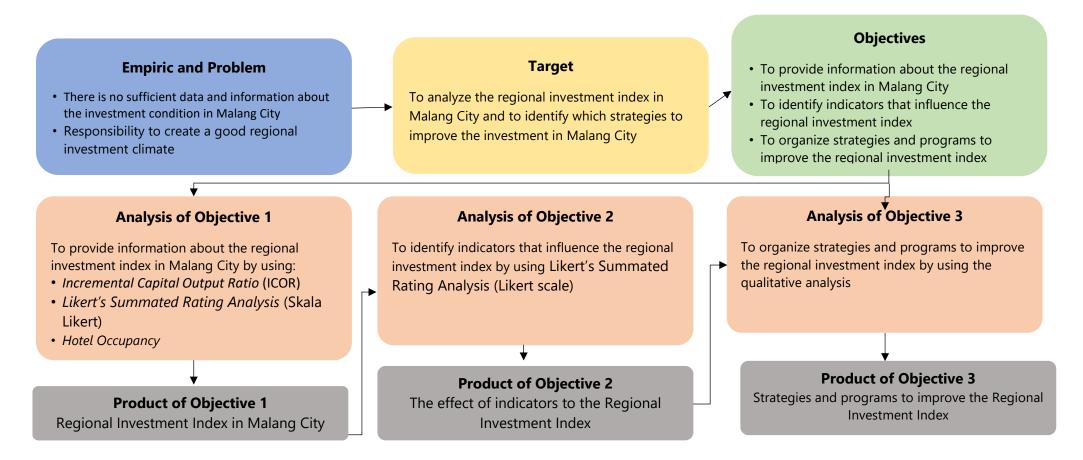
In order to appeal to local and foreign investors, a healthy business climate is required. Some studies show that several essential factors are influencing the business climate, including labor and productivity, regional economic, physical infrastructure, social and political conditions, and institutions (Parikh, 2019; Baik and Kim, 2014; Hou et al., 2019). Some indicators influencing a conducive investment climate include the regional infrastructure, access to land, business permit, transaction cost, capability and integrity of head of the region, safety, and the resolution of business conflict (Chang and Ho, 2014; Latifah, 2015; Broccardo et al., 2016; Caballero, 2015; Nasikh, 2013; Nasikh, 2014)

The regional infrastructure becomes the most powerful factor that appeals to investment (Parikh, 2019; Agoraki and Kouretas, 2019). Other than the factors mentioned above, the institutional factor is highlighted because a good institution leads to a more efficient, guaranteed, well-organized, and stable economic deal. In an article of (Huang et al., 2017; Gersbach and Rochet, 2017; Kaiser, 2020; Utami, 2013; Affandi, 2016; Cahyaningrum, 2017; Muliawati and Tatik, 2015) it is mentioned that illegal levy has to be paid by some business players when they deliver goods to other areas. It makes the cost burden increase and inhibits the investor's business conduct. Thus, it becomes the investor's concern before starting an investment. Therefore, we need to analyze the synthesis of factors affecting investment in a region. The synthesis of factors is displayed in Table 1 (Central Bureau of Statistics of East Java in Numbers, 2020; Gale and David, 2017; Iskandar and Iwan, 2014; Nandari et al., 2017; Reddy et al., 2017; Hirakata et al., 2015; Nasikh, 2018; Nasikh, 2017c).

