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ANALYSIS OF MEDAN CITY STRUCTURE BASED ON DISTRICT / CITY SPATIAL PLAN

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Abstract

This research aims to analyze and determine the suitability of determining the Regional Spatial Plan (RTRW) for Medan City for 2022-2042 in several sub-districts, as the center of economic growth in Medan City. Also to determine the level of geographic distribution of the availability of public facilities in each sub-district in Medan City. The research method used is a qualitative research method with a descriptive approach. The qualitative-descriptive method is a research procedure that produces descriptive data in the form of written or spoken words and observable behavior. The results of the research show that there are several sub-districts that do not comply with the Medan City RTRW projections for 2022 - 2042 in terms of urban spatial structure and there are also sub-districts whose designation is appropriate. This can be seen from the results of scalogram analysis and regional gravity analysis.

Keywords: Structure, Medan City, RTRW, Suitability

A. INTRODUCTION

A.1 Background

Medan City, as the capital of North Sumatra Province, is a significant center of economic, social and cultural community activities in the region. With an ever-growing population and intense economic activity, the city of Medan faces various challenges in planning and managing urban space. One of the prominent problems is the gap in public services that occurs in various parts of the city. This gap includes access and quality of education services, health, infrastructure and other public facilities. Regional Spatial Planning (RTRW) is an important instrument in regulating land use and directing city development. Medan City's RTRW and surrounding districts/cities play a key role in ensuring equal and fair distribution of public services. However, the implementation of RTRW often faces challenges such as uneven population growth, population migration from villages to cities, and economic pressures that cause rapid and uncontrolled changes in land use.

Public service gaps can negatively impact people's quality of life, increase social inequality, and exacerbate urban problems such as congestion, environmental degradation, and economic instability. Therefore, analyzing the spatial structure of Medan City based on Regency/City RTRW is important to understand the extent to which spatial planning can overcome or even worsen public service gaps. The solution to accelerate development is to establish a growth center in the area. This can overcome limited funds in carrying out development by focusing on one region, namely the region that acts as a center of growth. In increasing its development, this can take the form of completing facilities and improving infrastructure. It is hoped that the growth center area can have a positive spillover effect on the hinterland areas from the growth center area. Growth centers are areas that are used as trade centers, industrial centers, service centers and economic centers. Infrastructure and facilities play an important role in improving the community's economy and regional development. It also affects community welfare and disparities between regions. The more complete the facilities a region has, the easier it is for people to

access them so that it can improve community welfare and community satisfaction with existing services. Economic growth in growth center areas can provide positive benefits or spillover effects to the hinterland, so that the existing gap is not too big. By determining the center of growth by focusing growth, especially the economy in that area, it will spread beneficial effects to the surrounding areas. The development of growth center areas will increase production in the hinterland areas so that the hinterland areas will also experience development.

The large number of universities in Medan City has resulted in a high level of immigrants coming to study at universities in Medan City. With the increasing number of residents in Medan City, it is necessary to improve facilities as a driver of economic activity and services to the community. The facilities owned by each sub-district are definitely different. These differences in facilities will become a hierarchy for determining growth center areas. The sub-district that has the most complete facilities will become the center of growth. And sub-districts that lack facilities will become hinterlands or supporting areas for the central region. Determining the growth center and hinterland areas can be determined using scalogram analysis. And gravity analysis is used to see the relationship or interaction between each sub-district which is the center of growth and the sub-district as a hinterland.

A.2. Formulation of the problem

1. How appropriate is the determination of the Medan City Regional Spatial Planning (RTRW) in determining a sub-district as the center of economic growth in Medan City.
2. What is the level of geographical distribution of the availability of public facilities in each sub-district in Medan City?

A.3. Research purposes

1. Identifyand analyzing the distribution of public services in Medan City.
2. Evaluate suitability between RTRW and the reality of public service distribution.
3. Findfactors contributing to public service gaps.
4. **Develop recommendations for improving spatial planning policies that can reduce these gaps.**
5.

A.4. Research methods

In this research, a descriptive-qualitative analysis method was used, to look at the sub-district areas which are the centers of growth in Medan Municipality, as well as analyzing the facilities owned by each sub-district in Medan Municipality.

