

The Influence of Transportation Support Capacity on The Development of Medan Johor District

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Abstract

Roads are also referred to as a means of driving the region's economy because it can increase economic growth and reduce inequality between regions. Economic growth and the development of activity centers in Medan Johor led to an increase in population movement. Transportation as a movement supporting infrastructure has positive implications for the increasing growth and progress of the city, but it can also provide negative implications, such as congestion, irregularities and traffic accidents. The carrying capacity of transportation is a road as a means and transportation as infrastructure. Therefore, research is needed that aims to analyze the influence of transportation support capacity on the development of Medan Johor District. The research method is descriptive quantitative with survey approach. The research variables used are variable physical condition of the road, safety of road users, comfort of road users, speed of travel, smooth transportation, transportation capacity, effectiveness of transportation and development of the territory. The data was obtained from 100 respondents who live in Medan Johor through questionnaires. The data analysis method is done with multiple linear regression analysis. The results showed that the physical condition of the road, the comfort of road users, the speed of travel, the smoothness of transportation, transportation capacity, the effectiveness of transportation positively and signifikan to the development of the District of Medan Johor and the safety of road users positively and not signifikan to the development of the district of Medan Johor. It is necessary for the role of the Central Government and The Local Government of Medan city to continue to prioritize the development of transportation facilities and infrastructure, evaluate the development of land use, evaluate the granting of permits for the construction of shop houses and buildings that are used as business premises because it can result in increased vehicles, controlling the utilization of space in accordance with the General Plan of Spatial Planning of Medan City.

Keywords

transportation carrying capacity;
regional development



I. Introduction

Medan Johor district is one of the sub-districts in medan which has an area of about 16.96 km². The distance of the sub-district office to the medan mayor's office is about 8.5 km. Medan Johor district is directly adjacent to Medan Polonia District to the north, Deli Serdang Regency to the south, Medan Amplas District to the east, and Medan Tuntungan District to the west (Medan Johor In Figures 2020). Based on data belonging to the Public Works Office of Medan city in 2019 the total length of roads in the District of Medan Johor reached 369.02 km consisting of a national road of 4.59 km and a city road of 364.43 km, of which 50.36% was in good condition while the remaining 39.29% was in moderate

condition and 10.34% in damaged condition. Of the total length of the road 72.03% is paved roads, 25.85% concrete roads and 2.11% are cobbled roads or other roads. From the whole road some local roads are interconnected with collector roads and arteries with displays and varying road widths.

Medan Johor area is the center of several government offices, both provincial government offices, city government offices and ministerial offices. In addition, there are also private public hospitals and hajj dormitories located on Jalan A.H. Nasution which is about 9 km from the center of Medan, this location is quite strategic because it is located on the arterial ring road of Medan City. On the other hand, the road is also a fairly congested road during peak hours. The advantage of the tourism sector lies in its ability to increase foreign exchange and to drive various other business sectors such as the home industry. Thus, developed countries and developing countries continue to develop and improve the quality of their country's tourism (Amin et al, 2019).

Tourism is one of the determinants of national economic growth because it can influence the growth of other sectors in the economy (Gokovali & Bahar, 2006) and also grows very fast during this decade (Dogru & Bulut, 2018; Wu et al., 2000). Sustainable tourism development can be completed by creating opportunities through networking and cooperation with service providers, where stakeholder engagement, the development of locally oriented codes of conduct, and local government participation are crucial factors for sustainable tourism success (Welford & Ytterhus in Nurlina, 2020).

Medan Johor also has a culinary tourism location located along Jalan Karya Wisata and J City complex that can be the largest and most complete culinary destination in Medan Johor because it presents a variety of culinary options for visitors. This culinary location is integrated with various strategic access with a variety of easy access transportation connected with private vehicle lanes and public transportation.

According to data from the Medan City Transportation Office there are several points of congestion that often occur in the Medan Johor area, namely at Jalan Karya Jaya, Jalan Karya Wisata, Jalan A.H. Nasution, Jalan STM. This traffic jam occurs in the morning (07.00-08.00 WIB), during the day (12.00-14.00 WIB) and in the afternoon (17.00-19.00 WIB). Increasing traffic flow on the roads in Medan in general and Medan Johor district in particular is a problem that must be faced by the Medan City Government due to regional developments. Traffic density on the road means the number of motor vehicles using certain roads at a certain time (hours) is very high. Very high traffic density results in slower speed of motor vehicles.

The supporting capacity of transportation has a very strong association with the economic growth of a region as well as to the socio-cultural conditions of people's lives. Regional development is indispensable because socioeconomic, cultural and geographical conditions differ from region to region, but basically the development of the region must be adapted to the conditions, potentials and problems of the region.