Table 1. The Synthesis of Factors Affecting the Investment in a Region

Source	Factor	Unselected Factor	Selected Factor	Note	Synthesis of Factor
(Affandi, 2016; Chevalier and Darolles, 2019; Baik and Lee, 2019)	Regional infrastructure		Regional infrastructure		• Regional infrastucture • Access to land • Business permit • Transaction cost • The private business development program • Regional policy • Capacity and integrity of head of the region • Interaction of businessmen and regional government • Safety and resolution of business conflict • Institution • Cost of Bureaucracy Service • Workforce • The morality of Bureaucrats and Businessmen
	Access to land		Access to land		
	Business permit		Business permit		
	Transaction cost		Transaction cost		
	Private Business Development Program		Private Business Development Program		
	Regional policy		Regional policy		
	Capacity and Integrity of Head of Region		Capacity and Integrity of Head of Region		
	Interaction of Businessmen and Regional Government		Interaction of Businessmen and Regional Government		
	Safety and Resolution of Business Conflict		Safety and Resolution of Business Conflict		
(Affandi, 2016; Siu, 2020; Sha, 2020; Chatterjee et al., 2019)	Illegal Levy	Illegal levy		Represented by the transaction cost	
(Iskandar and Iwan, 2014; Agoraki and Kouretas, 2019)	Regional economics	Regional economics		Investment affects the increase or decrease of the regional economy, not the other way around	
	Workforce		Workforce		
	Institution		Institution		
	Physical infrastructure	Physical infrastructure		Represented by the regional infrastructure	
	Social and politics	Social and politics		Represented by Safety and Resolution of Business Conflict	
(Parikh, 2019; Hou et al., 2019; Baele et al., 2019; Kaiser, 2020)	Economic growth	Economic growth		Economic growth is caused by the investment climate, not the other way around	
	Cost of Bureaucracy Implementation		Cost of Bureaucracy Implementation		

Source	Factor	Unselected Factor	Selected Factor	Note	Synthesis of Factor
(Meyliana and Ade, 2017; Anginer et al., 2018)	Government policy	Government policy		Represented by the Regional Policy and Private Business Development Program	
	Institution		Institution		
	Safety breach	Safety breach		Represented by Safety and Resolution of Business Conflict	
	Community Safety and Stability	Community Safety and Stability		Represented by Safety and Resolution of Business Conflict	
	The morality of Bureaucracy and Businessmen		The morality of Bureaucracy and Businessmen		
	Fiscal and Monetary Policies	Fiscal and Monetary Policies		Represented by Regional Policy	
	Administration system	Administration system		Represented by Institution	

Figure 1. Displays the Framework of Study of Investment Index in Malang City
Source: Research finding.

Methodology and Data

There are two types of data utilized to evaluate ICOR. First, it is the data of Gross Regional Domestic Product (henceforth GRDP) based on the constant price in 2010. The second type is the Gross Fixed Capital Formation (henceforth GFCF). The economic growth is calculated by using GRDP according to the constant price in 2010.

To calculate the value of output used in the ICOR arrangement, the gross value added is utilized (the value of output still contains intermediate expenditure) because the increased value-added means the higher value of output. The value-added of GRDP that is calculated based on the constant price in 2010 becomes the basis to determine the value-added used to measure ICOR. The difference of output (value) added of every business in GRDP in year t deduced by the added value of the business in GRDP in year t-1 is the formula to measure the increased output of a business.

An analysis using the Likert scale utilizes the primary data in 2019-2020 that are obtained from the experts (the head of Investment Agency in Malang City, head of the division of Investment Agency in Malang City, the head of Central Bureau of Statistics in Malang City, and head of sub-districts (Kedungkandang, Blimbing, Klojen, Lowokwaru, and Sukun), and businessmen of small, medium, and large-sized enterprises in Malang City).

The data in this study are related to the factors determining the investment index in Malang City:

1. The regional infrastructure. It includes the data of road infrastructure, electricity network (PLN), telecommunication network (cable and cellular network), and clean water network (PDAM);
2. Access to land. It is related to the process and term of access to land for investment;
3. Business permit. It is about the process and term of business permit;
4. Transaction cost. It includes all costs in business conducts, such as tax, retribution, and donation;
5. Private Business Development Program. It is related to the programs conducted and planned by the regional government of Malang City to develop the private businesses;
6. Regional policy. It includes the regional policy that allows investment from juridical, substantial, and principal aspects.
7. Capacity and integrity of head of the region. It is related to his commitment to deal with investment;
8. Interaction between businessmen and regional government. It is about the interaction established by the regional government to businessmen, such as public consultation related to the business policy and access to communication and information;
9. Safety and resolution of business conflict. It is related to the stability of regional safety to investment and conflict resolution – such as the threat from a community organization, crime, and social conflict that can disturb the business activities;
10. Institution. It is related to how the institution organizes and increases investment;
11. Cost of Bureaucracy Service. It is related to the cost of bureaucracy service, including the cost of business permit and bureaucracy-related processes done regularly;
12. Workforce. It is about the easiness to obtain jobs, wages mechanism, and business protection, as well as a resolution to workforce problems;
13. The morality of Bureaucrats and Businessmen. It is related to the morality of bureaucrats and businessmen to protect them from loss, such as illegal levy, corruption, and other illegal conduct.

