

## Analysis of Regional Interaction Patterns Suburbs of Medan City (Case Study: Sunggal District, Deli Serdang Regency)

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### Abstract

*The interrelationship of the rural-urban between Deli Serdang Regency and Medan City which are two-way and mutually beneficial can have a big impact on economic activities in both rural and urban areas so that it will improve the welfare of the people in the border areas of Deli Serdang Regency. This study aims to analyze the differences in people's income before and after working in the City of Medan, and the factors that people interact with in the city of Medan. The research method used is the average difference test and descriptive analysis. The results showed that people's income after working in the City of Medan had a higher income than before working in the City of Medan. The factor of people interacting with Medan City is dominantly influenced by jobs that produce higher salaries/wages in Medan City, better education and health facilities and services in Medan City.*

### Keywords

interaction; suburbs; community income; interaction factors



### I. Introduction

The development of villages can not be separated from the role of the city in the middle or around the countryside. The role of cities in rural development, as expressed by Douglass (1996) includes 7 (seven) important things, namely as a spending center, a higher tiered service center, a marketing center for various products produced by the countryside, a center for agricultural provision and support, a center for processing agricultural products (agro-processing), a non-agricultural rural labor absorber and a practical and innovative information and learning center.

The concentration of development in urban areas caused the migration flow of villages to increase. In line with the flow of population mobility, the mobility of labor from village to city is increasingly showing a sharp increase. The number of people living in Indonesian cities also showed a significant increase. In 1930, the population living in the city amounted to 6.7 percent and in 1990 it increased to 30.9 percent. In 1995, the percentage of the population living in the city was 34 percent or about 70 million people. Predicted that by 2020, the number of people living in urban areas will reach 140 million or 57 percent of the total population of Indonesia (Sugiharto, 2005).

The suburb is an area that experiences dynamics in its development, especially dynamics in land use. This is due to the increasing need for land for settlements and accommodating the functions or infrastructure of existing activities. The phenomenon of spatial development often occurs in large and medium-sized cities. Big cities, such as Medan City, bring the consequences of inflating urban building spaces to exceed the limits of their administration. In the end, the administrative border areas between Medan City and Deli Serdang Regency, especially in villages in Deli Serdang Regency experienced rapid development called rapid growth area.

Deli Serdang Regency is an area where part of the district surrounds the city of Medan, so it can be said that the lives of the people in Deli Serdang Regency have blended with the lives of the people of Medan city. This condition provides an overview where the

people of Deli Serdang Regency are a 'mixed' community between the village community and the city community (mixed rural and urban). This can be seen clearly in the residents of Deli Serdang Regency who have a high enough level of mobility to the city of Medan.

Historically, the residents of Deli Serdang Regency are people who live off agriculture has shifted in the business sector of trade and services and industry (non-agriculture). In addition, another indicator is the change in land use from agricultural to non-agricultural land. This can be seen in the use of land for settlement development, industry and the demand from the business sector to develop its activities. This condition is supported by the position of Deli Serdang Regency which is quite strategic and is a hinterland area of Medan City. This linkage is facilitated by the existence of land transportation networks which is one of the aspects that form village-city interaction, because with the support of relatively good transportation facilities and infrastructure allows the villagers to be oriented to the city or vice versa from city to village.

One of the sub-districts in Deli Serdang Regency that experienced regional development due to land use changes is Sunggal District. Judging from the location of the area, Sunggal District Deli Serdang Regency is flanked by two cities, namely the east bordering the city of Medan and the west bordering Binjai City. Sunggal District has experienced the development of the region where every year has increased and increased population, thus causing the means of need to continue to increase. Villages in Sunggal District of Deli Serdang Regency are experiencing development, this can be seen from the types of services that exist such as benefits and housing complexes.

In Sunggal District also seen commuter migration, namely in the morning residents from rural areas travel to urban areas and vice versa in the afternoon the residents travel back from urban areas to rural areas. Thus from time to time this urban fairy area will be more widespread both in terms of morphological and socio-economic. Migration of villages that can have positive and negative impacts. The positive impact is that migration will push towards modernization and improve the lives of migrants. While the negative impact arises housing/settlement problems and traffic congestion due to limited facilities and infrastructure.

Seeing the development that occurred in the Sunggal District of Deli Serdang Regency, it is necessary to study how the development of regional interaction between villages located in Sunggal District of Deli Serdang Regency and Medan City. By looking at the interactions that exist in these two regions, it is expected to obtain an overview of the interactions that occur to the welfare of the people of Deli Serdang Regency. The purpose of this study is to: 1) Analyze differences in people's income in Sunggal District Deli Serdang before and after working in Medan City, and 2) Identify factors that affect the community in interacting in the border area.