A.4.1. Data Types and Collection

The type of data studied is secondary data, namely data obtained from other sources. In this research, the data obtained came from the Central Statistics Agency (BPS) of North Sumatra Province using the internet. To carry out the analysis in this research, the data used is data about the number of social and economic facilities owned by the 21 sub-districts in Medan Kodya. The name of the district is; Medan Labuhan District, Medan Belawan, Medan Marelan, Medan Deli, Medan Tuntungan, Medan Sunggal, Medan Johor, Medan Helvetia, Medan Selayang, Medan Amplas, Medan Denai, Medan Polonia, Medan Tembung, Medan Timur, Medan Petisah, Medan Baru, Medan Area, West Medan, Medan City, Medan Struggle.

From each sub-district you will see what facilities are available, and how many there are. The types of facilities seen include,

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1. Education facility
2. Health facility
3. Worship place
4. Economic means

A.4.2. Analysis Method

1. Geography Concentration Analysis

Geographic concentration measures the level of distribution of economic growth facilities in Medan City. The calculation formulation is as follows

$$GC = 100\sqrt{\sum \left(\frac{xi}{xt}\right)2}$$

Information:
GC : level of geographic concentration
xi : number of economic growth facilities ineach sub-district
xt : total number of growth facilities in Medan City

After the GC calculation is carried out, it is continued by comparing the middle limit GC values. The GC middle limit (GCBT) is the sum of the GC upper limit and lower limit divided by two. The upper limit GC value (GCBA) is a geographic concentration that assumes export commodities are only focused on one region. The lower limit geographic concentration (GCBB) shows the amount of geographic concentration that is assumed to be distributed evenly across export commodities.
In summary, the GCBT calculation is:

$$\frac{(GB+GB)}{2}$$

To determine whether a facility is concentrated or distributed, this is done by comparing the calculation of the GC value compared to the GCBT value.

2. Scalogram Analysis

The analytical tool used in this research is the scalogram model. A scalogram is an analytical tool for identifying regional growth centers based on the facilities they have, so that a hierarchy of growth centers and service activities in a region can be determined (Rondinelli, 1985). This analysis is used to see the number and type of facilities in each sub-district in Medan Kodya. From the number of available facilities, it can be determined that the sub-district which is the center of growth in the Medan Municipality is the sub-district with the most complete facilities. Meanwhile, sub-districts with incomplete facilities will become hinterland areas or supporting areas. The formula used to find the number of classes in each sub-district as growth centers is as follows,

$k = 1 + 3.3 \log n$

Information:
k = many classes
n = number of sub-districts

Next, determine the size of the class interval or range using the following formula;

$$\text{Range} = \frac{A-B}{k}$$

Information:
A = highest number of facilities
B = lowest number of facilities
k = many classes

The final step in carrying out scalogram analysis is to calculate the Coefficient of Reproducibility or COR, which has the function of testing the feasibility of scalogram analysis. Research using scalogram analysis can be said to be feasible if the COR value is 0.9 to 1. Cor is calculated using the formula as below;

$$(CR) = 1 - \frac{\sum e}{N}$$

Information:
CR: error rate
∑e : Number of errors
N: Number of facilities
K: Number of sub-districts

3. Gravity Analysis

Gravity analysis is used to see the magnitude of the attractiveness of a potential in a location, the relationship between the potential of a location and the size of the area of influence of that potential (Utoyo, 2007).

The formula for gravity is as follows,

$$Aij = k \frac{Pi \times Pj}{(dij)^b}$$

Information :
Aij = The magnitude of the interaction between region i and region j
Pi = Population in region i, in thousands of people
Pj = population in region j, in thousands of people
dij = Distance from region i to region j, in kilometers
k = Empirical constant number, value 1
b = The frequently used power of dij b=2

This formula is to see the relationship or interaction between sub-districts as growth centers and sub-districts which are hinterlands or supporting areas.

B. LITERATURE REVIEW AND THEORETICAL BASIS

B.1. Literature review

In conducting research, apart from using theories, the results of previous research are also used as a reference and illustration in conducting this research. Research conducted by Gulo (2015). The research aims to identify sub-districts in Nias Regency. From the results of this research, it was found from the analysis using a scalogram that in Nias Regency the main growth center was Gido District, the second growth center was Idanogawo District and the third growth center was Botomuzoi District. Gido sub-district can be said to be the main growth center because it has the most complete facilities and has greater functions compared to other sub-districts. The more complete the economic and social facilities

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you have, the more people will be interested in carrying out activities in the area. Research by Nainggolan (2013) aims to find the center of growth in Simalungun Regency and see the relationship between the center of growth and its outskirts (hinterland). The results of the scalogram analysis showed that there were 30 types of facilities from all facilities in Simalungan Regency. The results of the analysis used in this research show that there are 5 sub-districts which are the centers of growth, namely Siantar District with Gunung Malela District as its hinterland, Bandar District with its hinterland Pematang Bandar District, Tanah Jawa District with its hinterland Hatonduhan District, Raya District with Panei District as its hinterland area, and Bosar Maligas District with Bandar District.