The approach that is used to calculate GFCF in each business combines three methods. First, it is the direct method. In this direct method, the investment value is directly generated from the data obtained from the government agency or institutions and business entities in

Malang City. The second method is a survey. The survey is done to identify the business sector or sub-sector and its investment. The data obtained from the survey is data of GFCF and output from business in a certain period. From the survey result, the ratio of GFCF to output is measured. Last, depreciation method. It explains the investment in each business field by using the depreciated value in the business field (Anginer et al., 2018; Steinmetz, 2015; Baik and Lee, 2019; Kiley and Jae, 2017; Su, 2015; Sha, 2020; Reddy et al., 2017).

It takes quite a long time to obtain the result (or effect) of the investment. *"Lag"* is a term used to refer to the waiting time to get feedback from the investment. In consideration of the lag, the ICOR value is gained by using a simple average. The equation to measure ICOR can be expanded to Equation (1) as follows:

1. ICOR in lag 0 (no lag)

$$ICOR_t^0 = \frac{1}{n}\sum_{t=t_1}^{t=t_2} = \frac{I_t}{Y_t - Y_{t-1}} \tag{1}$$

In which:

$$n = t_2 - (t_1 - 1)$$

It can be said that the same-year output will be achieved when the investment is made in year t (I_t). Thus, it does not require the time lag for the investment until it results in further output.

2. ICOR in lag 1

$$ICOR_t^1 = \frac{1}{n}\sum_{t=t_1}^{t=t_2} = \frac{I_t}{Y_{t+1} - Y_t} \tag{2}$$

In which:
$$n = t_2 - (t_1 - 1)$$
It means that the investment made in year t (I_t) will gain additional output in year t + 1. Therefore, a one-year lag is needed to gain further output.

3. ICOR in lag 2

$$ICOR_t^2 = \frac{1}{n}\sum_{t=t_1}^{t=t_2} = \frac{I_t}{Y_{t+2} - Y_{t+1}} \tag{3}$$

in which:

$$n = t_2 - (t_1 - 1)$$

It means that the investment made in year t (I_t) will generate additional output in year t + 2. As a consequence, it needs two years to obtain the additional output.

4.   ICOR in lag 3

$$ICOR_t^3 = \frac{1}{n}\sum_{t=t_1}^{t=t_2} = \frac{I_t}{Y_{t+3}-Y_{t+2}}$$ (4)

in which:

$n = t_2 - (t_1 - 1)$

It means that the investment made in year t (I_t) will generate additional output after three years (t + 3). As a consequence, it needs three years to obtain the additional output.

It takes a different length of time to generate output, so the calculation in a certain period represents the calculation of the ICOR coefficient. To determine the ICOR coefficient in a certain period, two methods can be applied.

a. Accumulation method. The increased output in a certain period is caused by the accumulation of investments at the same time. Mathematically, the equation is as follows.

$$ICOR = \frac{\sum I_t}{\sum (Y_{(t)}-Y_{(t-1)})}$$ (5)

with the existence of time lag, the equation is as follows:

$$ICOR = \frac{\sum I_t}{\sum (Y_{(t+s)}-Y_{(t+s-1)})}$$ (6)

in which s is lag.

b. Standard method. It is done by finding the ICOR coefficient in each year, then the average score is determined. Mathematically, the equation is as follows.

$$ICOR = \frac{1}{n}\sum \frac{I_t}{(Y_{(t)}-Y_{(t-1)})}$$ (7)

In which n is the number of ICOR coefficients
When using the time lag, the general equation is as follows.
$$ICOR = \frac{1}{n}\sum \frac{I_t}{(Y_{(t+s)}-Y_{(t+s-1)})}$$ (8)
In which n is the number of ICOR coefficients; s is lag.

When the economic growth rate in GRDP can be calculated or established and ICOR is unchanged, the investment estimation that follows the determined economic growth can be counted by Equation (8) above.