## **II. Review of Literature**

### **2.1 Definition of Village**

Morphologically the village is an area reserved for agrarian activities and the rest for buildings scattered in small population and low density. Economically it is a region with the characteristics of agrarian activities that dominate the lives of its people, socially the village is a region with the characteristics of social life and close familial relations and is still fixated on customs and demographically the village is a region with a population of about 2,500 people (Ma'rif in Suprpta, 2006).

According to Bintarto in Koestoer, (1997), the village is the result of a combination of the activities of a group of humans with their environment, which is characterized by

non-dense settlements, scarce means of transportation and the use of rice fields. Other characteristics are in the form of social elements forming the village, namely the population and the order of life where the family rope ties in the village are very close which is characterized by the dominant behavior of gotong royong community. According to Landis in Rahardjo (1999), the definition of village is sorted into 3 (three) namely: (1) The village is an environment whose population < 2,500 people. (2) The village is an environment whose residents have a close and informal relationship between their fellow citizens. (3) The village is an environment whose population depends on the agricultural sector. Angelia, *et al* (2020) stated that village community institutions are a forum for village community participation as village government partners and are tasked with empowering village communities, participating in planning and implementing development, and improving village community services. Soekanto in Ismail (2019) social change refers to changes in social aspects, community governance, and group behavior patterns.

Rural areas are areas that have the main agricultural activities, including the management of natural resources, with the arrangement of regional functions as a place of rural settlements, government services, social services and economic activities. The rural center is a service center that can directly increase agricultural production, social services and the economy of the village.

## 2.2 Definition of City

According to Adisasmita (2010), the city is defined as a surface area where there is a concentration (concentration) of the population and various types of economic, socio-cultural and government activities. Dickinson in Jayadinata, (1999), states that the city is a settlement whose house buildings are close, and its inhabitants lust for not agriculture and the city can be recognized by its population. In Indonesia according to statistical data, an area can be called a city if the population is at least 20,000 people and the city can be characterized by urban infrastructure such as government buildings, hospitals, markets, schools, regular open spaces, parks, networks, paved roads, electricity and entertainment venues.

Bintarto (1989), in terms of geographical cities can be interpreted as a network system of human life characterized by a high population density and colored with hetrogen socio-economic strata and materialistic patterns or can also be interpreted as a cultural landscape caused by natural and non-natural elements with symptoms of population concentration that is large enough with heterogeneous and materialistic patterns of life compared to the back region (hinterland).

Sujarto (1997) generally limits the understanding of the city in terms of several aspects, namely: demographically is a high population concentration with a high density compared to the surrounding area; Sociologically it has always been associated with the limits of heterogeneous nature of its population as well as urban culture that has reduced village culture; economically a city is characterized by a dominant proportion of employment in non-agricultural sectors such as industry, services and services, transport and trade; physically a city is characterized by the dominance of built up areas and built structures; geographically the city is defined by a center of activity associated with a strategic location; Administratively the government of a city can be interpreted as an area of authority limited by a jurisdiction established under the regulations per applicable law.

### **2.3 City Village Interaction**

According to Bintarto (1989), interaction can be seen as a social process, economic process, cultural process or political process and the like and slow or fast can give rise to a reality or reality. As well as the interaction of villages and cities can occur due to various factors or elements that exist in the village, in the city and between the village and the city. The progress of village communities, the expansion of village-city road networks, the integration or influence of cities on villages, the mutual needs of villages-cities have spurred village-city interaction gradually and effectively.

According to Roucek in Suprpta (2006) interaction is a process that is reciprocal and has an influence on the behavior of the parties concerned through direct contact. Short in Suprpta (2006) says that interaction is an urban system and the order of small cities through the flow of people, goods and ideas. This flow is the dynamics of the urban system and is an area of the human movement system in carrying out activities in the form of trips to work, shopping trips, family visits and trips for recreation, but the reason for movement in general is an economic reason, residents tend to move if there are better job prospects and salaries in addition there are reasons in the form of social, such as lack of poor social services and lack of individual freedom.

The interaction of urban villages can be seen from the homogeneity of village life that is decreasing, the change in the livelihoods of residents from the agricultural sector to the industrial and service sectors, the changing function of agricultural land for housing and industry, the increasing rate of migration of villages and commuters, the increasing level of education and welfare of the community, and the changing function of villages as a source of food and vegetables.

