

Catchment Area Model for Improving Peri-Urban Community Services in East Java

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Abstract

The research aims to improve services to the community with the affordability of services to the periphery or peri-peri community using the Catchment Area model. Decentralization is a policy carried out by the government in delegating authority to regions to manage their own regions. The purpose of decentralization in the context of regional autonomy is to accelerate the realization of community welfare through service improvement, empowerment and community participation. The catchment area perspective in this study was appointed as a factor It is important to see the efficiency and effectiveness of services to the community in the administration of local governments. Several things related to the catchment area in service to the fair community in the village area in East Java province. The challenges faced in providing services to the community are within the reach of local governments. The locus of this research was conducted in East Java Province. This research was conducted and analyzed based on a systems thinking approach. The systems thinking approach used is a soft system methodology. This system works by examining phenomena and realities that occur in the real world based on understanding and building conceptual models as problem solving efforts carried out through a systems thinking framework. This research produces (1) a catchment area model using the buffer zone method, (2) a catchment area model using the isochrones method, (3) a catchment area model using the catchment area method based on the criterion of nearest proximity of provider locations (catchment area based on the closest condition to the location of the service provider), (4). Catchment area model with Gravity models method (gravity model)

Keywords: *Improvement, Service, Catchment area, village*

INTRODUCTION

The granting of autonomy to regions is closely related to public services. As one of the objectives of granting regional autonomy through decentralization is to improve public services to the community, besides that service is the main task of the government. Regional government exercising Regional Autonomy is the right, authority, and obligation of the autonomous region to regulate and manage its own Government Affairs and the interests of the local community with the aim of improving community welfare, public services and regional competitiveness. The wide scope of public services and services requires an extra large government role. Therefore, with the granting of autonomy, it is hoped that the community will be able to receive better services from the government in various fields, be it health services, education or services in other fields or sectors. Thus, the closest responsibility for providing services to the community rests with regional governments that have been granted autonomy. Furthermore, what needs to be considered is how the public service can run effectively and efficiently. This then raises the question of the extent to which local governments have carried out their duties and responsibilities in providing public services to date? [1].

Catchment Area is the range of services that can be carried out by certain agencies, where the reach of this service occurs in different conditions or even people who are not touched by the services of an institution at all. Then there will be what is called the Discatchment Area where conditions indicate the low reach of government agencies and officials to the community. This low reach has resulted in the inability of local governments to provide services to the community, including the weak ability to meet the needs of the community. [2]

The specific goal is to improve the quality of public services that can reach the community. The problem of public services is also driven by geographical conditions which are indeed very wide and consist of mountains and hills, so that access to these remote areas is quite difficult. This can then cause difficulties

for the government to provide services to the community with various existing limitations. Service improvement in the perspective of Catchment Area where the optimal area boundaries that can be reached in public services, development, resource withdrawal, participation, community control and bureaucracy. Where accurate boundary determination is oriented to quality administration to deal with changes and the complexity of services needed by the community, it is hoped that services to the community can run optimally.

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RESEARCH METHOD

Table 1. Details of Research Methods

RESEARCH IMPLEMENTATION	DESIGN	IMPLEMENTATION METHOD	ACHIEVEMENT INDICATORS
(1) Creating a Catchment area model with the buffer zone method	Model Catchment area with the buffer zone method	Research methods Using a soft system methodology (SSM) approach, it is one of a series of systems research methodologies whose data are qualitative in nature: Depth Interviews, FGDs, surveys and documentation	Diperoleh Model Catchment area dengan metode the buffer zone method
(2). Creating a Catchment area model using the Isochrones method	Model Catchment area with the Isochrones method	Research Methods Using a soft system methodology (SSM) approach, is one of a series of systems research methodologies with qualitative data: Depth Interview, FGD, survey and documentation	Obtained Model Catchment area using the Isochrones method
(3). Create a Catchment area model using the Catchment area method based on the criterion of nearest proximity of provider locations	Catchment area model using the Catchment area method based on the criterion of nearest proximity of provider locations	Research Methods Using a soft system methodology (SSM) approach, is one of a series of systems research methodologies with qualitative data: Depth Interview, FGD, survey and documentation	The Catchment area model is obtained using the Catchment area method based on the criterion of nearest proximity of provider locations
(4). Creating a Catchment area model using the Gravity models method (gravity model)	Model Catchment area with Gravity models method (gravity model)	Research Methods Using a soft system methodology (SSM) approach, is one of a series of systems research methodologies with qualitative data: Depth Interview, FGD, survey and documentation	Obtained Model Catchment area using Gravity models method (gravity model)

