

# Archetype Basic Modeling for Local Government Performance:

## A geographical challenge to manage archipelagic parts

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**Abstract**—This study attempts to describe archetypes of governance in archipelagic parts of a region, as geographical conditions are a major challenge for the local government. The problem of governance in archipelagic parts of a region is characterized as a systemic problem, so the standard pattern of system behavior must be known. Systems archetype basics are the right tool to describe complex systemic situations such as those faced by local governments in the archipelago. Systems archetype has contributed effectively to understanding the dynamics of the system until the leverage variables are found to engineer the limiting factor. The resulted storyline has been able to identify several subsystems, which are then integrated into the governance system in archipelagic region. Geographical and weather conditions as limiting factors that affect the accessibility of the region and the availability of infrastructure. Therefore, infrastructure improvement as the leverage. So, the provision of infrastructure encourages regional accessibility and acceleration of development in archipelagic parts.

**Keywords**—systems archetype; modeling; archipelagic; geographical; local government, limit to growth

### I. INTRODUCTION

The decentralization policy aims to provide the Regional Government with the freedom to manage its territory. This freedom provides an opportunity to bring local communities closer to public services. Norton and Muluk explains that the existence of an autonomous region are to maintain accountability and responsibility [1,2], also to encourage accessibility and public choices [3]. As the raises of authority, the local government must increase its capacity. Pollit and Bouckaert explain that the capacity of local government can be seen from the suitability of the action with the problems to be resolved [4].

The capacity of the local government is related to the ability to manage the territory. The wider the area, the higher the required capability will be. MacCallum explicitly explains the importance of territorial conditions for the dynamics of economic prosperity, fragmentation of social capital, and quality barriers to public policy delivery systems [5]. This

territory is related to geographical conditions and the effectiveness of public services [6]. Geographical conditions determine many aspects that build the characteristics of the people in a region, so that different institutions are needed for the success of public services [7]. Therefore, the geographical and region characteristics of decentralization must be a serious concern for the local government regarding how society will be served [8].

Sumenep Regency faces this territorial challenge, the territory is very large divided into mainland and archipelagic parts. Sumenep Regency is one of the local governments in Indonesia having the largest archipelagic parts. The regency has 126 islands, consisting of 48 inhabited islands and 78 uninhabited ones. Judging from the total area of Sumenep Regency 45.21% of 1,146.93km<sup>2</sup> is islands, inhabited by as many as 300,601 people or 28% of 1,114,949 inhabitants as the total population of Sumenep Regency.

The problem faced by the Sumenep Regency Government is the gap between the land and island regions; the archipelagic parts are left behind. Accessibility becomes an obstacle and the distance from the capital adds another challenge due to the limited modes of inter-island transportation resulting in long travel times. This connectivity limitation makes it difficult for the Sumenep Regency Government to carry out its functions optimally in the archipelagic parts. This condition supports Norton that territorial structuring is related to efficiency and effectiveness [1].

The complex problem of governance in the archipelagic parts indicates a systemic problem that has multi-dimensional causality. A systemic method is needed to understand a systemic and complex conditions. According to Rossi, Freeman, and Lipsey, assessment of government performance requires systemic methods to investigating the effectiveness of social interventions to improve the quality of social conditions [9]. The systemic method that develops today is the systems thinking. The approach has a generic structure system, namely systems archetype. Archetypes are found in many types of organizations, many situations, and at different scales and levels, from personal dynamics to global relationships [10].

Braun confirms that systems archetype is a generic (template) model of a repetitive system structure that can appear in many different situations [11]. Then, Kim and Lannon explain that the uses of systems archetype are to structure complex problems [12]. This system quickly builds systemic awareness and provides a simple and interesting way [13].

**II. METHODS**

The complex problem requires systemic methods. This study uses systems archetype in exploring a phenomenon intensively in a period of time and activities to find problem solving; it sees something as a whole, not partial [14]. There are four ways to use systems archetype, as: a) a lens, b) a template pattern structure, c) a dynamic theory, and d) tools for predicting behavior. Systems archetype basics until now there are eight archetypes [10]. Each archetype has theme characteristics, special experiences, performances behavior patterns between time, structure, mental model, and interventions. The use of systems archetype is to structure the problems faced by an organization or a system [12]. This system quickly builds systemic awareness and provides a simple and interesting way.

