

A SIMULATION OF DEVELOP SOCIETY WELFARE TOWARDS TRANSPORTATION CASE IN RURAL AREA

MaksyurnSyahri Lubis¹, Andre HasudunganLubis², Solly Aryza³

¹Faculty Social and Political Sciences, Universitas Of Medan Area, Medan Indonesia

²Faculty Engineering, Universitas Of Medan Area, Medan Indonesia

³Faculty Science and Technology Uniuersitas Of Pembangunan Panca Budi, Medan Indonesia

Email:sollyaryzalubis@gmail.com

Abstract: *Transport infrastructure is a measure of the spatial interaction among regions and has a significant role in supporting the process of regional infrastructure development because without transportation between one place to another place is not materialized well. Interaction among regions has reflected in the transportation infrastructure facilities condition as well as the flow of people, goods, and services.. Transportation infrastructure development can improve the accessibility of Deli Serdang region, thereby improving the economy of Deli Serdang, which consequently will increase the welfare of the community; therefore the accessibility planning is essential. For this purpose, there are three questions posed in this study. The results showed that both of quantity and quality variables, accuracy and ease had the significant effect on the regional development and its aspects except qualitative variables to local development as well as issues of the economic, social and accuracy. Regional development variable also had a significant effect on the public welfare but the social aspect of revenue aspect. Development of transport infrastructure should be improving the quantity, accuracy, and ease of roads in Deli Serdang districts in enhancing the development of the region to improve the welfare of rural communities.*

Key Words: *Transport Infrastructure, Regional Development, Public Welfare.*

1. INTRODUCTION:

An area development is the effort to harmonizing natural resources, human resources and technology by considering the environmental capacity for community empowerment (Zen, 1999). In purpose, the attempt is how to arrange the potential of area can be optimally applied for the improvement of the economic and social welfare of the community (Nasution, 2011). A region has various development elements that can be mobilized to improve society welfare which are human resources, natural resources, infrastructure, technology and language (Miraza, 2005). According to Adisasmita (2010), there are three main component regarding a region, namely population resources, economic activity, and transportation system. Transportation is a crucial support that enables to develop a region and plays significant role as the liaison and becomes a bridge between the parties (Miraza, 2010; Adisasmita, 2011).

The development of transportation infrastructure is one of the vital points in increasing the economic growth of a country (Susantono & Berawai, 2012). Moreover, (Ernawi2007) stated that a good relationship with the level of regional development among others was indicated by the rate of economic growth and welfare of the community. Road transport infrastructure is the main link between two areas that are interacting in development. Without a network of road transport infrastructure it is impossible for development to be introduced outside the region. Road is the access of transportation from one region to another. Communities in Deli Serdang District requires activities and tools to get to the place of operation, among other means of transportation in the form of cars or other vehicles in conducting their activities. Movement of means of transportation requires transportation infrastructure in the way of roads to connect an area with another territory. However, the development of road transport infrastructure in Deli Serdang Regency is still relatively low compared to its broad area. As shows in Table 1, the length of roads in 2005 along 2,730.154 km was increased to 3,372.940 km in 2011. The condition of this road is still minimal when compared with the area of Deli Serdang Regency with total of 2,497.72 km².

Table 1: Length of District Road by Type of Surface and Condition of Road in Deli Serdang Regency (2005-2011)

No	Status	Year (Km)						
		2005	2006	2007	2008	2009	2010	2011
1	Type of Road							
	Surface	699,700	791,259	945,400	1.186,314	1.848,776	1.604,174	1.698,106
	a. Asphalt	273,400	388,886	1.106,250	1.568,375	1.474,951	1.616,471	1.611,639
	b. Gravel	-	-	-	34,059	34,059	34,059	34,059
	c. Stone	-	-	-	15,958	15,958	18,236	29,136
	d. Concrete	344,500	337,700	61,100	270,848	-	-	-

	e. Soil f. Not elaborated	1412,534	1.221,289	617,384	-	-	-	-
	Total	2.730,134	2.730,134	2.730,134	3.075,554	3.372,844	3.372,940	3.372,940
2	Condition							
	a. Good	322,838	697,452	986,200	1.229,998	2.231,094	2.226,130	2.320,062
	b. Medium	568,567	480,158	930,150	1,673,080	1,027,196	987,390	1.000,826
	c. Broken	407,200	300,240	92,800	74,240	69,160	49,520	39,520
	d. Heavily damaged	18,995	39,995	103,600	98,236	45,394	9,900	12,532
	e. Not elaborated	1.412,534	1.212,289	617,384	-	-	-	-
	Total	2.730,134	2.730,134	2.730,134	3.075,554	3.372,844	3.372,940	3.372,940