II. Review of Literature

2.1. Regional Development

Development can be interpreted as an activity to add, improve, improve or expand (Sirojuzilam and Mahalli, 2010). A region is a collection of areas exposed as a geographical entity in its shape and size. The region has natural resources and human resources as well as geographical positions that can be processed and utilized efficiently and effectively through comprehensive planning (Miraza, 2005). According to Law No. 26 of 2007 on spatial planning, a territory is a space that is a geographical unity along with all related elements whose boundaries and systems are determined based on administrative aspects and/or functional aspects. Sirojuzilam and Mahalli (2010) areas are a group of areas located nearby and inhabited by a number of residents above a certain territorial or space. In summary the concept of space/region is characterized by the absolute location and distribution of acreage from a particular image on the earth's surface.

2.2. The Role of Transportation in Regional Development

The role of transportation is very important as a liaison, closer, and bridging between parties in need (Adisasmita, 2011). The development of transportation infrastructure in a spatial context, is an integral part of the economic development of a region or region. This is due to many spatial analyses that pay attention to distance factors in the construction of infrastructure and transportation facilities itself. Tarigan (2006) states that there are three things that make a nation great and prosperous, namely fertile land, hard work and smooth transportation of people and goods from one part of the country to another. This is in line with adisasmita (2005) that the regional system has three main components, namely: 1) population resources; 2) economic activities, and 3) transportation systems.

2.3. Transportation Carrying Capacity

Roads are means of transportation that connect two or more places. The carrying capacity of transportation is the road as the means and transportation as the infrastructure so that the overall carrying capacity of transportation can not be separated from the facilities and infrastructure, namely roads and transportation. A good road is a road with a steady road quality and a steady road quality dimension according to Suwardjoko (2002) are: (1) road conditions; (2) road user safety; (3) the convenience of road users; and (4) speed of travel. As for achieving the destination from one place to another, it is necessary to transport lancer, effective and efficient so that the need for smooth transportation, transportation capacity and effectiveness of transportation.

a. Road

According to Asariansyah, et al (2013) there are several main benefits of road infrastructure for the community, namely: Opening the isolation of regions and regions, increasing activities and supporting the smooth and economic wheels of the region, Gaining access to technology and utilization of social facilities, such as education, health, government plans to move the district capital and others.

b. Road Conditions

Road conditions are a very important thing to note in determining the road maintenance program. According to the Department of Public Works Directorate General of Highways 1992, road conditions can be classified as follows: 1. Roads with good conditions are roads with a completely flat pavement surface, no waves and no surface

damage. 2. The road with moderate conditions is the road with the flatness of the surface of the pavement is moderate, there begins to be waves but no surface damage. 3. Roads with lightly damaged conditions are roads with pavement surfaces have started to corrugated, there began to be surface damage and patching less than 20 of the road area reviewed. 4. Roads with severely damaged conditions are roads with pavement surfaces have a lot of damage such as corrugated, cracked crocodiles, and chipped a considerable 20-60 of the road sections reviewed accompanied by damage to the foundation layer such as amblas, sungkur, and so on. According to Yunianta. A (2006), road conditions are the physical condition of the road.

c. Road User Safety

The safety of road users is the state of the release of any person, goods, and/or vehicles from interference with unlawful acts, and/or fear of traffic. Security is everything related to the imperious danger. For example, in driving, namely accidents, anxiety, vehicle conditions, and others.

d. Road User Convenience

According to Aris. A. (2012), The convenience of road users is a condition where road users feel the impact of congestion in the form of physical or non-physical. According to Prasetyo A.Y. (2017), Comfort is a condition that has been met by one's needs. For example, in terms of driving is free from air pollution, the effectiveness of travel, health in the condition of the body, and others.

e. Travel Speed

Speed is the rate of movement of certain traffic or vehicles that is often expressed in kilometers per hour (Director General of Binamarga 1990). According to Hobbs, F.D. (1995), journey speed is the effective speed of a vehicle traveling between two places, and is the distance between two places divided by the length of time for the vehicle to complete the journey between the two places, with this length of time covering each stop time by traffic delays.

2.3. Transportation

Transportation is the activity of moving or transporting cargo (goods and people) from one place to another, from one origin to a destination (Adisasmita, 2011). Transportation is a major component in life and life systems, government systems, and societal systems. The socio-demographic condition of the region has an influence on the performance of transportation in the region. The level of population density will have a significant influence on the ability of transportation to serve the needs of the community. In urban areas, the trend is a high increase in the population due to both birth rate and urbanization. The level of urbanization has implications for the increasingly dense population that directly or indirectly reduces the competitiveness of regional transportation.

a. Smooth Transportation

Transportation has a very important role that determines the success of development. The dimension of smooth transportation according to Adjisasmita (2012) is 1. effective transport performance and 2. efficient transportation performance. Smooth traffic and road transport is a state of traffic and the use of transportation that is free from obstacles and congestion on the road (Law No. 22 of 2009).