Another research conducted by Utari (2015), aims to determine the characteristics of the City of Yogyakarta and find out which sub-districts are the centers of growth in terms of the completeness of the available facilities which are adapted to the growth centers of the City of Yogyakarta. The research uses a scalogram analysis tool. The research results show that there is a discrepancy in the results of the scalogram analysis with the sub-districts which are projected to become city centers in the Yogyakarta City RTRW. The Yogyakarta City Government projects Gedongtengen District, Gondomanan District and Danurejan District as growth centers. However, the results of the analysis show that Umbulharjo District and Gondokusuman District have better facilities than other sub-districts even though Umbulharjo District and Gondokusuman District are not districts projected to become growth centers in Yogyakarta City.

Research by Danastri (2011), aims to determine the strength of interaction between regions in Harjamukti District, analyze the needs needed to develop a growth center, and to find out which development areas can be designated as growth poles to encourage development in the Harjamukti District region. The analytical methods used include primary survey economic analysis, gravity analysis, scalogram analysis, and overlay method. From the results of the analysis using gravity, it can be seen that all sub-districts in Harjamukti District have strong interactions with the center of Harjamukti District, namely Kalijaga District. With scalogram analysis, the subdistricts with the most complete facilities can be ranked as Kecapi Subdistrict, Harjamukti Subdistrict, Kalijaga Subdistrict, Larangan Subdistrict, and Argasunya Subdistrict as the subdistricts with the fewest facilities.

Research conducted by Habib (2016), aims to find out which sub-districts are the growth centers in West Tulang Bawang Regency and the interaction between the growth centers and the hinterland areas. The research was carried out using an ordinal scale and gravity index. The result that can be obtained is that Tulang Bawang Tengah District, as the capital and administrative center of West Tulang Bawang Regency, becomes the center of growth with three hinterland areas, namely Tulang Bawang Udik District, Tumijajar District and Pagara Dewa District. The strongest interaction with the growth center was obtained from Tulang Bawang Udik District, which is located closer to Tulang Bawang Tengah District, with an interaction value of 6,943,036.09. Meanwhile, the strength of interaction with Tulang Bawang Tengah District and Tumijajar District is 5,084,954.9, and the strength of interaction with Pagar Dewa District is 51,360.47.

B.2. Theoretical basis

B.2.1. Growth Center Theory

The growth center theory or Growth Poles Theory was introduced by French economist Francis Perroux. Sjafrizal (2008) explains Perroux's theory about pole croisanse or pole de development, which means a growth center as a set of industries that are experiencing development and are located in an urban area and encourage further development of economic activities through their area of influence. He also said that "growth does not grow", he found this in his analysis of the vehicle industry which tends to be clustered in certain regions. In this way, economic growth tends to be concentrated in certain areas, driven by agglomeration benefits that arise due to the concentration of economic activity. The emergence of several concentrations of economic activity then also encourages increased efficiency of

economic activity which has a positive impact on national economic development.

B.2.2. Central Place Theory

The central place theory was put forward by a German geographer, Walter Christaller. Hartono (2007) explains Christaller's theory about a central city which is the center for the surrounding area and becomes a trade link with other regions. According to Christaller, each order has its own hexagonal region. This hexagonal service pattern is theoretically capable of achieving optimization in terms of transportation, marketing and administration efficiency (Hagget, 2001). Cities as service centers are expected to have service facilities such as;

a. Centers and shops are the focal points of a city.
b. Transportation facilities and infrastructure.
c. Recreation and sports place.
d. Educational facilities, health, tourist attractions.

In this way, the city provides all the facilities for life, both social and economic, so that both a place to live and work and be creative can be done in the city (Jayadinata, 1992).