### **2.4 Impact of Interactions on Well-Being Levels**

Interaction between regions occurs due to the interconnectedness of transportation network systems, social, technological, political, economic and other institutions. The structure of transportation has a very important role in supporting the development of the region and stimulating economic activities. The existence of a road network can facilitate the movement between knot units, so as to facilitate the flow of goods and services. The smooth flow of interaction of goods and services will increase the intensity of interaction. Furthermore, the higher the intensity of interaction, the more advanced the economic level of the community. The goal of developing a region that is universal is to improve the standard of living or realize the welfare of the community that is getting better. People are said to be prosperous if they can easily meet the needs of life, both physiological or biological and psychological social needs, with adequate quality, quantity and intensity.

A region can be developed if it has natural resources equipped with human resources with education levels, cultural levels, technology and capital sufficient to be able to process and utilize available natural resources for the prosperity and welfare of its people. Recognizing that development always has an impact, both positive and negative, indicators are needed to measure development performance. During this time the level of per capita income is widely used to measure development performance, especially the economic development of a country, but it does not provide a real picture of the level of public welfare. Bintarto (1989) revealed that usually the indicators in measuring the level of well-being are the level of per capita income, Gross National Product, economic growth, nutritional state, health, education and social criteria for well-being.

### **III. Research Methods**

#### **3.1 Type of Research**

This type of research according to the degree of explanation is quantitative descriptive. Explanatory level research is the level of explanation. This research intends to explain the position of the variables studied as well as the relationship between one variable and another while descriptive research is research conducted to find out the value of independent variables, either one or more variables (independent) without making comparisons, or relationships with other variables.

The nature of this study is descriptive explanatory. Explanatory research is a study that intends to explain the position of the variables studied and the relationship between one variable and another. The research approach conducted in this study is quantitative / associative / correlational, namely the analysis of data using inferential statistics, with the aim of knowing the degree of relationship and form of influence between free variables and bound variables. Because this study aims to find out the relationship between two or more variables (Rusiadi, et al, 2014). This study discusses the interaction patterns of Medan suburbs (Case Study Sunggal district deli serdang) which includes community income and community factors interacting.

#### **3.2 Research Site**

This research activity was carried out in the border area of Sunggal District of Deli Serdang Regency with Medan City Subdistrict of North Sumatra Province.

#### **3.3 Types and Sources of Research Data**

The data needed in this study is primary and secondary data. The primary data in this study on people's income and community factors conducted interactions obtained through questionnaires and interviews, as well as observations into the field. While secondary data is obtained from various agencies such as BPS, and other agencies related to this research.

#### **3.4 Population and Sample**

This study examined the analysis of the interaction patterns of suburban areas in Medan City (Case Study of Sunggal District deli serdang regency). Therefore, the population in this study is the entire head of the family (KK) of the village community who interacts to the city in making a living and social activities in Sunggal District of Deli Serdang Regency bordering Medan City. The sample will be selected using a multi stage sampling method. Considering that the community to be studied is homogeneous, seen from the administrative region and interacts in making a living and social activities, then in the early stages selected villages located in Sunggal Subdistrict purposively. The criteria is that the villages located in Sunggal Subdistrict border the city of Medan. Based on these criteria obtained 7 (seven) villages namely Tanjung Gusta Village, Helvetia Village, Kampung Lalang Village, Paya Geli Village, Sunggal Kanan Village, Sekata Beras Village, and Tanjung Selamat Village.

The second step is to determine the number of respondents. The sample of respondents was determined to follow the opinion of Roscoe (Sugiyono, 2003), which stated that regardless of the population, in social research the sample size that is worth using is between 30 to 500 people. Based on the above opinion, researchers determined a sample of 70 respondents who interacted to Medan city in making a living and social activities, on the grounds: 1) has exceeded the threshold of Roscoe criteria, which is a limit of at least 30 people; 2) Considering the village community to be studied is homogeneous,

seen from making a living and social activities to the city of Medan. Thus the determination of 70 sample members is considered to have been representative.

The third stage is to determine the distribution of the respondent's sample. The sampling technique of respondents based on the village is carried out by quota sampling, which is a sample research method by determining the quota in advance in each village set as many as 10 people. Sampling is done purposive sampling is a sampling method based on certain criteria, namely people who interact to Medan city in making a living and social activities in each village in Sunggal Subdistrict.

Classification of respondents based on:

- a. The age of respondents between 25 to 60 years, is the productive age to try and household.
- b. The education of respondents of SLTP graduates up to the completion of Strata 1, is the level of education respondents are considered able to understand and understand about the question material asked about the pattern of interaction of the periphery.
- c. Having a steady job, is the ability of the head of the household to be able to prosper his family.
- d. People have jobs in the city (interacting).
- e. Having a primary income, is the ability of the head of the household to be able to prosper his family.

