Analysis of infrastructure and community welfare in Merauke district and Boven Digoel district

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Abstract. The purpose of this study is to analyze whether the construction of road infrastructure, sea and air transportation infrastructure, economic infrastructure, agricultural infrastructure, education infrastructure, and health infrastructure has a varied picture of improving community welfare and economic growth in Merauke and Boven Digoel Districts. This study used a qualitative approach with descriptive analysis methods. The data analyzed were secondary time-series data for 2005-2014. Secondary data sources were infrastructure development data with indicators each in BPS in two districts and Papua Province. The results showed that road infrastructure, sea and air transportation infrastructure, agricultural infrastructure with irrigation channel indicators, economic infrastructure with traditional market indicators, and education infrastructure had a positive effect on people's welfare, but did not have a positive effect on economic growth. Health infrastructure has a positive effect on people's welfare. Economic growth does not have a positive picture of the level of community welfare.

1. Introduction
Development must truly bring progress to the economic development sector [1]. Management of regional governments, both at the provincial and district and city levels have entered a new era in line with the issuance of Law No. 22 of 1999 and Law no. 25 of 1999 which regulates regional autonomy and fiscal decentralization. In its development, this policy was renewed with the issuance of Law No [2]. Both of these laws regulate regional governance and financial balance between the central government and regional governments. This policy is a challenge and opportunity for regional governments because the local governments have a higher authority to manage their resources efficiently and effectively [3], for all economic sector including agriculture efficiency in order to get resilient society [4,5].

Infrastructure and infrastructure (Social Overhead Capital) in the area will have an impact on regional economic growth [6]. If the facilities and infrastructure are adequate, the community can carry out their daily activities safely and comfortably, which will affect their increasing level of productivity, and with adequate infrastructure will also attract investors to open businesses in the area.[7] With the increase in capital expenditure will have an impact in the coming period that is increasing community productivity and increasing investors will increase local revenue [8].
2. Methods
This study used secondary data with descriptive qualitative data collection methods utilizing data or documents produced by the authorities to provide additional description or explanation.

3. Result and discussion

3.1. The linkage of social infrastructure and community welfare in Merauke regency
Government efforts to improve infrastructure development are expected to be able to boost the level of welfare of its people. The infrastructure that was the focus of this research was infrastructure that supports the development of the components forming the Human Development Index (HDI). The development and growth of the infrastructure of the Merauke district during the period 2005-2014 and its correlation to the level of welfare of the people can be seen in the graph below.

Table 1. Social infrastructure and welfare in the communities of Merauke regency

| Years | Road (Km) | Sea and Air (Unit) | Economy (Unit) | Agriculture (M) | Education (Unit) | Health (Unit) | Economic growth (%) | Welfare (IPM) |
|-------|-----------|--------------------|----------------|----------------|------------------|--------------|---------------------|---------------|
| 2005  | 1,530.80  | 8                  | 4              | 1,362.63       | 266              | 169          | 10.00               | 61.50         |
| 2006  | 1,533.60  | 8                  | 4              | 1,362.63       | 269              | 175          | 18.60               | 62.55         |
| 2007  | 1,535.50  | 8                  | 4              | 1,362.63       | 274              | 612          | 4.18                | 64.03         |
| 2008  | 1,535.50  | 8                  | 3              | 1,362.63       | 280              | 488          | 5.39                | 64.44         |
| 2009  | 1,564.90  | 19                 | 5              | 1,562.63       | 285              | 527          | 14.97               | 64.77         |
| 2010  | 1,603.00  | 19                 | 7              | 1,562.63       | 296              | 601          | 12.47               | 65.73         |
| 2011  | 1,608.10  | 19                 | 7              | 1,562.63       | 298              | 401          | 59.83               | 66.19         |
| 2012  | 1,784.30  | 19                 | 8              | 1,562.63       | 306              | 415          | 11.37               | 66.52         |
| 2013  | 1,792.30  | 22                 | 8              | 1,762.63       | 309              | 429          | 12.69               | 67.48         |
| 2014  | 1,820.20  | 22                 | 8              | 1,762.63       | 302              | 430          | 12.67               | 67.33         |

Table 1 above explained that the road infrastructure in Merauke district during the study period continued to experience growth from 1,530.80 km in 2005 to 1,820 km in 2014. The growth of road infrastructure was correlated with the growth in the Human Development Index of the Merauke district in 2005 with an index value of 61.50 increased to an index value of 67.33 in 2014. This data showed that when there was an increase in the growth of road infrastructure, there was also an increase in the index value at the level of welfare of the people of Merauke district during the period 2005-2014. This showed that the growth of road infrastructure had an impact on the growth of the welfare level of the people of Merauke district.

Another infrastructure that had continued to increase was agricultural infrastructure with indicators of irrigation development. The Regency of Merauke crossed by rivers had excellent potential for the development of agricultural systems, especially rice farming, with technical irrigation. Irrigation development continues to be developed, starting from primary channels, secondary channels, and tertiary channels. Until 2004 primary, secondary, and tertiary canals had been built along 1,362.63 m and continued to increase to 1,762.63 m in 2014. The growth of agricultural infrastructure development was correlated with the growth of the Human Development Index (HDI) of Merauke district. This correlation could be understood because the livelihoods of most of the inhabitants of Merauke were rice farming. This correlation was also understood because the main supporting structure of the Merauke Regency GRDP was agriculture, animal husbandry, hunting, and agricultural services.

