

Comparative Study of the Regional Competitiveness of Semarang City and Surakarta City in Central Java Province

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Abstract: The study aims to analyze the comparison of the level of regional competitiveness in the Central Java province, the cause of differences in the level of regional competitiveness and regional potential to increase competitiveness in Semarang city and Surakarta city. The study was conducted in 2018. The research method used was descriptive qualitative with purposive sampling data collection method. The research results showed that the level of competitiveness of Semarang city included a high category with an index of 4,963, the highest value on the health pillar and the lowest value on the infrastructure pillar. While the level of competitiveness of Surakarta city is in the medium category with an index of 4,536, the highest value on the market size pillar and the lowest value on the infrastructure pillar. The determinants of regional competitiveness are seen from the enabling environment aspect, aspects of human resources, market aspects and aspects of the innovation ecosystem. Semarang city has a comparative advantage in terms of human resources while Surakarta city in aspects of the market. This comparative advantage can be used to accelerate regional development in order to improve regional competitiveness.

Keywords: competitive advantage; infrastructure; regional competitiveness

1 Introduction

Decentralization is an effort to increase economic growth in the regions. This condition opens the widest opportunity for regional governments to increase the prosperity of their people through innovation, increased transparency and accountability, as well as creating economic governance towards more competitive and highly competitive. The formation of competitiveness not only includes efforts to strengthen the synergy of various regional development sectors, but also includes structural improvements in the regional development system so that development can improve people's welfare more effectively and efficiently.

Local governments have an important role to direct the synergistic development between local governments and the private sector, therefore it is necessary to make concerted efforts in supporting regional independence. Regional independence can be achieved, among others, by increasing competitiveness, where competitiveness is not only oriented towards economic indicators, but it is broader meaning covering all efforts to manage the resources owned.

The challenges of economic globalization to be faced in the future are increasingly severe, which is characterized by borderless trade and industry. Competitiveness is the spearhead so that economic sectors can continue to grow and provide welfare for the community. Excellence, innovation, and anticipation are the three main keys in facing globalization. Excellence is related to quality, innovation is a strategic change made, and anticipation is how to deliver services according to its timing.

In the era of regional autonomy and fiscal decentralization, local governments have a large discretion in determining regional development policies. Local governments allocate their resources based on determined priorities. Facing competition going forward, local governments can take the initiative step by directing resources in an effort to increase competitiveness. The initial step needed is how to map the capabilities of the region owned (input factor) and what goals to be achieved (output factor). Next, determining priorities is the next step given the limited resources available.

Competitiveness is the ability of an area compared to other regions in determining the right strategy to improve people's welfare. Competitiveness is a complex interaction between the input factors (as the main factor forming the competitiveness) and output (the core of economic performance, ie improving people's welfare) in their respective regions.

Regional economic competitiveness aims to provide sustainable economic growth, namely developing leading sectors in accordance with the potential and needs of the area in order to improve people's welfare. In line with the implementation of regional autonomy and fiscal decentralization, the role of regional governments in pursuing regional competitiveness becomes very important and strategic.

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The role of regional governments in the implementation of regional autonomy includes (1) harmony, and (2) harmony. Harmonious in providing services and increasing the participation, initiatives and empowering people who pay attention to the interests and aspirations of the community. Harmonious in holding relations between levels of government, both between regions and between central and regional governments.

Regional autonomy and fiscal decentralization are very closely related to regional competitiveness, especially in terms of implementation of development. The development to be achieved is dynamic development for regional progress. Regions must find and recognize their potential to be developed through innovation and high productivity. Here the role of competitiveness is needed.

Increased competitiveness is done by setting central and regional government policies, strengthening institutions and governance, and building infrastructure. These three are mixed together to produce: (1) an increase in the productivity of the country/region on its economic scale; (2) innovation; (3) increasing transparency and accountability; and (4) improving the structure of the national/regional development system.

There is an important note from the statements of Martin & Tyler (2003) which provide arguments why an area must have competitiveness (competing): (1) for investment, attracting private foreign capital and public capital; (2) for the workforce, fostering skilled and creative workforce, creating a conducive environment and providing the domestic labor market; (3) for technology, attract innovation activities and transfer knowledge.