B.2.3. Regional Economic Growth Theory

Hirschman's theoretical concept, explained by Sjafrizal (2008), states that he prioritizes attention to unbalanced regional growth. Where geographically regional economic growth will be influenced by progress in a region at one point which gives rise to encouragement towards the development of subsequent points or places. Hirschman's theory sees that the level of development in a region tends to be reached at several growth points. Where economic activities or activities are more centered on that area because of the availability and completeness of service facilities compared to other places. The impact will be an increase in migration from outside areas to growing center areas.

B.2.4. Gravity Theory

The theory of gravity was first introduced in physics by Sir Issac Newton. Utoyo (2007) explains the essence of the theory of gravity that two objects that have a certain mass will have an attractive force between them which is known as the gravitational force. WJ Reilly believes that the strength of interaction between two different regions can be measured by taking into account the population and the distance between the two regions.

This gravity theory can be used to quantitatively analyze the magnitude of the influence of interactions between adjacent regions, assuming that a region is an object and the population of the region concerned is its mass. The magnitude of the interaction force can be realized in the form of the magnitude of movement or transportation and communication between two regions. The manifestation of this movement can be in the form of people, goods, services, or information (Hartono, 2007).

B.3. Regional autonomy

Based on Law no. 32 of 2004 Article 1 number 5, regional autonomy is the right, authority and obligation of an autonomous region to regulate and manage its own government affairs and the interests of the local community in accordance with statutory regulations. Haris Smith explained that the role of government in regions that is run democratically will provide greater space for the community to participate in expressing their sovereignty. This will not only strengthen local democratic processes, but also contribute to democracy and national integration (Harris et al, 2006).

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B.4. Medan City Regional Spatial Plan

According to Medan City Regional Regulation Number 1 of 2022 concerning Medan City Regional Spatial Planning for 2022 – 2042, the aim is to:

a. Implementation of space utilization based on archipelagic insight and national resilience.
b. Implementation of spatial utilization regulations for protected areas and cultivation areas.
c. Achieving quality space utilization to create an intelligent, prosperous and sustainable national life.
d. Realizing the protection of space functions and reducing negative impacts on the environment.
e. Increasing the use of natural resources and artificial resources in an efficient, effective and appropriate manner.
f. Prevent conflicts of interest in the use of resources.
g. Improving natural conditions and infrastructure to develop tourism
h. Improving infrastructure and facilities to develop education and culture.

Directions for the development of urban systems in the Regional service system are planned as follows:

a. city service center (PPK);
   Merdeka Field in West Medan District which functions as a center for trade/business activities, center for provincial and city government services and activities, as well as a regional scale transportation service center centered at TOD Merdeka Field which serves the central area of Medan City; and Labuhan in Medan Labuhan District which functions as a regional service and trade activity center, transportation service center, socio-cultural activity center, and industrial activity center as well as a defense and security center centered at TOD Labuhan which serves the northern area of Medan City.
b. city service sub center (SPPK);
   Medan Belawan which functions as a sea transportation service center, loading and unloading and import-export activity center, defense and security service center, industrial activity center and fisheries activity center; Medan Labuhan which functions as a center for service and trade activities, a center for sports activities, a center for socio-cultural activities and a center for health services; Medan Marelan which functions as a center for trading activities in basic necessities and a center for tourist activities; Medan Perjuangan which functions as a center for trade/business activities and a center for educational services; Medan Amplas which functions as an economic service center and transportation service center; Medan Sunggal which functions as an economic service center, transportation service center and socio-cultural activity center, as well as a defense and security service center; Medan Tuntungan which functions as a center for trade/business activities, health service center and education center; East Medan which functions as a center for trade/business activities, transportation service center, and socio-cultural activity center, as well as a defense and security service center; Medan Johor functions as a center for trade/business activities, a government center and a center for socio-cultural activities.
c. environmental service center (PPL).
   is a center for economic, social and/or administrative services in the city's residential environment. includes sub-sections of urban areas whose handling is prioritized, including Medan Area city services, Medan Belawan city services, Medan Helvetia city services, Medan Labuhan city services, Medan Marelan city services, Medan Perjuangan city services, Medan Selayang city services, and East Medan city services.

C. RESULTS AND ANALYSIS

C.1. Geography Concentration Analysis

Geographic concentration measures the level of distribution of economic growth facilities in the Medan Municipality. Calculations using geographic concentration analysis are presented in the table.