b. Transportation Capacity

According to Vuchic (1981), transportation modes are grouped into 3 modes according to their capacity, namely: 1. Low capacity mode or transit, which is a kind of minibus city transportation. 2. Medium capacity mode or street transit, which is a mode that uses road facilities mixed with other types of transportation modes, regular buses, fast buses, trolley buses, trailer buses, double decker buses and trams. 3. High capacity mode or semi rapid transit and rapid transit, which in operation is partly separated according to its own line and some still mix with other transportation, although it has its own line.

c. Effectiveness of Transportation

Effectiveness is a successful work to achieve predetermined goals, because the word "effective" is a state of success in achieving targets or goals that are really useful. While (Handayani 2002) provides an explanation that effectiveness is a measurement in the sense of achieving the predetermined targets or goals. Clearly, if the target or goal has been achieved as it is planned before, it is called effective. In its principle, the definition of effectiveness is an assessment of whether an activity/a system is achieved or not. (Sugandha in Kuswati, 2019)

Effectiveness is the main element to achieve the goals or objectives that have been determined in each organization, activity or program. It is said to be effective when the goal or objective is achieved in accordance with the predetermined. Mahmudi (2005) states that effectiveness is the relationship between output and objectives, the greater the contribution (contribution) of output to the achievement of goals, the more effective the organization, program or activity.

III. Research Methods

This type of research according to the level of explanation is descriptive quantitative. The approach of research conducted in this study is quantitative/associative/correlational (Rusadi, et al., 2014). This research was conducted on the road of Medan Johor District of Medan City with the object of research on the influence of transportation support capacity on the development of areas in Medan Johor District. The population in this study was the whole family head, while the sample was determined to follow slovin formula which obtained the number of samples as many as 99.68 people and rounded up to 100 respondents sample. The data collection techniques used are Literature, Observation, and Questionnaire Studies. Data analysis using multiple regression analysis.

IV. Results and Discussion

4.1 Effect of Road Conditions on Regional Development in Medan Johor District

The physical condition of the road used by the respondent community significantly affects the development of the area in The Medan District of Johor Kota Medan with a regression coefficient value of 0.509 and has a direct influence which means that each addition or increase in the score of the road physical condition score unit will increase the regional development value by 0.509 units of score. This result showed respondents' responses regarding indicators of physical condition of the road, such as the surface of the overall paved /concrete road network, not bumpy and not slippery, roads in the residential area are able to withstand heavy vehicle loads, no structural damage to the road such as cracks and holes, regular inspection of road conditions and road conditions by the Medan City Pu Office is in a good category.

4.2 Effect of Road User Safety on Regional Development in Medan Johor District

The safety of road users has an insignificant effect on the development of the area in Medan Johor District of Medan City with a regression coefficient value of 0.067. These results showed respondents' responses to road safety indicators such as road networks are safe from accident hazards, no anxiety to road users. Road equipment is well available on all road networks, and vehicle stability when crossing the road is in a pretty good category. The safety of road users has no effect because in addition to the safety of road users is influenced by indicators of road equipment, the stability of road users' vehicles, contained traffic regulations that must be adhered to. Traffic in Medan Johor district is equipped with traffic signs that must be obeyed so that people who cross the road in Medan Johor District will avoid vehicle accidents.

4.3 The Effect of Road User Comfort on Regional Development in Medan Johor District

The convenience of road users has a significant effect on the development of the area in the District of Medan Johor Medan city with a regression coefficient value of 0.289 and has a direct influence which means that each addition or increase in the score of the road user comfort score unit will increase the regional development value by 0.289 units of score. These results showed respondents' responses to road user comfort indicators such as road user body condition due to crossing the road, absence of air pollution that occurs in road users, no slowdown in vehicle speed when crossing the road, the effectiveness of travel throughout the road network, and road users do not experience excessive shocks when crossing the road is in the good category.

If road users when crossing the road feel comfortable, of course, will often travel and movement to the Medan Johor area so that economic activities remain. People who live in settled feel comfortable living in The District of Medan Johor so that in the future there will be the growth of new housing and new businesses such as the current J-City complex that offers housing locations and businesses that conduct economic activities so that the increase in the value of regional benefits for the people of Medan Johor District.

4.4 The Effect of Travel Speed on Regional Development in Medan Johor District

The speed of travel has a significant effect on the development of the region in the District of Medan Johor Medan city with a regression coefficient value of 0.362 and has a direct influence which means that each addition or increase in the score of the travel speed score unit will increase the regional development value by 0.362 units of score. These results show respondents' responses to travel speed indicators such as how long a trip is traveled in 1 (one) day, travel time traveled according to road users' expectations, low traffic speed in the morning and evening, and high traffic speed at night are in the good category.