The study aims to analyze the comparison of the level of regional competitiveness in the province of Central Java, the causes of differences in the level of regional competitiveness and the potential of the region to increase competitiveness in the cities of Semarang and Surakarta.

The European Commission publishes the European Competitiveness Index (2013) on ranking competitiveness that measures, compares and examines competitiveness not only between countries, but also between regions in European Union countries.

The Institute for Management Development (IMD) also annually publishes The World Competitiveness Yearbook which presents the results of ranking and analysis of the country's ability to create and maintain its competitiveness.

The World Economic Forum (WEF) annually publishes a Global Competitiveness Report which illustrates the overall economic performance of countries in the world. In addition, the WEF also compiled the Global Competitiveness Index (GCI) as a measure of macroeconomic and microeconomic performance of a country's competitiveness.

Research the Center for Central Bank Education and Study (PPSK) in collaboration with the Research, Community Service and Economic Laboratory (LP3E) Laboratory of the Faculty of Economics, Padjajaran University (2007) was carried out to provide a profile and mapping of the economic competitiveness of regencies / cities in Indonesia in Indonesia. 2005. Portrait of regional competitiveness profile shows the relative position of one region to other regions by taking into account all the factors forming the competitiveness they have and how far the region can realize the potential of these factors.

The 2015 Indonesian Ministry of Finance study aims to: (1) find out the factors that shape regional competitiveness and local government perceptions of competitiveness strengthening strategies; (2) knowing the regional competitiveness index measured from the selected factors forming the regional competitiveness; (3) find out the dominant factors that influence regional competitiveness; (4) determine the role of regional budget expenditure function as a reinforcing factor for competitiveness.

2 Method

The data used in this study came from primary data and secondary data. Primary data is qualitative data obtained through discussion and exposure, while secondary data is quantitative data derived from data published by central and local government agencies.

The primary data collection method is through discussions with the Semarang and Surakarta municipal governments and the presentation of development results related to the regional competitiveness index indicators by the Semarang and Surakarta municipal governments as respondents with the target of the Regional Organization Organization (OPD), namely the Development Planning, Research Agency and Regional Development of Central Java Province. Regional competitiveness is seen from the aspects of reinforcement, aspects of human resources, aspects of the market and aspects of the innovation ecosystem, where each aspect has pillars, dimensions and indicators. The measurement of regional competitiveness index used is a measurement model developed by the Ministry of Technology and Higher Education Research in 2018. The components of the regional competitiveness indicators used in research are detailed as in table 1:

Table 1: Components of Regional Competitiveness Indicators

No	Aspect	Pillars	Dimension	Indicator
I	Enabling Environment	Institutional	Governance	4
			Security and Orderliness	1
		Infrastructure	Transportation Infrastructure	4
			Clean Water and Electricity	4
		Regional Economy	Infrastructure	
			Regional Finance	3
	Economic Stability	5		
	Amount I	3	6	21
II	Human Capital	Health	Health	2

No	Aspect	Pillars	Dimension	Indicator
		Education and Skills	Education	6
			Skill	4
	Amount II	2	3	12
III	Market	Product Market Efficiency	Domestic Competition	2
			Tax and Retribution	3
			Market Stability	2
		Employment	Employment	3
			Labor Capacity	3
		Access to Finance	Access to Finance	7
		Market Size	Market Size	3
	Amount III	4	7	23
IV	Innovation Ecosystem	Technology Readiness	Telematics	5
			Technology	1
		Business Dynamics	Regulation	5
			Entrepreneurship	5
		Innovation Capacity	Interaction and Diversity	5
			Research and Development	10
			Commercialization	3
	Amount IV	3	7	24
	Total Amount	12	23	90

Source: Ministry of Research Technology and Higher Education (2018)

The Regional Competitiveness Index component used consists of 4 aspects / factors, 12 pillars, 23 dimensions and 90 indicators/attributes/questionnaires. While the rating scale used for the measurement results of the regional competitiveness index there are 3 (three) criteria as in table 2.