RESULTS AND DISCUSSION

There are two methods in improving the quality of public services, namely by carrying out an innovation and making a model, one of which is mapping based on the Catchment Area. Research on improving public services using the Catchment Area model as one part of the mapping for a policy for public services to be affordable at all levels, both in urban and rural areas, especially for basic services, such as health and education services. [3,4].

In improving the quality of public services, one of the considerations in policy making is efficiency and economy. Consideration of economic efficiency that becomes the limit for determining regional boundaries includes several things, including:

1. The calculation of travel and communication costs is low, resulting in efficiency and good public services and government coordination. In addition, a larger population within certain regional boundaries will also increase costs because it requires larger institutions as community problems are more complex.
2. The extent to which the Regional Government is able to meet financial, land and other resource needs from within its own region so as to minimize economic dependence on the structure of government above it or depending on other regions.
3. Minimize the cost of externalities originating from other regions so that they can cause additional costs for a region.
4. Ability to facilitate collaboration and coordination between various types of services provided and existing service institutions.
5. The ability to adjust the territory with private, community and government institutions and various related interests to facilitate cooperation and coordination for mutual interests and interdependence between these institutions.[5]

Local Government Catchment Area

Important aspects in creating public services are of course not only limited to knowing how the authority to provide public services has been given, not only seeing the extent to which the service program is running, but also relating to regional boundaries as the main element determining the area of the area that is the basis for creating catchment area in describing public services. [6] Whereas the catchment area is the optimal area for the implementation of public services, development, resource withdrawal, participation and control by both the community and the bureaucracy. This explanation means that if the government can reach public services in a certain area, it means that if the government can reach public services in a certain area, this condition can be categorized as a catchment area condition. Likewise, the affordability of development that can be carried out by the government in its optimal area, also describes the condition of the catchment area. This condition will also be demonstrated by the large use of resources that can be managed by the government and the supervision between the two sectors. [7]

Several factors that affect the catchment area, among others, are the function of the region to the condition of the regional economy as well as the national economy which is unique in nature, tax sources that can be explored potentially and in real terms to be able to achieve a balance between various regions, efficiency and effectiveness of services to the community in an area. The area seen based on the optimal area for the service itself, the participation that can be achieved effectively and mutual supervision between the citizens and the regional bureaucracy, these four factors are the optimal areas that can be mapped and are valuable references for determining regional boundaries in creating public services.

Catchment area is the range of services that can be carried out by certain public institutions that are different from one another. The difference is caused by the influencing factors as described above. The importance of regional boundaries in the catchment area is closely related to the optimization of local government to be able to fulfill various crucial aspects concerning the livelihoods of many people/communities in the area and also related to the performance of the government itself. These various important aspects include public services, development, withdrawal of resources, participation and control of the community and government bureaucracy in order to achieve the common goal of creating community welfare. Therefore, in the regional structuring process, it is necessary to determine regional boundaries as a measure of the optimal conditions for the desired aspects. [8]