The variables in this study include institutional capacity, regional accessibility, infrastructure support, service responsiveness, logistic access, development of archipelagic areas, and geographical and weather conditions. Data collection was carried out by interviews, focus group discussions (FGD), and data from related documents. Interviews were conducted with some people who were considered to understand information about the research focus, namely: official of Sumenep Regency, the heads of villages and village consellers in archipelagic area, community leaders in archipelagic area, and non-governmental organizations (NGOs). FGD is done twice as a triangulation process in order to obtain valid data. Data validity also refer to Coyle approach (1996), that are CLD must related to problems, consistency of the equation with causal loops, and the model must balance and make sense. Then the data was demoted as a storyline. The process of data analysis followed the steps in systems archetype method, which refers to the opinion of Kim and Anderson [10] as in Figure 1.

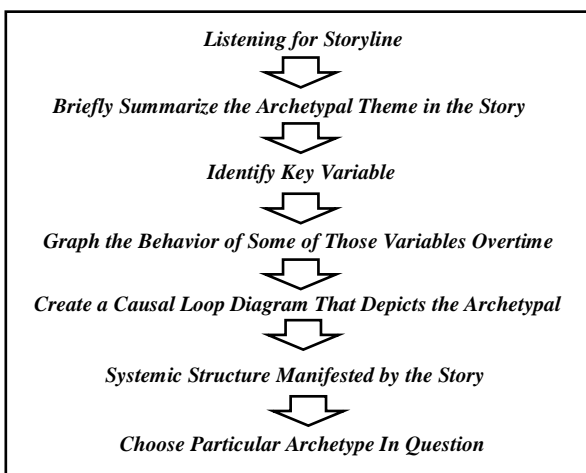


Fig. 1. Data analysis flow in the systems archetype basic.

**III. RESULTS**

Based on the results of interviews, FGDs, and tracking data from related documents, archetypes were obtained for governance in the archipelagic parts of Sumenep Regency. The archetype is built by several subsystems, namely infrastructure support subsystems, regional accessibility subsystems, institutional capacity subsystems, and logistic access subsystems.

**A. Infrastructure Support Subsystems**

The causality in the Infrastructure Availability Structure explains that some factors influence infrastructure support in the archipelagic parts of Sumenep Regency, i.e. availability of infrastructure, quality of work of local governments, and improvement in the quality of management of archipelagic development.

Figure 2 shows that the structure of the causality on the basic structure of infrastructure support has a pattern of strengthened dynamic tendency. This strengthening pattern explains that if the availability of infrastructure for governance in the archipelagic parts increases, the quality of local government work will also increase, resulting in an increase in the quality of development. Surely, if development is getting better, the availability of infrastructure will also be better.

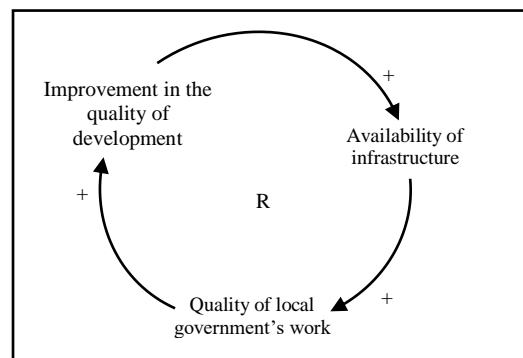


Fig. 2. The causality in the infrastructure availability subsystem.

**B. Region Accessibility Subsystems**

The causality in the Region Accessibility Structure explains that openness in the archipelagic parts of Sumenep Regency is influenced by infrastructure availability, regional accessibility, and geographical and climate conditions. The causal tendency pattern that occurs in the regional openness structure is balancing (B). The pattern explains that the cycle of thinking and activity stops if the standard is reached, or continues to cycle if the gap still occurs. If the gap increases in the availability of infrastructure, then region accessibility should also increase, but due to limiting factors namely geographical and climate conditions, it has indeed decreased. The structure of this causality shows that if the accessibility of the archipelagic parts is good, the need for infrastructure provision will decrease. The causality structure in the Region Accessibility Structure is presented in Figure 3.