(attachment Table 1)

From the GC analysis in the table, it is found that the GC calculation value is smaller than the middle limit value. With a GC value of 141.4214, and a middle limit value of 72.36068, with a GC value greater than the middle value, it means that the facilities available to support economic growth are evenly distributed in the 21 sub-districts in Medan Municipality. So if you want to add facilities that already exist in the growth center, if you want to add them in each sub-district, then the addition should be done proportionally.

C.2. Scalogram Analysis

Scalogram analysis is used to analyze and determine the hierarchy or class. The number of facilities is used as a determination in placing a location as a growth center and a location as a hinterland or back area. After obtaining the total number of all facilities available in each sub-district, the next step is to create a calculation table that gives the number "1" to the type of facility owned by the sub-district, and gives the number "0" to facilities that are not available in that sub-district. (Attachment Table 2)

From the analysis results table, you can see the number of facilities from each sub-district in four different facility groups, as well as the total number of all facility units for each sub-district. It can be seen that those included in order I are the sub-districts with the largest number of facility units so that they can be used as growth centers. In the results of the scalogram analysis in the table, it is known that there are 3 sub-districts that meet the requirements to be included in order I as growth center sub-districts in the Medan Municipality. As the first growth center is the West Medan sub-district which has 19 types of facilities and 923 facility units. The second growth center is Medan Kota sub-district with 19 types of facilities and 759 facility units, the third growth center is Medan Polonia sub-district with 19 types of facilities and 646 facility units, Medan Baru sub-district with 19 types of facilities with 621 facility units, and Medan Petisah sub-district with 19 types of facilities with 587 units of facilities. Districts included in order I are districts with a larger population than districts in orders II and III.

In order II there is East Medan District with a total of 18 types of facilities and a total of 576 units. The number of facility units owned by East Medan District is greater than the number of units owned by Medan Petisah District. However, because the types of facilities owned by Medan Petisah District are more than the types of facilities owned by Medan Timur District, Medan Petisah District is in order I while Medan Timur District is in order II. Because to determine the center of growth area is to look at the many types of facilities the area has, not just the number of units it has. If you look at the population in the sub-district, the number of facility units owned is sufficient to meet the population's needs.

Order III is filled by Medan Perjuangan District with a total of 17 types of facilities, and a total of 697 units. Medan Baru District has a population of 36,681 people, which is the smallest population compared to Medan Petisah District. This number is not too far from the population of Medan Petisah District, however the number of facility units owned by Medan Perjuangan District is much less than Medan Baru District. Likewise with the type of facilities it has.

From the hierarchical table of sub-district growth centers based on scalogram analysis in Medan City in 2023, you can see the number of facilities from each sub-district in four different facility groups, as well as the total number of all facility units for each sub-district in Medan City in 2023. It can be seen that Included in order I is the West Medan sub-district with the largest number of facility units so that it can be used as a growth center. In the results of the scalogram analysis in Table 4 (Appendix) it is known that there are 5 sub-districts that meet the requirements to be included in order I as growth center areas. The first growth centers are West Medan District, Medan Kota District, Medan Petisah District, Medan Polonia District, Medan Baru District with a total of 19 types of facilities.

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The first growth center is West Medan with 19 types of facilities and a total of 923 facility units. The second center of growth is Medan Kota District, which has 19 types of facilities, and 759 facility units. Medan Polonia District is the third growth center with a total of 19 types of facilities, and a total of 645 facilities. Medan Baru District is the fourth growth center with 19 types of facilities and 621 facility units. And the fifth growth center is Medan Petisah District with 19 types of facilities and a total of 587 facility units. Observed from the conclusion table of the scalogram analysis results, in terms of population, all sub-districts experienced an increase in population from 2021 to 2023. With the increase in population, it is necessary to increase the number of facility units and the number of types of facilities to meet community needs. The results of the analysis show a change in order in two sub-districts, namely Medan Belawan District and Medan Labuhan District. Meanwhile, Medan Kota District is in the same order in two different year periods, namely in order I. In 2023, Medan Barat District is in order I and could become the center of growth in Medan Municipality. With the decrease in the number of types of facilities, in 2023 Medan Belawan District will occupy order IV and be separated from the growth center area. Medan Belawan District in 2021 is in order III, but the decrease in the number of types of facilities causes Medan Belawan District to be in order IV in 2023.