Ideally the catchment area is when the entire community can be reached by public services. If the capacity

of the local government is really not able to reach the whole community, then the existing regional boundaries need to be reconsidered. [9] In conditions like this, regional reorganization is one solution that needs to be done considering that every community has the right to get basic services by the State. Talking about providing maximum public services to the community in the area, local government is the key because local governments are the main actors of public service providers in the area. Local government is driven by bureaucracy and administration which is the work process. Therefore, to achieve and realize public services as desired by the community, an effective and efficient government and administrative bureaucracy is needed. The condition of the catchment area will also be formed if the bureaucracy and administration can run effectively and efficiently in carrying out their duties to provide public services. If the catchment area fails to reach, it will appear the condition of the catchment area. The condition of the discatchment area illustrates the low reach of government institutions and officials to the community, this which then causes the government to be unable to provide public services to the community optimally. [10]. This condition can affect several other sectors, including the economic sector, environmental security and others. In addition, the discatchment area can be interpreted as an empty space (without) public services. This discatchment area condition then allows the local government to design and create new regional boundaries, with the hope that by setting new regional boundaries that are in accordance with the government's ability to be able to serve the people in the area, the community will be touched by the service to the fullest.

Catchment and Dis Catchment Area Indicators

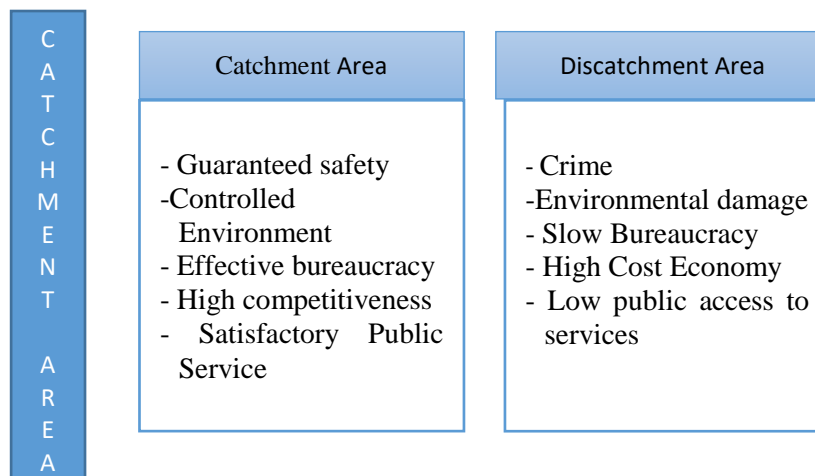


Figure 1. Difference between Catchment and Discatchment Area signs

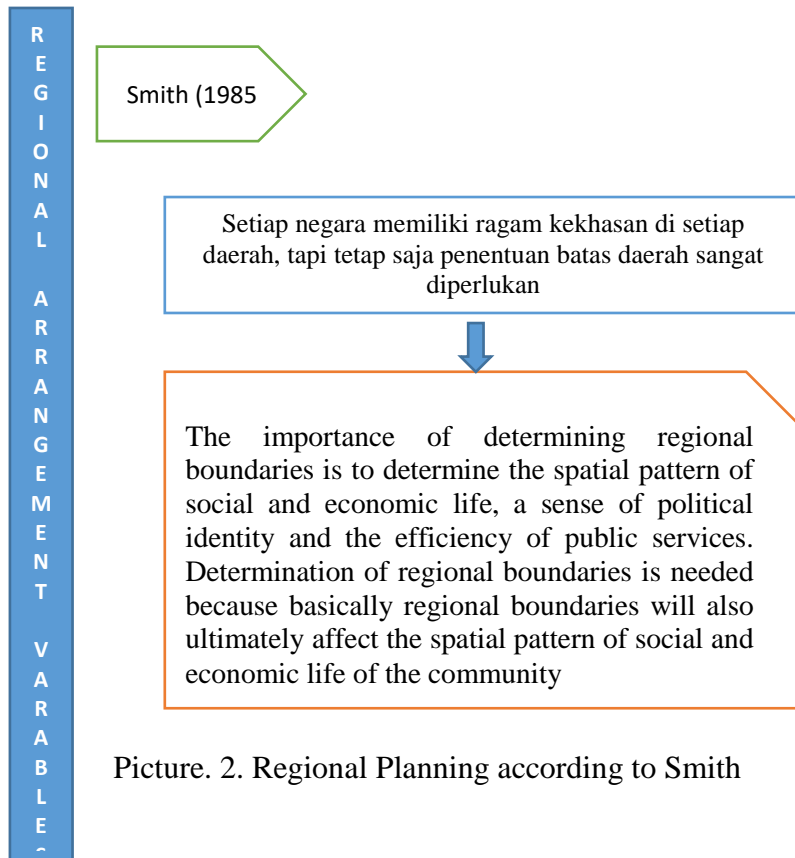
The formation of the catchment area is influenced by the optimal conditions of several aspects. the following: first, socio-administration which consists of the community, namely community cohesion (socio-demographic and social life of the community including social interaction), efficiency and managerial related to the functions and authorities of the government to meet the needs of the community in various fields of administrative efficiency related to the extent to which the government is able to provide public services in the context of public administration and community involvement and representation; second, the geographical economy related to the regional economy, the optimal area of the region in providing optimal public services and extracting potential and real tax sources. In the previous section that there are 5 (five) important aspects in determining the size of the administrative area. These five important aspects have an influence on public services and the emergence of demands for regional governance. These important aspects include: community, efficiency, managerial, technical and social which, when in optimal conditions, is called Smith as a catchment area. These important aspects are something that can change from time to time and can change from place to place. [11]