Source : BPS Kabupaten Deli Serdang, 2012

In general, rural community have limited access to road transport infrastructure. The dirt roads or stone roads are still occurring in the rural area also it indicated that their activity is lower than the urban community. The limitations of transportation accessibility from rural communities inflict various problems. Issues regarding health, education, employment, water availability and fuel sources that will contribute to the poverty level of society (Puspasari, 2000). Improving the development of road transport infrastructure and increased accessibility of Deli Serdang Regency will be able to increase the economy level. An Increased economic activity will improve welfare and can reduce the poverty of the residents. Hence, the paper is aiming to identify the relationship and impact of road transport infrastructure in the framework of regional development towards the welfare of rural societies Deli Serdang Regency.

2. LITERATURE REVIEW:

The construction of a land area will cause traffic that will affect the transportation infrastructure. Conversely, the existence of right transportation infrastructure will change the pattern of land use. The interactions of these three subsystems, influenced by rules and policies. In the long term, the development of transportation infrastructure or the provision of modern transportation facilities will affect the shape and pattern of land use as a result of increased accessibility levels. Transport planning has needed as a consequence of the growth of traffic conditions and area expansion. The growth of urban areas needs to be planned if it is known or expected that people in one place will grow and reproduce; Also if the level of population growth increases, because this increases the number of vehicles and housing. Then, traffic conditions need to be revisited, if the density and congestion on the road increases and the movement system in a region are no longer economical. In time, the city's expansion needs to be controlled, if it is estimated that the transportation system is no longer able to support the city's development. Transportation using language is defined as "a system of means of a vehicle, aircraft, or ship" (Oxford English Dictionary CD version LV.02). Morlok (1988) explains transportation as a means of transporting or transporting goods or passengers from one place to another. Traffic is said to be good, if the journey is fast enough, does not experience congestion, the frequency of service is adequate, safe, free from the possibility of accidents and conditions of convenient service.

Nasution (1996) defines transportation theory as the transfer of goods and people from the place of origin to the destination. So with these activities, there are three things, namely the presence of transported products, the availability of vehicles as a means of conveyance, and the presence of roads that can be passed. The process of removal from the movement of origin, where transport activities begin and to the destination where the action is terminated. For that with the transfer of goods and humans, the transportation is one sector that can support economic activities (the promoting industry) and the service provider (the servicing sector) for economic development.