Analysis of Likert Scale

The Likert Scale is used to measure one's or group's behaviors, opinions, and perceptions towards a social phenomenon. When using the Likert Scale, the positive question is scored by 5, 4, 3, 2, and 1 whereas the negative question is scored by 1, 2, 3, 4, and 5 or -2, -1, 0, 1, and 2. Answers in the Likert Scale include strongly agree, agree, neither agree nor disagree, disagree and strongly disagree. Also, the answers for each item that uses the Likert Scale can have very positive and very negative gradations, such as very important, important, neutral, unimportant, and very unimportant.

Results and Discussion

Economic growth was a necessary factor that determines a city's quality. The compelling economic growth was an indicator to decide if a city was well-developed. There were some factors that we could refer to decide the regional economic growth rate. One of the main factors was the Gross Regional Domestic Product (henceforth GRDP). To identify the growth of other sectors in GRDP, see Table 2.

Table 2. Analysis of Economic Growth from 2014 to 2020

NO	SECTOR	YEARS						
		2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
1	Agriculture, Forestry, and Fishery	-0,94	1,86	2,23	0,08	-0,04	1,14	1,16
2	Mining and Digging	-4,04	-1,87	-3,58	-5,58	-0,35	0,84	0,87
3	Processing industry	1,93	2,81	2,51	1,95	3,67	5,17	5,18
4	Electricity and gas supplies	1,59	4,23	-0,01	4,73	3,84	6,39	6,36
5	Water supply, waste management, and recycle	8,24	3,09	3,71	4,92	7,02	6,13	6,16
6	Construction	8,69	8,84	5,18	6,74	7,24	5,75	5,79
7	Wholesale and retail, car and bike repairs	7,09	5,48	6,56	6,31	5,60	6,20	6,18
8	Transportation and warehousing	7,34	7,17	6,83	7,47	9,25	4,36	4,31
9	Supply of accommodation and food and beverage	8,01	10,46	8,12	7,89	8,34	5,71	5,66
10	Information and communication	11,96	8,14	8,14	9,09	8,02	6,48	6,59
11	Financial service and insurance	12,72	6,72	7,13	7,89	2,77	4,38	4,36
12	Real Estate	7,45	7,25	7,25	7,41	4,01	7,02	7,01
13	Company service	6,97	8,77	8,77	7,13	5,03	7,84	7,82
14	Government administration, Defense, and Social Security	0,82	0,11	3,72	1,71	3,24	4,46	4,49
15	Educational service	8,76	8,31	8,31	7,92	7,50	5,83	5,81
16	Health service and social activities	9,18	9,07	9,95	8,27	7,57	7,32	7,39
17	Other services	3,93	4,55	3,88	4,37	4,28	4,10	4,07

Source: Research finding.

ICOR of Malang City could be counted through four different periods. First, the investment in Malang City would generate output in the same year on which the investment was made. This approach was called Lag 0. When the output was generated in the next year after the capital was invested, it was called Lag 1. Next, it was Lag 2 if the output was generated after two years. The fourth period was when the investment generated output after the third year or Lag 3.

When the ICOR value was close to 0 (zero), an investment was deemed efficient.

a.   ICOR Lag 0
The equation (9) below was used to calculate ICOR Lag 0

$$ICOR = \frac{I_t}{Y_t - Y_{t-1}} \qquad\qquad (9)$$

I was the investment of year t, and Yt was the output of year t. Y t-1 was the output of a year before year t. Therefore, the value of ICOR Lag 0 of Malang City could be generated by using the equation of ICOR Lag 0.

The value of ICOR Lag 0 could be identified from 2015 to 2020. The value of ICOR Lag 0 in 2015 was 5.74. It meant that the number of investments that were needed is 5.74 times the expected GRDP. Table 3 shows the calculation of ICOR Lag 0.

Table 3. The Calculation of ICOR lag 0

Year	Y	GFCF	ICOR
2014	37,547,739,000		
2015	39,724,700,000	12,505,079,000	5.74
2016	41,952,126,000	13,456,211,000	6.04
2017	44,303,901,000	14,330,201,000	6.09
2018	46,824,750,000	15,226,797,000	6.04
2019	49,502,475,000	16,256,962,000	6.07
2020	49,499,969,000	16,255,881,000	6.07

Source: Research finding.

b.   ICOR Lag 1
The value of ICOR Lag 1 was calculated by using Equation (10) as follows.

$$ICOR = \frac{I_t}{Y_{t+1} - Y_t} \tag{10}$$

It was the investment in year t, Y t+1 was the output in a year after year t, and Yt was the output in year t. The calculation of forming a component of ICOR Lag1 can be displayed in Table 4.