C.3. Gravity Analysis

In making observations using gravity analysis, it can be seen that West Medan District as the first growth center has the greatest interaction value with Medan Kota District and Medan Polonia District. So Medan Kota District and Medan Polonia District are hinterlands for West Medan District. The interaction value between Medan Kota District and Medan Barat District is 997,714,688, while with Medan Polonia District it is only 432,316,353, and interaction with Medan Petisah District is 70,893,858.7. The interaction value between Medan Kota District and Medan Baru District is 31,816,365.8.

To see the hinterland areas of the sub-districts which will be the center of growth in 2021, it is explained in table 4 in the attachment. The results of the scalogram analysis state that in 2021 there will be five sub-districts that will become growth center areas (West Medan, Medan Kota, Medan Polonia, Medan Baru and Medan Petisah), so there will be 16 sub-districts that will become hinterland areas. In table 4 it is known that the highest interaction value of a sub-district with Medan Kota sub-district as the center of growth is with Medan Maimun sub-district. So Medan Maimun District is a hinterland area for Medan Kota District. The interaction value between Medan Maimun District and Medan Kota District is 1,107,340,677, this figure is much higher than the interaction value with Medan Barat District, which is 997,714,688, with Medan Polonia District, it is 432,316,353, and the lowest interaction value is with Medan District. East, namely 10,476,900.04.

C.4. Comparison with Medan City RTRW

According to Medan City Regional Regulation Number 1 of 2022 concerning Medan City Regional Spatial Planning for 2022 – 2042, the direction for urban system development in the regional service system is planned as follows:

a. City Service Center (PPK);
   Merdeka Field in West Medan District which functions as a center for trade/business activities, center for provincial and city government services and activities, as well as a regional scale transportation service center centered at TOD Merdeka Field which serves the central area of Medan City; and Labuhan in Medan Labuhan District which functions as a regional service and trade activity center, transportation service center, socio-cultural activity center, and industrial activity center as well as a defense and security center centered at TOD Labuhan which serves the northern area of Medan City.
b. City Service Sub Center (SPPK);
   Medan Belawan which functions as a sea transportation service center, loading and unloading and

import-export activity center, defense and security service center, industrial activity center and fisheries activity center; Medan Labuhan which functions as a center for service and trade activities, a center for sports activities, a center for socio-cultural activities and a center for health services; Medan Marelan which functions as a center for trading activities in basic necessities and a center for tourist activities; Medan Perjuangan which functions as a center for trade/business activities and a center for educational services; Medan Amplas which functions as an economic service center and transportation service center; Medan Sunggal which functions as an economic service center, transportation service center and socio-cultural activity center, as well as a defense and security service center; Medan Tuntungan which functions as a center for trade/business activities, health service center and education center; East Medan which functions as a center for trade/business activities, transportation service center, and socio-cultural activity center, as well as a defense and security service center; Medan Johor functions as a center for trade/business activities, a government center and a center for socio-cultural activities.

c. Environmental Services Center (PPL).

It is a center for economic, social and/or administrative services in the city's residential environment. includes sub-sections of urban areas whose handling is prioritized, including Medan Area city services, Medan Belawan city services, Medan Helvetia city services, Medan Labuhan city services, Medan Marelan city services, Medan Perjuangan city services, Medan Selayang city services, and East Medan city services.

In Table 7 (attachment) you can see a comparison of the results of the scalogram analysis, gravity analysis, and RTRW policy. From the table of analysis results comparing the RTW policy with 2023 data, we can see the actual achievements of the conditions in each sub-district when compared with the Regional Spatial Plan (RTRW) of Medan City. According to the results of the analysis, there is suitability of the analysis after comparing it with the Medan City Regional Spatial Planning Plan (RTRW). The sub-districts analyzed are included in order I, namely as growth center areas, such as West Medan District and Medan Labuhan District, which have been projected to be included in the City Service Center (PPK) area), but in reality Medan Labuhan District has not been able to enter order I. Meanwhile for hinterland areas, namely each sub-district, when compared with the Regional Spatial Plan (RTRW) of Medan City, there is a match between the projections and the results of the scalogram analysis and gravity analysis.