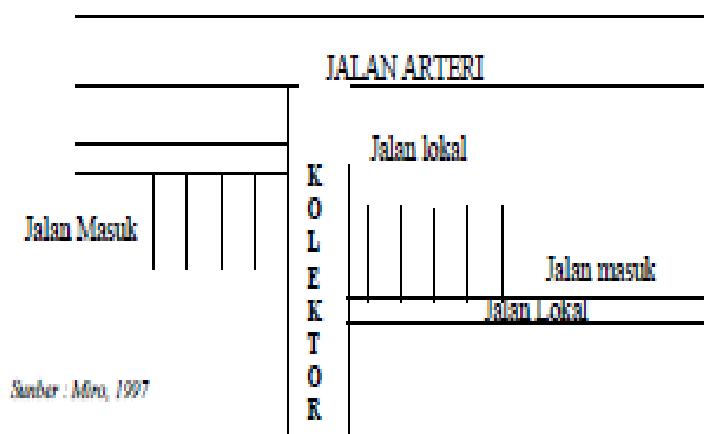


Figure1. The Road Hierarchy Based on Its Role

3. CONCEPTUAL RESEARCH FRAMEWORK:

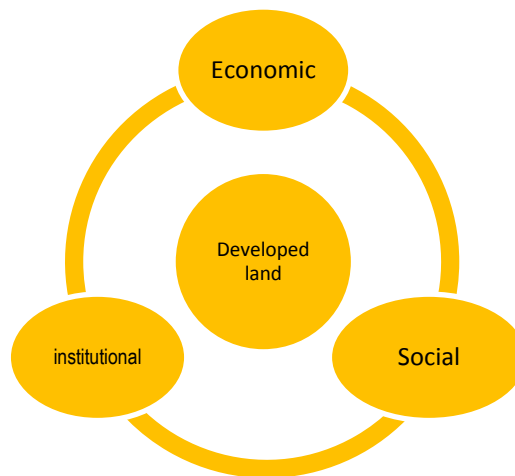
A topographic condition of Deli Serdang Regency is divided into 3 (three) parts, namely: 1) Coastal Plain Region, 2) Lowland Area and 3) Highland Region with different characteristics. Sirojuzilam and Mahalli (2010) state that the type of regional planning and policy should not be the same among the various regions. This type of spatial plan is critical to implement considering the regional dimension planning is very concerned about the potential and resources owned and the location aspect of each region. This research refers to theories such as Sirojuzilam (2005) which states that the development of the region mainly means increasing the value of the territory for the community of a particular area can accommodate more residents, with the level of welfare of the city which the average of many facilities / or services available and the activities of increasing community enterprises, whether in terms of type, intensity, service or quality. Miraza (2005b) states within a region there are various elements of development that can be mobilized to improve the welfare of the community. Such elements are natural resources, human resources, infrastructure, technology and culture. Based on the above description of the welfare of the community can be improved by the use of space through the infrastructure and infrastructure of roads. Transportation in regional development is a key support that enables a region to flourish (Miraza, 2010). The role of transportation is very important as a liaison, closer, and bridge between the parties that need each other (Adisasmita, 2011). Morlok (1988) argues that due to differences in the level of ownership of resources and the limited ability of the region in supporting the needs of the population of a region causes the exchange of goods, people and services between regions. This exchange begins with a supply and demand process. As a tool for the supply and demand process that needs to be delivered to other areas, transportation facilities and infrastructure are needed. Transportation facilities that allow to help the mobility of public transport, while the transportation infrastructure is the road.

The movement of people and goods from one place to another always through certain paths. Place of origin and destination are connected to each other with a network (network) in space. The interface can be a road network, which is part of the transportation system. Transportation is an essential thing in an order because without transportation of transportation between one place to another place does not manifest properly (Bintarto, 1982). According to Hurst (1974), the study of transportation geography focuses on "transport networks, locations, structures, currents, and the significance and influence of networks on economic spaces associated with regional development with the principle of interdependence between networks and economic space as accessibility changes". In this case the better a transportation network, so the accessibility is also better so that economic activity is also growing. Furthermore, Hurst (1974) argues that inter-regional interactions are reflected in the state of transport facilities as well as the flow of people, goods, and services. Transportation is a benchmark in inter-regional spatial communication and significant role in supporting the process of development of a region. Areas with diverse geographical conditions require the integration of different types of transportation in serving the needs of the community. A transport system was developed to link two different land use sites. Transportation is used to move people or goods from one place to another, so it has a more economical value increases. Development is a conscious effort and plans to improve the quality of life in its implementation will always use and manage the resources of both human and artificial resources. One of the primary objectives of the development is the development of the territories in it, especially in the harmony of growth or growth rate between regions within the region. Factors driving the event of a part is closely related to the availability of facilities and infrastructure areas, especially socio-economic facilities and facilities. Economic facilities and facilities are often the dominant factors that play a role in advancing the region.

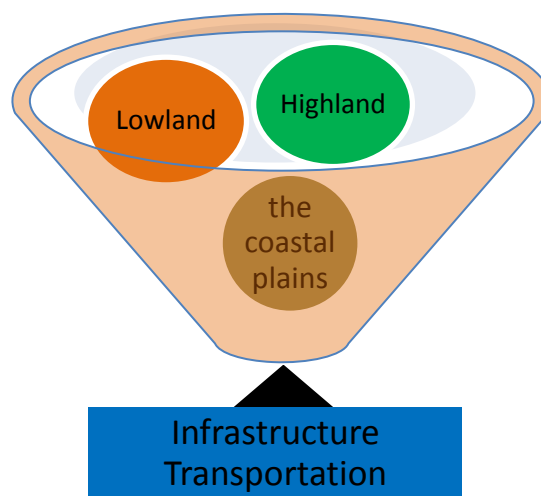
The role of regional transportation supported by the availability of a network of transportation infrastructure and a sufficient capacity transport service network contributes positively to the development and improvement of various sectoral activities in regional development. The purpose of this research is to analyze the influence of regional development on rural road transportation infrastructure of Deli Serdang Regency. For this purpose has been formulated the main question is whether the development of the region affect the rural road transport infrastructure Deli Serdang regency. The summary of the research results can be seen in Tables 2.