Table 2: Scale of the Regional Competitiveness Index Measurement Results

Scale	Value criteria	Zone
0.01 – 2.33	Low	Red
2.34 – 4.67	Medium	Yellow
4.68 – 7.00	High	Green

The measurement model of the regional competitiveness index of the Ministry of Ristekdikti divides the scale of 0-7 into 3 zone ranges, namely: 1) Red Zone (range score: 0 - <2.340), 2) Yellow Zone (range score: 2.340 - <4,680) and 3) Zone Green (range score: <4,680 - 7,000).

3 Results and Discussions

3.1 General Description of Research Site

The results of the measurement of the regional competitiveness index of Semarang and Surakarta city in the Central Java Province, based on 2018 data from the website <https://indeks.inovasi.ristekdikti.go.id>. is as table 3.

Table 3: Semarang and Surakarta City Regional Competitiveness Index 2018

No	City	Index
1	Semarang	4,963
2	Surakarta	4,536

Source: Ministry of Research, Technology, and Higher Education (2018)

Based on an assessment conducted in October 2018, the value of the Semarang City's Regional Competitiveness Index (IDSD) is 4.963 in the green zone (4.68 - 7.00) included in the high category. While the value of the competitiveness index in the city of Surakarta is 4,536 including in the green zone area (4.68 – 7.00) with a high category.

Aspects / factors assessed in the regional competitiveness index are 1) aspects of reinforcement, 2) aspects of human resources, 3) aspects of markets and 4) aspects of innovation ecosystems. The regional competitiveness index of Semarang and Surakarta in 2018 based on aspects / factors is as shown in Table 4.

Table 4: The scores of the Semarang and Surakarta City Competitiveness Index Based on the Aspects/Factors of 2018

Aspect/Factor	Score	
	Semarang City	Surakarta City
Enabling Environment	4,681	3,486
Human Capital	5,208	4,583
Market	4,722	5,137
Innovation Environment	5,241	4,937

Source: Ministry of Research Technology and Higher Education (2018)

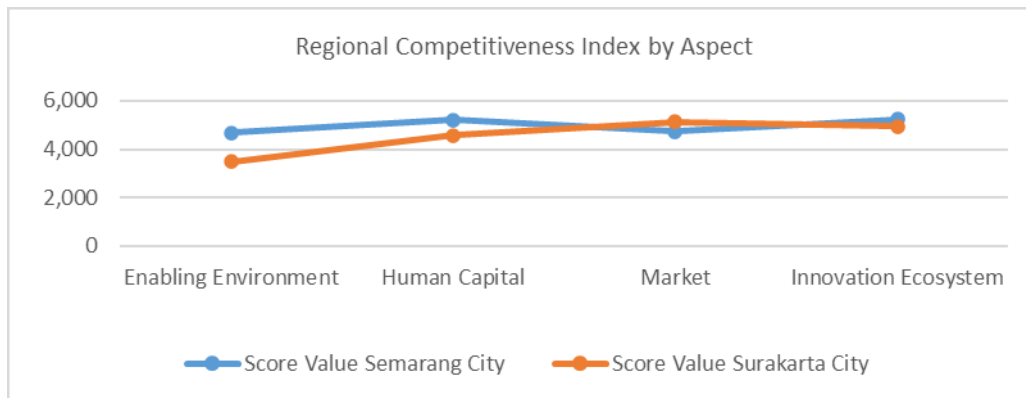


Figure 1 Competitiveness Index Value of Semarang and Surakarta City Based on the Aspects/Factors of 2018
(Source: Ministry of Research, Technology, and Higher Education, 2018)

Base on aspects/factors, the highest value of Semarang City Competitiveness index is in the aspect of innovation ecosystem (5,241) with a high category followed by human resources aspects (5,208), market aspects (4,722) and enabling environment aspects (4,681). While the highest value of Surakarta city competitiveness is in the market / market aspect (5,137) with a high category followed by innovation aspects (4,937) and human resources aspects (4,583), the Enabling Environment aspect (3,486) is included in the medium category.