Table 4. The Calculation of ICOR lag 1

Year	Y	GFCF	ICOR
2014	37,547,739,000	12,007,693,000	5.52
2015	39,724,700,000	12,505,079,000	5.61
2016	41,952,126,000	13,456,211,000	5.72
2017	44,303,901,000	14,330,201,000	5.68
2018	46,824,750,000	15,226,797,000	5.69
2019	49,502,475,000	16,256,962,000	5.69
2020	49,499,969,000	16,255,881,000	

Source: Research finding.

Due to the changing number of outputs and unexplained value of GFCF in 2021, the value of ICOR Lag 1 in 2020 could not be identified. The trend of ICOR Lag 1 in Malang City was varied despite its insignificance. Between 2014 and 2020, the value of ICOR Lag 1 of Malang City kept being fluctuating. If compared to ICOR Lag 0, ICOR Lag 1 showed better figures. It meant that the investment in Malang City could not be appreciated in the same year as the investment was made.

c.   ICOR Lag 2
The value of ICOR Lag 2 could be determined by using Equation (11) as follows.

$$ICOR = \frac{I_t}{Y_{t+2} - Y_t} \tag{11}$$

It was the investment in year t, Y t+2 was the output in the second year after year t, and Yt was the output in year t. The calculation of forming the component of ICOR Lag 2 is displayed in Table 5.

Table 5. The Calculation of ICOR Lag 2

Year	Y	PMTB	ICOR
2014	37,547,739,000	12,007,693,000	2.73
2015	39,724,700,000	12,505,079,000	2.73
2016	41,952,126,000	13,456,211,000	2.76
2017	44,303,901,000	14,330,201,000	2.76
2018	46,824,751,000	15,226,797,000	2.76
2019	49,502,475,000	16,256,962,000	
2020	49,499,969,000	16,255,881,000	

Source: Research finding.

The values of ICOR of Malang City from 2014 to 2017 increased. It could be said that the investment was more efficient than the values of ICOR Lag 0 and Lag 1. In 2014, the value of ICOR Lag 1 of Malang City was 2.73. Meanwhile the value of ICOR Lag 2 in 2015 and the year before it was the same. It was because the added value of GFCF was insignificant. In 2016 and 2017, the values of ICOR Lag 2 were 2.76. It meant that the value of ICOR Lag 2 weakened to 0.03 compared to 2015 and 2016. It reflected that Malang City needed more than one year of investment in order to achieve effective and efficient investment.

d. ICOR Lag 3

In order to highlight the idea that the longer investment term, the more efficient investment in Malang city, the calculation of ICOR Lag 3 was done. Refer to Equation (12) as follows.

$$ICOR = \frac{I_t}{Y_{t+3} - Y_t} \tag{12}$$

It was the value of an investment in year t, Y t+3 was the value of output in the next three years, and Yt was the value of output in year t. The calculation of forming the component of ICOR Lag 2 is displayed in Table 6.

Table 6. The Calculation of ICOR Lag 3

Year	Y	GFCF	ICOR
2014	37,547,739,000	12,007,693,000	1.78
2015	39,724,700,000	12,505,079,000	1.76
2016	41,952,126,000	13,456,211,000	1.78
2017	44,303,901,000	14,330,201,000	1.78
2018	46,824,751,000	15,226,797,000	
2019	49,502,475,000	16,256,962,000	
2020	49,499,969,000	16,255,881,000	

Source: Research finding.

The value of ICOR Lag 3 was displayed in Table 6. From 2014 to 2015, there was an insignificant improvement from 1.78 to 1.76. Whereas in 2016, the value of ICOR Lag 3 was similar to the value in 2014, which was 1.78. If comparing the values of ICOR Lag 0, 1, 2, and 3, ICOR Lag 3 was the smallest. It was efficient at 1.78. It showed that longer years were needed to establish a more efficient investment in Malang city.