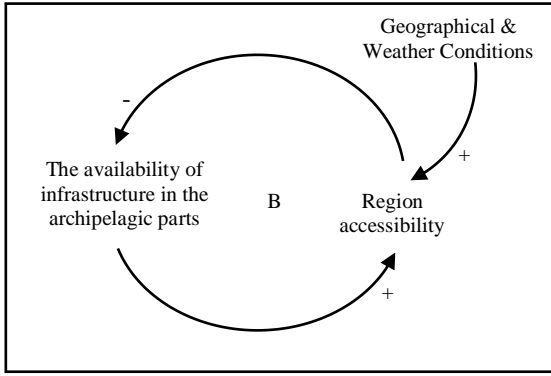


Fig. 3. The causality in the region accessibility subsystem.

C. Institutional Capacity Subsystems

Institutional Capacity Subsystem Structure explains that the institutional capacity in the archipelagic parts is influenced by the availability of the technical implementation units (UPT), service responsiveness, and the quality of public services. The pattern of changes in performance of factors in this institutional capacity structure shows a strengthening dynamics, which is characterized by strengthening of each factor. That is, if the availability of the UPT increases, the responsiveness of services in the archipelagic parts will also increase. Then, if responsiveness improves, it will improve service quality. This pattern is characterized by reinforcement in each factor. This strengthening pattern explains that if the availability of the UPT services in the archipelagic areas increases, the responsiveness of services will also increase, resulting in an increase in the quality of services. Figure 4 shows the causality of a basic institutional capacity structure.

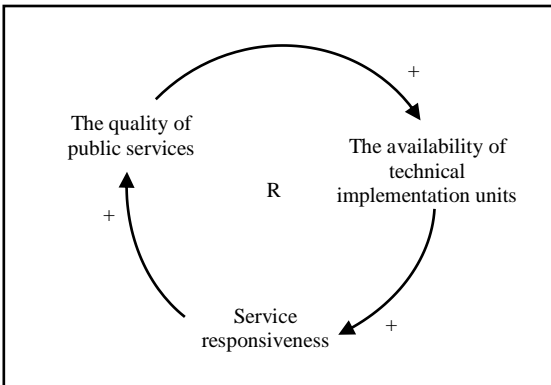


Fig. 4. The causality in the institutional capacity subsystem.

D. Logistic Access Subsystems

The Logistic Access Structure explains that logistic fulfillment in the archipelagic parts is influenced by logistics capacity and institutional capacity. The causal pattern that occurs in the logistic access structure is balancing (B). The pattern explains that the cycle of thinking and activity stops if

the standard is achieved or continues to cycle if there is still a gap.

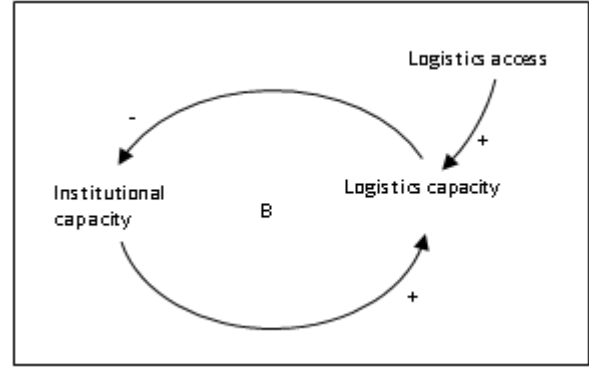


Fig. 5. The causality in the logistic access subsystem.

The increasing gap in institutional capacity has also caused a gap in logistics capacity. Meanwhile, the increase in logistics capacity caused a gap in institutional capacity to decline. This is because what should be prepared and encouraged institutionally by the government can be fulfilled independently. If institutional capacity improvement is easy to do, then logistics capacity can increase. The good institutional capacity in the archipelagic parts encourages higher logistics capacity. Efforts to advance the archipelagic parts must be supported by adequate logistic access. The structure of the causality in this subsystem is presented in Figure 5.