Table 5: The scores of the Semarang and Surakarta City Competitiveness Index Based on the Pillars of 2018

Aspect/Factor	Pillars	Score	
		Semarang City	Surakarta City
Enabling Environment	Institutional	5,125	3,875
	Infrastructure	3,750	1,750
	Local Economy	5,167	4,833
Human Capital	Health	6,500	5,500
	Education and Skill	3,917	3,667
	Market	Product Market	5,056
Efficiency			
Employment		4,833	4,667
Access to Finance		4,000	3,714
Innovation Ecosystem	Market Size	5,000	7,000
	Technology	5,600	5,300
	Readiness		
	Bussiness Dinamycs	4,400	4,400
	Innovation Capasity	5,722	5,111

Source: Ministry of Research, Technology, and Higher Education (2018)

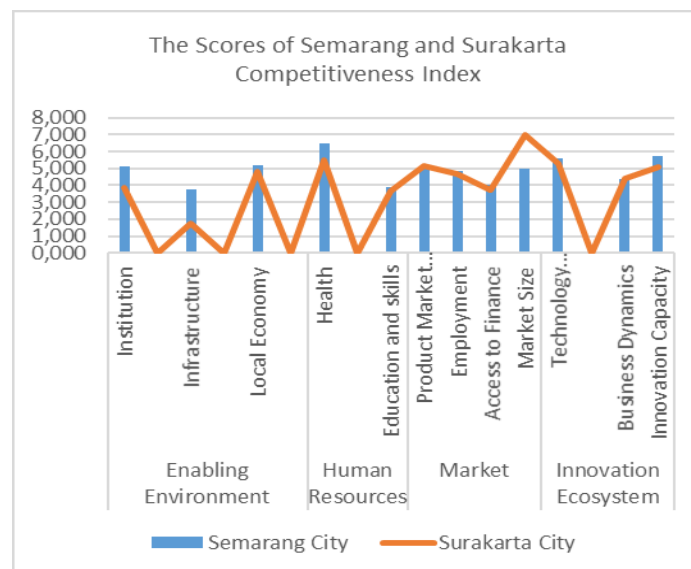


Figure 2 Value of Semarang City and Surakarta City Competitiveness Index Based on the Pillars of 2018
(Source: IDSD database processed, 2018)

Semarang City, in enabling environment, the institutions and local economic pillars are in high category while the infrastructure pillar is in the medium category. Surakarta city, in enabling environment, local economy pillars are included in the high category, while institutional pillars are in the medium category and infrastructure pillars are in the low category.

In human capital aspect both Semarang and Surakarta city are including high category for health pillars, while education and skill in medium category.

In market aspect, product market efficiency, market size and employment pillars in Semarang city are in high category, while access to finance pillars are in medium category. Product market efficiency and market size pillars in Surakarta city are in high category, while employment and access to finance pillars are in medium category.

3.2 Comparison of the Highest and Lowest Value

Comparison of the Two Highest & the Lowest Pillars Value of Semarang and Surakarta City in Competitiveness Index.

Table 6: The Comparison of the 2 Highest & the Lowest Pillars Value of Semarang and Surakarta City Competitiveness Index Based on the Pillars of 2018

City	Aspect	z	Pillars	Value	
				The Highest	The Lowest
Semarang	Human Capital		Health	6,500	
	Innovation Ecosystem		Innovation Capacity	5,722	
	Enabling Environment		Infrastructure		3,750
Surakarta	Market		Market Size	7,000	
	Human Capital		Health	5,500	
	Enabling Environment		Infrastructure		1,750

Health and innovation capacity are the two pillars of the highest competitiveness in Semarang city, while market size and health are the two pillars of the highest competitiveness in Surakarta city.

Infrastructure is the lowest pillar of competitiveness in the city of Semarang and Surakarta. Infrastructure is one of the pillars of the enabling environment. The other 2 pillars are institutional and local economy.

The picture below is a comparison between the pillars of enabling environment aspects in Semarang city and Surakarta city.