To measure the perception, behavior, or opinion of 50 experts (including experts in Investment Agency and Central Bureau of Statistics in Malang City, heads of sub-districts in Malang City, and businessmen in small, medium, and large-sized enterprises in Malang City), there was a model that was applied. It was displayed as follows in equations (13) and (14).

$$Y = \alpha + \beta X1 + \beta X2 + \beta X3 + \beta X4 + \beta X5 + \beta X6 + \beta X7 + \beta X8 + \beta X9 + \beta X10 + \beta X11 + \beta X12 + \beta X13 + \beta X14 + \beta X15 + \beta X16 + \beta X17 + \beta X18 + \varepsilon \tag{13}$$

$$Y = 4{,}985 - 0{,}123 X1 - 0{,}275 X2 + 0{,}740 X3 - 1{,}428 X4 + 0{,}218 X5 - 0{,}720 X6 - 0{,}629 X7 - 0{,}141 X8 + 1{,}143 X9 - 0{,}138 X10 + 1{,}865 X11 + 1{,}183 X12 + 1{,}366 X13 + 0{,}407 X14 - 16{,}551 X15 + 5{,}767 X16 + 0{,}293 X17 - 0{,}678 X18 \tag{14}$$

The data have not met the requirement of the classical assumption test, but further analysis could be carried out. The coefficient of the independent variable showed an increase of Y if there was a one-unit escalation of the independent variable. The research finding showed that X4 (clean water), X7 (access to land), X15 (institution), and X16 (cost of bureaucracy service) affected the investment significantly. The value of R-square was 0.658. It meant that variable X (the affecting variable) could explain (affect) the value of Y as much as 65.8%. Meanwhile, the rest was explained outside the model.

The analysis of strategic issues was obtained from the analysis of factual condition that was compared to the issues discussed in the Middle-Term Development Planning of Malang City of 2018 – 2023 (Sengupta, 2016; Slivko and Theilen, 2014; Gale and David, 2017; Reswari and Ahim, 2010; Nasikh and Moeheriono, 2015; Chatterjee et al., 2019; Baele et al., 2019; Reddy et al., 2017; Herrmann et al., 2016; Siu, 2020).

In regards to the potential investment to be developed in Malang City, figure 2 below showed different sector-based investments.
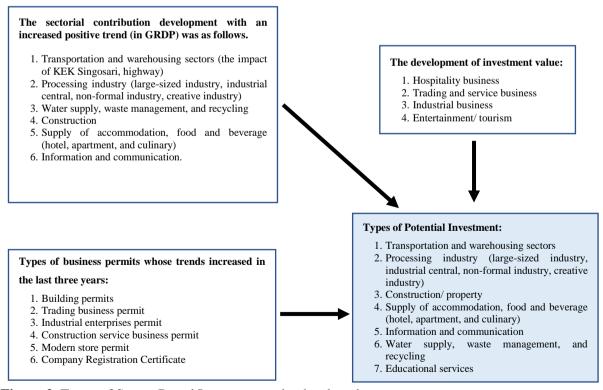

Figure 2. Types of Sector-Based Investment to be developed
Source: Kilroy, 2018; Law Number 21 Year, 2008; Clancy and Merola, 2017; Reddy et al., 2017; Hou et al., 2019; Herrmann et al., 2016; Chan et al., 2015; Victoria et al., 2017.

By noticing the development of spatial utilization in Malang City from 2010 to 2016 (the map of Regional Spatial Planning RTRW of Malang City in 2029), it was identified that the accumulation of spatial utilization tended to Lowokwaru, Blimbing, and Sukun sub-districts. In regards to the tendency, the access and mobility capacities became easier. Therefore, the big opportunity to develop the investment took place in Kedungkandang, Blimbing, and Lowokwaru sub-districts.
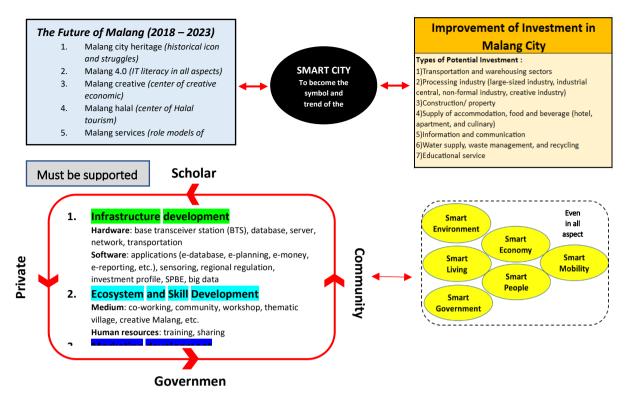
Strategies to Improve Investments in Malang City