Other infrastructure that also continued to develop its development such as education, health, and air transportation, and economic infrastructure with traditional market indicators, but did not have
a significant influence on the level of welfare of the people of Merauke district. Educational infrastructure, for example, continues to grow, but the quality of each education was deficient because many other factors influence it. Likewise, the growth of health infrastructure did not directly and significantly affect the health level of the population because many other factors also affect the quality of the population's health.

3.2. **Linkages of social infrastructure and community welfare in Boven Digoel regency**

The growth of social infrastructure development and its correlation to the level of welfare of the people of the Boven Digoel district in the period 2005 - 2014 can be seen in the graph below.

**Table 2. Social Infrastructure and Community Welfare in Boven Digoel Regency**

| Years | Road (Km) | Sea and Air (Unit) | Economy (Unit) | Agriculture (M) | Education (Unit) | Health (Unit) | Economic growth (%) | Welfare (IPM) |
|-------|-----------|-------------------|----------------|-----------------|-----------------|--------------|---------------------|--------------|
| 2005  | 906.92    | 2                 | 2              | 1.00            | 103             | 82           | 15                  | 47.60        |
| 2006  | 931.93    | 4                 | 2              | 1.00            | 95              | 83           | 15                  | 48.30        |
| 2007  | 918.59    | 11                | 2              | 1.00            | 101             | 178          | 15                  | 48.65        |
| 2008  | 975.70    | 11                | 5              | 1.00            | 96              | 195          | 3                   | 49.20        |
| 2009  | 1,011.67  | 11                | 9              | 1.00            | 98              | 197          | 13                  | 49.56        |
| 2010  | 1,042.67  | 13                | 9              | 2.00            | 98              | 219          | 11                  | 50.21        |
| 2011  | 1,059.71  | 13                | 9              | 2.00            | 98              | 226          | 50                  | 50.64        |
| 2012  | 1,089.08  | 20                | 10             | 3.00            | 98              | 233          | 5                   | 51.43        |
| 2013  | 1,136.58  | 30                | 12             | 3.00            | 101             | 220          | 8                   | 51.93        |
| 2014  | 1,185.68  | 32                | 13             | 3.00            | 102             | 225          | 10                  | 58.21        |

Table 2 above showed that the road infrastructure in the Boven Digoel district during the study period continued to experience growth every year. In 2004, the length of the Boven Digoel regency road data was 906.92 km, increasing to 1,185.68 km in 2014. The growth of road infrastructure was correlated with the growth of the Human Development Index of the Boven Digoel regency because the index value in 2005 was 47.60 increasing to an index value 58.21 in 2014. This data showed that when there was an increase in the growth of road infrastructure, there was also an increase in the index value of the welfare level of the people of Boven Digoel district during the study period 2005-2014. This showed that the growth of road infrastructure in the Boven Digoel district affected the growth level of welfare of the people.

Boven Digoel Regency as one of the border areas indeed received serious attention from the government to develop an integrated transportation system by optimizing existing transportation systems, accelerating and improving transportation facilities and infrastructure, improving intermodal coordination systems, and improving logistics transportation management. The growth of transportation group infrastructure in the Boven Digoel regency such as land transportation, sea/river, and air transportation was quite rapid. The sea/river and air infrastructure data of Boven Digoel district in 2005 recorded as many as two units developing to 32 units in 2014. This rapid growth certainly had an impact on various facilities in the transportation of goods and people to and from remote areas, which in turn increased welfare the people.

Growth in the development of education infrastructure and health infrastructure in Boven Digoel district had contributed to the improvement of the quality of life of its population, even though the education and health sectors had not yet developed, due to many factors that influence it. Education infrastructure did not virtually increase the number of building units. The health infrastructure was developing quite significantly wherein in 2005 there were 82 units increased to 225 units in 2014. The awareness of the community to seek treatment for available health facilities was still very low, and the absence of adequate medical personnel such as doctors was a factor. Obstruct the progress of the
health sector.

The percentage of economic growth fluctuating where the percentage of growth tended to decrease did not correlate with the growth of the level of social welfare. The percentage of economic growth from 2004 to 2005 was 15 percent and remained the same percentage of growth for the next two years. Furthermore, the percentage of economic growth in the Boven Digoel district dropped dramatically; namely, economic growth only reached 3 percent from 2007 to 2008. Furthermore, the percentage of economic growth crept up again to 13 percent and 11 percent. The percentage of increase was very striking occurred from 2010 to 2011, which was equal to 50 percent, then continued to decline again until 2014 recorded a percentage of growth of only 10 percent. The percentage increase in economic growth occurred due to large amounts of investment from several Korindo Group subsidiaries engaged in logging, and opening of oil palm plantations. Such investment affects the increase in the value of Boven Digoel's GRDP but did not directly impact and touch the microeconomics, and positively did not directly affect the welfare of its people. Another thing that happens was that large-scale investment certainly requires knowledgeable and trained personnel brought in from outside the regency even from outside the province, while residents had only begun to slowly be involved in job training to be involved in various oil palm plantation development activities.

4. Conclusion

Results of the Research Discussion on Social Infrastructure and Community Welfare in Two Regencies namely Merauke Regency and Boven Digoel Regency, it can be concluded as follows;

Land, Sea, and Air transport infrastructure provides a positive picture of efforts to increase economic growth and Community Welfare in Merauke and Boven Digoel Districts, Economic Infrastructure, Agriculture, Education and Health each has a different picture in the two Districts. Economic Infrastructure has a positive picture in two districts.

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