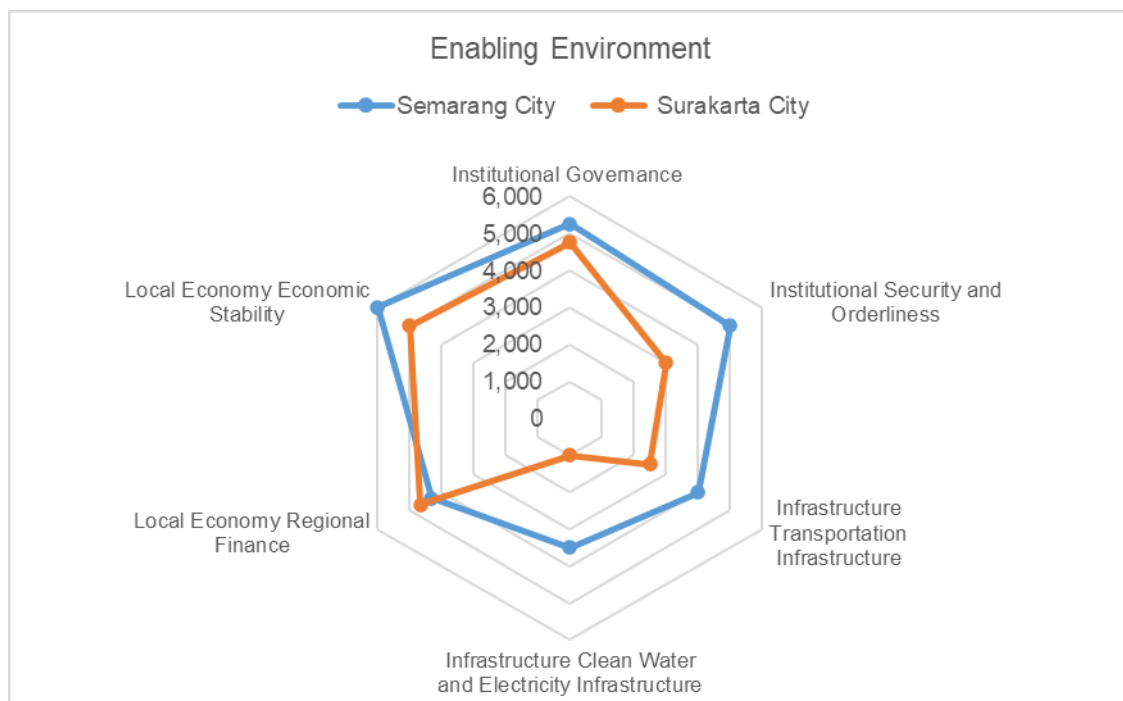


Figure 3. The Comparison between the Pillars of Enabling Environment Aspects in Semarang and Surakarta City

The value of the pillars of transportation infrastructure in Surakarta city is lower than Semarang city, as well as the clean water and electricity infrastructure.

3.1.1 Semarang

Health which is the highest pillar's value of the competitiveness in Semarang city is the strongest potential that supports regional competitiveness. The dimensions that form the pillars of health are the dimensions of health. The attributes of the health dimension are (1) the value of life expectancy, and (2) the percentage of decrease or increase in malnutrition.

The capacity of innovation which is the two highest pillars value of competitiveness in Semarang city is the second strongest potential that supports regional competitiveness. The dimensions forming this innovation capacity are the dimensions of Interaction and Diversity, Research and Development and Commercialization.

Infrastructure which is the lowest pillars value of competitiveness in Semarang city is a major weakness that must be overcome to improve regional competitiveness. The dimensions that form pillars of infrastructure are Transportation Infrastructure, Electricity and clean water infrastructure

3.1.2 Surakarta City

Market aspect is the advantage of Surakarta city. The wholesale and retail trade sector are the second dominant business sector after the construction sector.

There is a downward trend in the contribution of the wholesale and retail trade, reparations and motorbikes sectors to the GRDP of the Surakarta city. However, this sector still second ranks from the economic sector that dominates the GRDP. This indicator shows that market conditions in Surakarta City are growing positively and dynamically.

Market size which is the value of the pillar of the highest competitiveness in the Surakarta city is the strongest potential that supports regional competitiveness. This is consistent with the dominance of the trade sector against the GRDP of the Surakarta city. Dynamic market conditions encourage the emergence of new businesses in this city.

There is a fluctuation in the number of large and medium-sized companies in the Surakarta city, however there is positive growth from the number of new companies established in the Surakarta city. This shows that there is an increase in the market or at least a stable market in the Surakarta city.