The current investment index of Malang City was 6. The index was not an efficient investment because, to increase GDP (Gross Domestic Product) by 1%, the City needed 6% additional investment. Meanwhile, the value of ICOR was efficient. It was between 3% to 4%. It meant that to escalate GDP by 1%, the additional investment needed was 3% to 4%. Smaller ICOR indicated the efficiency in the investment process. Otherwise, the bigger ICOR reflected the higher investment efficiency.

The result analysis from the Likert Scale and Equations (13) and (14) obtained four direct factors that attracted investment in Malang City. They were clean water, access to land, institution, and cost of bureaucracy service. Their impact rate was quite high, as much as 65.8%. Meanwhile, other nine factors (business permit, transaction cost, private business development program, regional regulation, capacity and integrity of head of regions, the interaction between business actors and regional government, safety and resolution of business conflict, workforce, the morality of bureaucrats and businessmen) had to impact the rate of 34.2%.

To achieve the target, the decision-making and policy made by the regional government should be based on accurate information. Therefore, the policy is right on the target and it becomes the right solution without creating a new problem. By providing information about investment progress in Malang, the regional government of Malang is expected to be able to formulate new policies that can attract more investors to invest in Malang. More investment will affect economic conditions. It can open more job opportunities, require more labor, and reduce the open unemployment rate. It can also become the capital source for other progressing development.

Despite their high rate, the four direct factors above relied on the other nine factors, so strategies and development programs were required to improve the investment in Malang City. To identify the strategies and development programs, see Figure 3 below.

Malang has initiated the concept of Smart City as other cities. In this fast-paced era and advanced technology, urban and rural areas are demanded to follow the progress. The regional government of Malang also applies digitalization. Malang keeps developing its potential to be a smart city. Some communities of Malang city argue that Malang has been the smart city, but it is still not even close to one. The concept is being developed and the regional government of Malang will focus on developing a smart government in the first place.

Figure 3. The Concept of Investment Development Strategy in Malang City
Source: Putra, 2017; Law of the Republic of Indonesia, 1992; Kelly, 2011; Reddy et al., 2017; Chevalier and Ellison, 2017; Chevalier and Darolles, 2019; Cao et al., 2017.

Conclusion

The research finding shows that the value of ICOR Lag 0 of Malang City in 2020 is 6.07. It means that to increase the GDRP as expected, there should be 6 times higher GDRP. According to the period, the values of ICOR Lag 1 to Lag 3 show that the investment atmosphere in Malang City becomes more efficient. The values of ICOR Lag 1 to Lag 3 are lower than the value of ICOR Lag 0. It shows that the investment in Malang City can be efficient if it is directed to the long-term investment.

There are some potential investments to be developed in Malang City, including transportation and warehousing, processing industry (large-sized industry, industrial central, non-formal industry, and creative industry), construction/ property, educational service, information and communication, accommodation, food and beverage (hotel, apartment, and culinary), financial and insurance services, water supply, waste management, and recycling. The investment development takes place in Kedungkandang, Blimbing, and Lowokwaru sub-districts. Four significant factors attract the investors to invest in Malang City, including road, electricity, telecommunication, drainage structure, and waste infrastructures, business permit, transaction cost, private business development program, regional regulation, capacity and integrity of head of regions, interactions between businessmen and regional government, safety and resolution of business conflict, workforce, the morality of bureaucrats and businessmen.

Strategies to improve the investment in Malang City are developing modern and integrated transportation, improving and developing integrated roads, providing comfortable facilities (pedestrian, bike lane, street light, pavement, social and economic facilities, and etcetera) as well as implementing Smart City that is supported by the integrated IT infrastructure and ecosystem in various sectors.

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