### 3.5 Data Analysis Techniques

To obtain primary data, questionnaire techniques are used that are distributed directly to research respondents. Secondary data was obtained from the Central Bureau of Statistics Deli Serdang regency and other agencies related to this study. To answer the purpose of this study using an average difference analysis test for paired samples (paired samples test t test) and descriptive analysis. The formula used is:

$$t = \frac{\bar{x}_{1i} - \bar{x}_{2i}}{\sqrt{S^2 p \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Information:

T = Different tests

$\bar{X}_{1, 1}$  = Average income of people before working in Medan City

$\bar{X}_{2, 1}$  = Average income of people after working in Medan City

n1 = Number of respondents before working in Medan City

n2 = Number of respondents after working in Medan City

s2p = Paired Raw Deviation

The decision-making criteria in the average difference test for paired samples (paired samples test t test), which is to compare the value of t count with the value of t table:

Ho accepted if t count < t table on  $\alpha = 5\%$

Ho rejected (Ha accepted) if t count > t table on  $\alpha = 5\%$

## IV. Results and Discussion

### 4.1 Community Income

Income is the result of a person's efforts to meet the needs of himself and his family. The income of the respondents after working in Medan city is quite varied. To test the impact of working in Medan city on people's income is to compare income levels in two different circumstances, namely after working in Medan City and before working in Medan City. So that it can be concluded that the interaction of villages to cities has a positive impact on people's income if there is a difference in the average income of the community after working in Medan City and before working in Medan City.

To find out the difference in people's income before working in Medan City and after working in Medan City, testing was conducted using community income data before working in Medan City and community income data after working in Medan City. Based on the results of the data obtained test results as in Table 4.1.

**Table 1.** Results of Community Income Calculation after and before Working in Medan City

Description	Value (Rp)	t-Count	Sign
Prior Income (Before working in Medan City)	1.635.714	35,416	0,000
Income After (After working in Medan City)	1.957.143		
<b>Difference</b>	<b>321.429</b>		

Source: primary data processed (2018)

Based on the results of Table 4.1. It is seen that the overall income of the community after and before working in Medan city shows a difference. To prove the above hypothesis, using a test analysis of two paired samples and from the statistics of paired samples it is known that the average value of income after working in Medan City is Rp. 1.957.143 per month and the average value of income before working in Medan City is Rp. 1.635.714 per month. These results showed a difference of Rp. 321.429 per month or an increase of 18.65% before working in Medan City (Rp. 321.429 / Rp.1.635.714 x 100%).

By using a paired test analysis of two samples, what needs to be known is whether there is a difference in the average income after working in Medan City and before working in Medan City with a significance level of 0.05. So that from the SPSS analysis output table, the t-count value is 35.416 and the P-value is 0.000. The t-table value can be seen in the statistical table at a significance of 0.05:  $2 = 0.025$  (two-tailed test) with degrees of freedom (df)n-1 or  $70-1 = 69$ , then the results obtained for the t-table are 2.021. Based on the calculation results, it is known that:  $t_{\text{arithmetic}} > t_{\text{table}}$  ( $35.416 > 2.021$ ).

It can also be seen from the results of SPSS calculations that the average income of the community after working in the city of Medan is higher than the average income before working in the city of Medan. This means that working in Medan City has a positive impact on increasing the income of the Sunggal Village community. People who interact more work as traders, builders and work in private companies. The level of wages in Medan City is higher than in the village of Sunggal District, Deli Serdang Regency, so that people prefer to find work in Medan City. The limited land area in the city of Medan, causes the need for housing is still not sufficient. This condition causes the people of Medan City to tend to build housing in suburban areas. We can see this from the number of people in Medan City who build settlements in border areas.

Sujarto, (1997) the condition of land on the outskirts of the city is relatively empty and prices are still relatively cheap compared to the city center, encouraging the development of the city, especially the use of residential land spread sporadically in the suburbs. This is used by border residents to find work in the suburbs of Medan. Interaction between regions is influenced by population, distance, educational facilities, health facilities and means of trade between cities and interacting rural areas.

The driving factors of interaction in the border village of Sunggal District of Deli Serdang District to Medan City are caused by unemployment, lack of services and facilities of education, health and trade, and poor social life. The factors attracting interaction in the border village of Sunggal District deli serdang district to Medan city due to the opportunity to work and strive, services and facilities for better education, health, and trade, and better social life.