The purchasing power of the people of Surakarta City which grew above 3 percent and the market with a population reached 516,102 people with per capita expenditure of Rp. 15,625,000, which means that market conditions in the Surakarta city experienced positive growth.

The dominance of the trade and services sector in the GRDP shows that the market in Surakarta City continues to grow. Conditions that indicate market stability can also be seen from the investment value that continues to experience growth.

Investment in large, medium, small and informal businesses continues to increase. It can be interpreted that the business climate in Surakarta city is conducive so that there is confidence from the private sector to add investment or make new investments because it sees market growth in Surakarta city.

Health is the second highest pillar of competitiveness value in Surakarta city. It is the second strongest potential that supports regional competitiveness. The dimensions of forming health pillars are health dimensions. The attributes of the health dimension are (1) the value of life expectancy, (2) the percentage of decrease or increase in malnutrition.

The number of health facilities, in the form of hospitals, puskesmas and pharmaceutical services that reaches 232 units is very sufficient to serve the residents of Surakarta City. The number of specialist doctors is 702 people, general practitioners 618 people, 164 dentists and nurses 3684 people are the foundation of competitiveness of superior health for Surakarta city.

Infrastructure which is the value of the lowest competitiveness pillar in the city of Surakarta is a major weakness that must be overcome to improve regional competitiveness. The dimensions that form pillars of infrastructure are Transportation Infrastructure, Electricity and clean water infrastructure.

Based on the results of the analysis above, some policy recommendations that need to improve the regional competitiveness index of the cities of Semarang and Surakarta are as table.

Table 6: Policy Recommendation Based on Results of Analysis

Pillar	Dimension	Condition	Policy
Infrastructure	a. Transportation Infrastructure	1) Percentage ratio of road length compared to area	Increase the proportion of road network length in good condition
		2) Percentage of road length ratio to the number of motorized vehicles in the last year	Increasing the capacity of public transportation and mass transportation.
3) The percentage of the length of the road in good condition compared to the total length of Regency / City roads excluding toll roads is already very high.		Increase the proportion of road network length in good condition	
4) The percentage contribution of the GRDP value obtained from the transportation and warehousing sector to the total GRDP is still very low.		Increase the value of the transportation and warehousing sector	
	b. Clean Water	1) Percentage of Clean Water Customers	Increase the quality and quantity of

Pillar	Dimension	Condition	Policy
	and Electricity Infrastructure	utilizing PAM / PDAM / PAMSIMAS / Other clean water providers compared to the population still needs to be improved	Households Served with Drinking Water up to 100%
		2) Percentage of village / kelurahan ratio with 100% electricity.	Maintaining electricity availability according to the existing trend of increase.
		3) The percentage contribution of the value of GRDP from the electricity procurement sector to the GRDP of the last year's total is very low	Increase the contribution of the electricity sector in the GRDP.
		4) The percentage contribution of the value of GRDP from the water supply sector to the GRDP in the last year is very low	Increase the contribution of the clean water sector in the GRDP.

Source: Authors' Analysis (2018)

4 Conclusion

In general, the level of competitiveness of Semarang city is higher than that of Surakarta city. Factors / aspects that make up regional competitiveness are (1) Enabling Environment, (2) Human Capital, (3) Market and (4) Innovation Environment. The cause of the difference in the level of competitiveness of Semarang city and Surakarta city is the difference in the value of its building pillars, where Semarang city is superior to the pillars of Health and Innovation Capability. While Surakarta city excels at the pillars of Market Size and Health. The same lowest pillar value in the two cities is infrastructure with elements of transportation infrastructure and clean water and electricity infrastructure.

5 Recommendation

Policy recommendations that need to improve the regional competitiveness index of Semarang and Surakarta city are (1) Improve transportation infrastructure, in the meaning of (a) Increase the proportion of road network length in good condition, (b) Increasing the capacity of public transportation and mass transportation, (c) Increase the contribution of the transportation and warehousing sector value in the GRDP; (2) Improve clean water and electricity infrastructure, in the meaning of (a) Increase the quality and quantity of Households Served with Drinking Water up to 100%, (b) Maintaining electricity availability according to the existing trend of increase, (c) Increase the contribution of the electricity sector in the GRDP as well as clean water sector.

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