Tables 2. Summary of Effect of Regional Development on Road Infrastructure Infrastructure of Deli Serdang Regency

Dimensional Variables	Coefficient	t-Total	Prob.
1 (Constant)	-.662	-.285	.776
Economic Facility	.948	6.668	.000
Social Facility	1.230	11.128	.000
Institutional Facility	1.028	4.875	.000
R2 = 0,769			
Prob. F = 0,000			



Figures 2. Three Regional Development Factors play a role in Road Transportation Infrastructure



Figures 3. Road Transportation Infrastructure for Regional Development on Highland, Low and Coastal Welfare.

In the research that became the originality is proved that the dimension of economic facilities, social facilities and institutional development of the region have a significant positive effect on road transport infrastructure. The proportion of quantity, quality, accuracy, and easiness of road transport infrastructure development have a significant positive impact on the welfare of rural community which includes income dimension, business opportunity and work, education, health, safety, and comfort. Where road transport infrastructure has a significant effect on the welfare of rural communities in lowland sub-districts which include income, business and work opportunities, education, health, safety, and comfort. The impact of road transport infrastructure on the welfare of rural communities in coastal sub-districts shows different results. The impact of road transport infrastructure has a significant effect on the well-being of Hamparan Perak District community which includes the dimension of income, business opportunity, and work, education, health, safety, and comfort. Kecamatan Pantai Labu and Labuhan Deli show that the dimensions of revenue, business opportunity, and employment, health have no significant effect due to the existence of road transport infrastructure.

4. CONCLUSIONS:

Based on the results of this study can be summarized as follows:

- Simultaneous and partial regional development has a significant impact on road transport infrastructure.
- Road transport infrastructure simultaneously and partially had a substantial effect on the welfare of the community. The quantity dimension of quantity, quality, and ease of road transport infrastructure have a positive impact while the aspect of accuracy hurts people's welfare.
- Constant and partial road transport infrastructure has a significant impact on the welfare of the people on the high, low and coastal plains. The dimensions of the quantity, quality, accuracy and ease of road transport infrastructure have a positive effect on the welfare of the people in lowland and coastal areas, while in the highlands the dimensions of accuracy are negatively affected.

REFERENCES:

1. Adedeji, O.A., E.M. Olafiaji, F.K.Omole, J.A. Olanibi, and Y. Lukman, An Assessment on the Impact of Road Transport on Rural Development : A Case Study of Obokun Local Government Area of Osun State, Nigeria. *British Journal of Environmental Sciences*, Vol.2(1): 34-48, 2014.
2. Aderamo, A.J. and S.A. Magaji. Rural Transportation and the Distribution of Public Facilities in Nigeria: A Case of Edu Local Government Area of Kwara State. *J Hum Ecol*, 29(3): 171-179, 2010
3. Ali, Ifzal and Ernesto M. Pernia. 2003. Infrastructure and Poverty Reduction, What is the Connection? *Asian Development Bank*, Manila, Philippines, 2003.
4. Bougheas, Spiros, Panicos O. Demetriades., Theofanis P. Mamuneas Infrastructure, Specialization, and Economic Growth. *The Canadian Journal of Economics / Revue canadienne d'Economie*, Vol. 33, No. 2, pp. 506-522, Published by: Blackwell Publishing on behalf of the Canadian Economics Association, 2000.
5. Okoko, E. Rural Transportation and Rural Development: The Instance of Akwapin South District in Ghana. *International Journal of Economic Development Research and Investment*, Vol 2(3): 10-26, 2011.
6. Sirojuzilam. Regional Planning and Development. *Wahana Hijau: Jurnal Perencanaan dan Pengembangan Wilayah Sekolah Pascasarjana*. Medan : Universitas Sumatera Utara. 1(1); pp 10-14, 2005.
7. Talvitie, Antti. Performance Indicators for The Road Sector. *Transportation*. pp. 5 – 29, 1999.
8. Terefe, L.A. (2012). Impact of Road on Rural Poverty Evidence Form Fifteen Rural Villages in Ethiopia. *International Institute of Social Study*. 53 p, 2012.