To be able to provide better public services, the concept of regional arrangement cannot be separated. Regional arrangement is closely related to the determination of regional boundaries, meanwhile the determination of regional boundaries has a very important role in the process of providing public services by the government to the community because it immediately reflects the work area of the regional government. Regional structuring is an activity of fostering, forming, deleting and forming regions which

are an integral part of the policy of decentralization of government to autonomous regions which include, (a) expansion and formation of regions; (b) the abolition and incorporation of regions; (c) adjustment of regional borders; and (d) transfer of regional status (administrative/political aspects); and (e) relocation of the capital city. Theoretically, Michael A. Trueblood and Beth Walter Honadly explain that: there are four restructurings that can be carried out by local governments, namely:

- a. Annexation, namely expanding the border area of the region by including areas that were not previously included in the area being handled;
- b. Consolation or amalgamation, or merger), namely the merging of two or more regional governments that are side by side and form one regional government;
- c. Pemekaran (fragmentation), namely the division of a regional government into two or more regional governments;
- d. Detachment, rearrangement of regional borders by releasing some parts of the territory from the area it covers.[12]

Of the four restructurings above, the form of regional structuring in Indonesia as regulated in government regulations consists of merging, abolishing and forming new autonomous regions. However, until now the formation of the region tends to be considered as the only way that can be done in an effort to reorganize the region. This is proven by the fact that so many new autonomous regions have been formed since 1999-2009, while currently there has never been in Indonesia's history to merge or delete regions as a form of regional structuring, although it is considered that many New Autonomous Regions (DOB) are considered to be new autonomous regions. have not been able to carry out their duties properly as described. The process of regional structuring includes decentralization in it, Smith (1985) explains that regional structuring requires principles that can realize certain administrative and political values. The concept of regional arrangement is closely related to the formation of regional boundaries. He further explained that if the purpose of decentralization is to reflect the needs and expectations of local communities, regional boundaries must consider several important aspects. This is because the formation of regional boundaries and these aspects influence each other.



Picture. 2. Regional Planning according to Smith

Many methods can be used to measure the size of the catchment area so far. Although the catchment area is discussed in different fields/sectors, several studies use almost the same method to see the catchment area.