D. CONCLUSIONS AND RECOMMENDATIONS

1. Conclusion

Based on the results of the geographical concentration analysis of Medan Municipality, the results obtained show that the facilities available to support economic growth have been evenly distributed in the 21 sub-districts in Medan Municipality. For scalogram analysis, gravity analysis and suitability of achievements with the Regional Spatial Planning Plan (RTRW) of Medan City, it can be concluded that there are differences in sub-districts which are centers of growth. In 2021, there are five sub-districts that will be the center of growth, namely West Medan District, Medan Kota District, Medan Baru District, Medan Polonia District, Medan Petisah District with Medan Helvetia District as a hinterland. West Medan District has an interaction value of 591,883,954. Meanwhile, in 2023 there will be three sub-districts that will be the center of growth, namely West Medan District, Medan Kota District and Medan Polonia District, with the hinterland of West Medan District being Medan Petisah District which has an interaction value of 407,568,522, and Medan Baru District with an interaction value of 620,706. 322.

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2. Suggestion

Based on the results of the analysis, there are several things that can be used as input for the Medan City government. The situation of each sub-district is not yet in accordance with the Medan City Regional Spatial Planning (RTRW) projections. It would be better to add facilities to the sub-districts which are hinterland areas so that there is no gap with the sub-district areas as growth centers. West Medan District, in the Regional Spatial Plan (RTRW) of Medan City, is included in the Activity Service Center (PPK). This is in accordance with the results of analysis using scalograms and gravity analysis.

REFERENCES

- Danastri, S. (2011). "Analisis Penetapan Pusat-Pusat Pertumbuhan Baru di Kabupaten / kota Harjamukti, Cirebon Selatan". Skripsi Sarjana, Fakultas Ekonomi, Universitas Diponegoro, Semarang.
- Gulo, Y. (2015). "Identifikasi Pusat Pertumbuhan dan Hinterland Dalam Pengembangan Wilayah Kabupaten Nias". Widyariset, Volume 18 Nomor 1, Halaman 37-48.
- Habib, S. (2016). "Analisis Kabupaten / kota Dalam Rangka Penentuan Kabupaten / kota Pusat Pertumbuhan Ekonomi di Kabupaten Tulang Bawang Barat". Skripsi Sarjana, Fakultas Ekonomi dan Bisnis, Universitas Bandar Lampung, Lampung.
- Hagget. (2001). Geography: A Global Synthesis. New Jersey: Pearson Education Ltd.
- Haris, S., Pabottingi, M., Hidayat, S., Salamm, A., Ratnawati, T., & Romli, L. (2006). Membangun Format Baru Otonomi Daerah. Jakarta: LIPI Press.
- Hartono. (2007). Geografi: Jelajah Bumi dan Alam Semesta. Bandung: Citra Raya.
- Jayadinata, J. (1992). Tata Guna Tanah Dalam Perancanaan Pedesaan Perkotaan dan Wilayah Bandung. Bandung: ITB.
- Nainggolan, P. T. (2013). "Analisis Penentuan Pusat-Pusat Pertumbuhan Ekonomi di Kabupaten Simalungun". Jurnal Ekonomi dan Keuangan, Volume 1 Nomer 12, Halaman 15-26.
- Rondinelli, D. A. (1985). Applied Methods of Regional Analysis, The Spatial Dimensions of Development Policy. Colorado: Westview Press.
- Sjafrizal. (2008). Ekonomi Regional Teori dan Terapan. Padang: Baduose Media.
- Tarigan, R. (2005). Ekonomi Regional: Teori dan Aplikasi. Jakarta: Aksara Bumi.
- Todaro, & Smith. (2006). Pembangunan Ekonomi. Jakarta: Erlangga.
- Undang-Undang No. 32 Tahun 2004 Pasal 1 Tentang otonomi Daerah. (t.thn.). Departemen Dalam Negeri Republik Indonesia.
- Undang-Undang No. 32 Tahun 2004 Tentang Pemerintahan Daerah. (t.thn.). Departemen Dalam Negeri Republik Indonesia.
- Undang-Undang No. 5 Tahun 1974 Tentang Pokok-Pokok Pemerintahandi Daerah. (1974). Departemen Dalam Negeri Indonesia.
- Utari, E. S. (2015). "Analisis Sistem Pusat Pelayanan Pemukiman di Kota Yogyakarta Tahun 2014". Journal of Economics and Policy, Volume 8 Nomor 1, Halaman 1-88.
- Utoyo, B. (2007). Geografi: Membuka Cakrawala Dunia. Bandung: PT. Setia PurnaInves.
- Yani, A., & Ruhimat, M. (2007). Geografi: Menyingkap Fenomena Geosfer. Bandung: Grafindo Media Pratama.
- RTRW Kota Medan tahun 2022-2042.
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