The village-city linkage between Deli Serdang Regency and Medan City is two-way and symbiotic mutualistic and benefits (generative) which has a positive impact, both on economic activities in rural and urban areas so that it will improve the welfare of the community. The interaction of urban villages can be seen from the homogeneity of village life that is decreasing, the change in the livelihoods of residents from the agricultural sector to the industrial and service sectors, the changing function of agricultural land for housing and industry, the increasing rate of migration of villages and commuters, the increasing level of education and welfare of the community, and the changing function of villages as a source of food and vegetables.

The existence of rural-urban interaction can be seen from the change in people's livelihoods from the agricultural sector to the economic, trade, service and industrial sectors. It can also be that village-city interaction is indicated by the pace of commuting, this symptom can be seen in the flow of traffic on road segments in the border area of the region. Sunggal District Deli Serdang Regency with Medan City in the hours before and after work.

From the interaction between these regions it can be known that the relationship between village and city is theoretically influenced by distance and population or number of public facilities. But this does not guarantee an area that is located far away must be a weak interaction relationship. More in-depth analysis of the potential / advantages of an area, high accessibility, infrastructure conditions such as smooth roads and bridges and the development of other regions that help strengthen inter-regional interaction in line.

## 4.2 Interaction Factors

The people of the border area of Sunggal District of Deli Serdang Regency in conducting interactions are influenced by work, education and health factors.

### a. Work Factor

Employment factors that affect people in the border region interact due to higher salaries / wages in Medan city and not getting a job in the village.

**Table 2.** Community Factors in Work

No.	Criterion	Number (people)	Percentage (%)
1	Higher salary/wages	46	65,71
2	No work in the village	24	34,29
	<b>Sum</b>	<b>70</b>	<b>100</b>

Source: primary data processed (2018)



Community factors in employment show a higher salary / wage than salary / wages in the village as many as 46 respondents (65.71%) while unable / there are jobs in the village as many as 24 respondents (34.29%). This shows that the community factor to earn a higher salary / wage greatly affects the mindset of the community to be able to work or the opportunity to try in the city of Medan. High community income can meet the primary and secondary needs of the community. The adequacy of the primary and secondary needs of the community can improve the welfare of the community.

### b. Educational Factors

Educational factors that affect people in the border region interact due to better education in Medan City.

**Table 3.** Community Factors in Education

No.	Criterion	Number (people)	Percentage (%)
1	Better education	43	61,43
2	Lack of educational facilities in the village	27	38,57
	<b>Sum</b>	<b>70</b>	<b>100</b>

Source: primary data processed (2018)

Community factors in education showed better education than education in the village as many as 43 respondents (61.43%) while the lack of educational facilities in the village as many as 27 respondents (38.57%). This shows that the community factor to get a better education greatly affects the mindset of the community to be able to accommodate their children in Medan city.

### c. Health Factors

Health factors that affect people in the border region interact due to better health services in Medan City.

**Table 4.** Community Factors in Health

No.	Criterion	Number (people)	Percentage (%)
1	Better service	40	57,14
2	Lack of health facilities in the village	30	42,86
	<b>Sum</b>	<b>70</b>	<b>100</b>

Source: primary data processed (2018)

Community factors in health showed better health services than health services in the village as many as 50 respondents (62.50%) while the lack of health facilities in the village as many as 30 respondents (37.50%). This shows that the community factors to obtain better health services greatly affect the mindset of the community to be able to obtain health services in Medan city.

The factors of society mentioned above are an indicator or supporting media for every human being so as to cause a high spirit of work and effort and have full responsibility for a job done. If this is done well then everyone will strive to improve their well-being. The existence of community factors interacting will cause passion and business spirit of the community that interacts to the city until finally thanks and perseverance and

seriousness in work that has an impact on increasing income and improving the welfare of the community in every business.

The factors of community interaction are psychological processes that enhance and direct behavior to achieve goals. For people who interact, these factors need to be done to improve their ability to try. The factors of society are part of an effort in humans to be able to channel inspiration, passion in achieving goals. In addition, the factors of society are also a function that is classified as most closely related to the human element in trying to increase income because it is an activity that channels and maintains human behavior for the achievement of a business.

## V. Conclusion

The income of the people of Sunggal District of Deli Serdang Regency who work in Medan City has a positive impact on the welfare of the community. This is shown from the increase in income in people who work in Medan city.

Community factors interacting with urban villages in dominant occupations are influenced by higher salaries/wages in Medan city than in the village. The factors of the community interacting with the city village in education and health are predominantly influenced by the existence of education and better health services in Medan city than in the village. The interaction of urban villages has an influence on the welfare of the community, this is because the community obtains income and services that are more satisfactory in the field of education, and health.

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