The model in the catchment area can be described as follows:

1. The buffer zone models

German as quoted by Fulop, Kopetsch & Schope (2009) explains that the size of the catchment area is represented by concentric circles which have this one as the center. An area consists of several important parts which are the core of the area itself, the area closest to the core and the outermost area in a concentric circle.

2. The Isochrones models

The advantages of this method can be seen in the calculation of distances that were not taken into account previously. Distance calculation is based on actual road access and not based on straight line drawing. In addition, this method also looks at the calculation of the time and distance traveled to reach the intended service point. When connected between time and distance, it can create a time contour called an isochron. This method is considered more powerful than the method that calculates based on the distance in kilometers, because interactive behavior is more influenced by the time it takes to reach the desired place than a simple count in kilometers.

3. Catchment area based on the criterion of nearest proximity of provider locations

Using assumptions about the ideal type of natural catchment area which is described on a small scale by determining the closest distance of community settlements to the location of existing public service providers. An important part of this model is the use of digital access roads. In digital access roads there is an average speed calculation, besides that it can also measure the length of the road to be traveled, so that people can calculate for themselves the time needed/needed to be able to reach the area where the service location is located.

4. Gravity models

This model attempts to explain social phenomena by analogy to the law of gravity established by Isaac Newton (1687). Gravity models explain the difference between deterministic and probabilistic approaches. The key to this approach is the cost that distance will incur. In the case of public administration, it can be described as the high costs that will be incurred by the community due to the factor of the distance that is too far between their residence and the intended service center. Gravity models view it from two approaches, namely; first, a deterministic approach that is based on the traditional theory of economic behavior which assumes that all economic activities are based on the principle of rationality. As a result, both customers who live in the center and those in the catchment area still have to carry out transactions in the central area. second, the probabilistic approach works on a different pattern. This was developed by Huff as quoted by Fulop, Kpetsch & Schope (2009) which explains that economic behavior is seen as probabilistic which considers consumers more so that there is availability of services that are not only at one point but have choices at several other points. This makes it easier for people living in the area to reach them. The catchment area in this research will be seen through two important indicators. This indicator is concluded and developed based on the theories described above. The two indicators used are related to the capacity of services that can be provided by local governments and the access and span of control of public services. The catchment area indicators are summarized in the balanced scorecard analysis in looking at public services in East Java.

CONCLUSION

The results of the study found that the implementation of public services in East Java based on the catchment area perspective faced practical challenges in very complex and diverse conditions. Existing optimization efforts have been carried out, but are still experiencing various obstacles from aspects such as weak access to services, low personnel facilities and human resources, service quality standards that still need to be improved, strengthening the role of government monitoring, to community participation patterns. Meanwhile, in the perspective of learning and growth itself, efforts to improve the quality of human resources (HR) are still very weak. This is evidenced by the lack of training and programs to improve the quality of the apparatus that have been carried out so far, again related to costs. Even though the issue of additional education for the education apparatus is permitted, the government's attention to small things like that is still very lacking. This study recommends 2 important initial priorities to be included in the service improvement priority plan in the form of top-level mechanisms (policy makers) by optimizing, especially in

improving the quality of service standards for the community in East Java and; technical/community level (street level) that is participatory by optimizing local public service agencies (BLUD) at the community level through community synergy with various institutions and government at lower levels.

Catchment area analyzes the geographical condition of the area through the distance and time that must be taken by the community to get services. The extent of the area stretches a considerable distance for some areas. Not to mention the road access that must be taken to get to the area is quite difficult. The additional transportation costs that must be incurred, distance and time make it all ineffective. If it relates to sub-districts and districts, it is the same between villages to sub-districts. the distance between villages and access to transportation facilities and infrastructure are also very limited. In addition, local government control over the implementation of services in the existing sub-districts in various aspects is also very lacking. So that the problems that occur in the field cannot be explained one by one properly. Therefore, it can be concluded that for the research locus area, it can be said to be a discatchment area because the capacity, service capability, affordability, access and control have not been fulfilled.

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