The speed of travel affects the length of time the road user will get to the destination. With a good road there is no traffic accident and will be obtained the average speed. There are several points in the location of Medan Johor District, namely at Jalan Karya Wisata, Jalan Karya Jaya, Jalan AH. Nasution, Jalan Jamin Ginting under flyover, Jalan STM, Jalan Kuala Bekala are still experiencing a slowdown in the peak hours, namely in the morning (07.00-08.00 WIB), during the day (12.00-14.00 WIB) and in the afternoon (17.00-19.00 WIB). Congestion can affect delays so that time will get to the destination and affect economic activity.

4.5 The Effect of Smooth Transportation on Regional Development in Medan Johor District

Smooth transportation has a significant effect on the development of the region in the District of Medan Johor Medan city with a regression coefficient value of 0.297 and has a direct influence which means that each addition or increase in the score of the unit of transportation smoothness score will increase the regional development value by 0.297 units of score. This result showed respondents' responses regarding the smooth transportation such as safety from avoidance of transportation operations from accidents due to internal transportation factors, high accessibility because the transportation service network can reach as wide as possible medan Johor area, integrated transportation due to the realization of intra-mode cohesion and inter-mode in the network of infrastructure and transportation services that include the construction, construction and implementation so that it is more effective and efficient, sufficient capacity because the capacity of transportation facilities and infrastructure is quite available to meet the demands of users of transportation services, regular transportation because of transportation services that have a schedule of departure times and arrival times, smooth and fast transportation because of the short travel time with a high level of safety, transportation is easy to reach because the service to the vehicle and from the vehicle to the destination is easy in achieved by users of transportation services, transportation on time because transportation services are carried out with the right schedule, both on departure and arrival, so that the public can plan the trip with certainty, transportation is comfortable because of the realization of tranquility and enjoyment for passengers while in the means of transportation, transportation with affordable fares because of the realization of transportation services in accordance with the purchasing power of the community according to its class , while paying attention to the development of the ability of transportation service providers, transportation is orderly because the operation of transportation facilities in accordance with the prevailing laws and regulations and norms or values that apply in the community, safe transportation whether the avoidance of transportation operations from the consequences of external transportation factors either in the form of natural disturbances, human disturbances, or other disturbances, transportation with low pollution is due to buan gas pollution g, air, sound, and vibration pollution are as low as possible, and the volume of traffic in Medan Johor is affected by the environment and business activities around the road are in the good category. Economic activity in Medan Johor district is influenced by the smooth transportation sehingga provide regional attractiveness and overall factors will go to Medan Johor District as an area to invest and stay settled.

4.6 Effect of Transportation Capacity on Regional Development in Medan Johor District

Transportation capacity has a positive and significant effect on the development of the region in The District of Medan Johor Medan city with a regression coefficient value of 0.388 and has a direct influence which means that each addition or increase in the score of the transpotasi capacity score unit will increase the regional development value by 0.388 units of score. These results show respondents' responses regarding transportation capacity, such as what modes of transportation are often used to reach their destination, available all types of modes of transportation in the residential environment, economic aspects such as income level, legal aspects such as driver's license ownership and physical aspects such as body condition are indicators in the selection of the mode of transportation used, and in terms of the number of , public transportation modes in Medan Johor are enough to support the mobility of the community is in the good category. Vehicles passing through Medan Johor district consist of buses, namely Trans Metro Deli bus that passes through Jalan Jamin Ginting, four-wheeled vehicles, public and private transportation, and two-wheeled

vehicles. People can choose what mode of transportation is used to make movements and support their mobility so that economic activities can continue.

4.7 Effect of Transportation Effectiveness on Regional Development in Medan Johor District

The effectiveness of transportation has a positive and significant effect on the development of the region in the District of Medan Johor Medan city with a regression coefficient value of 0.272 and has a direct influence which means that any addition or increase in the score of the transport effectiveness score unit will increase the regional development value by 0.272 units of score. These results show respondents' responses regarding the effectiveness of transportation, such as public transportation modes in the Medan Johor area are easy to access, public transportation modes in Medan Johor are able to reach long distances, the frequency of transportation modes is influenced by the number of passengers and the capacity of the mode, by using public transportation it will be faster to reach the destination, not like the congestion because it will make the journey take a long time, felt that my travel time was in accordance with the distance traveled, and preferred public transportation because the operational time is 24 hours in the good category.

V. Conclusion

1. The physical condition of the road has a significant effect on the development of the District of Medan Johor.
2. Road safety has an insignificant effect on the development of Medan Johor District.
3. Road comfort has a significant impact on the development of Medan Johor District.
4. The speed of travel has a significant impact on the development of the District of Medan Johor.
5. Smooth transportation has a significant effect on the development of the District of Medan Johor.
6. Transportation capacity has a significant impact on the development of Medan Johor District.
7. Effectiveness has a significant effect on the development of Medan Johor District.

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