E. Archetype Limit to Growth of Governance in the Archipelagic Parts

Archetypes of governance in the archipelagic parts are obtained from the process of integrating several subsystems found. The model formed from the integration results is then juxtaposed with eight basic archetypes [10]. Based on the characteristics and patterns formed in the integration model, one of the most suitable archetypes is the archetype limit to growth. This type has two different loops, namely a mutually reinforcing structure and a balancing structure. In this model, the strengthening of the performance of governance has experienced a delay. Delays occur due to limiting factors leading to a reduction in the performance of governance.

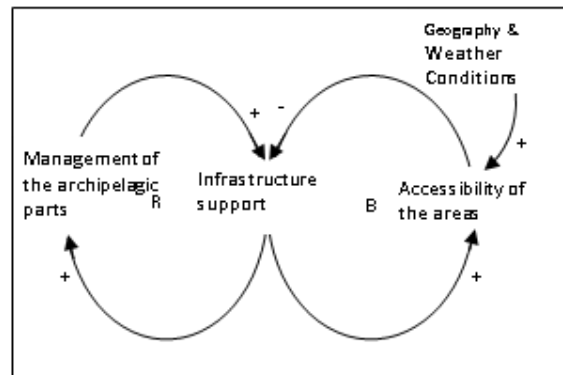


Fig. 6. Archetype limit to growth of governance in the archipelagic parts of sumenep regency.

Figure 6 show that if development management in the archipelagic parts increases, the availability of infrastructure will also increase. The increasing availability of infrastructure in has a positive impact on the better management of development in the areas. Then, the low accessibility of the archipelagic parts due to geographical and climate conditions will reduce infrastructure support.

#### IV. DISCUSSION

Archetype findings provide a comprehensive picture of the performance of governance in the archipelagic parts of Sumenep Regency. Various elements dynamically contribute to the governance system. Existing elements are interrelated and influence each other. The discussion of the dynamics of elements in the governance system in the archipelagic parts of Sumenep Regency can refer to Parker [15] that the impact of decentralization can be seen from the elements of accountability, and institutional capacity. Then, Naab adds on the need to pay attention to infrastructure and service responsiveness [16]. The elements found in this study corroborate the two opinions and add aspects of regional accessibility and logistical access. There are special characteristics on the implementation of decentralization in local governments within the archipelagic areas, namely the management of geographical conditions as an inhibiting factor.

Additional important aspects of governance in the archipelagic cannot be separated from territorial challenges that increase the workload for local governments. An important note for Bennett and Smith is that every local government having a vast area to manage has a good chance of success in managing its territory because it is supported by extensive resources [17,18]. However, this condition is not entirely acceptable in the case of regional governments with archipelagic territories. The vastness of the area becomes two sides of a coin that must be faced on a continuous basis. On the one hand, it is true that having a vast area offers a lot of potential resources, but on the other hand, it demands the local government to have more capabilities to manage the archipelagic parts optimally.

Therefore, the regional government with archipelagic territory must consider the efficiency and effectiveness on the management of its territory. Moreover, Sumenep Regency faces a big challenge in managing development and delivering public services since it has a large administrative area, with land and island regions.

In fact, large areas with extensive resources or potential have not been able to provide maximum support for governance in the archipelagic parts. These limitations appear due to inadequate infrastructure in the area, which affects other limitations. These conditions lead to low accessibility of the region so efforts to accelerate development experience obstacles. Geographical factors are the limiting factor for the performance of governance in the archipelagic parts. As long as the limiting factor cannot be overcome, then the derivative problems will continue to occur.

The not optimal development management and public services in the archipelagic parts can be categorized as a disatchment area condition as explained by Hoesein [19] and

Muluk [2]. The effectiveness of regional management consider not only optimizing the availability of manageable resources, but also providing public services that is feasible for people in all regions. The Sumenep Regency Government has not been able to realize public services that reach all its regions to realize decent services due to geographical factors that demand more capacity of the government. This disatchment has widen the gap in development and welfare between islands and land areas.

#### V. CONCLUSION

The governance in the archipelagic parts of Sumenep Regency shows limited system growth. The system is described by archetype limit to growth. The omission of a system with this limitation will lead to performance failure, a slowdown and stagnation due to limiting factors. The action that must be taken is to anticipate and manage the limiting factors by managing the system to minimize impact. Then, modifications to the system must also be made to minimize system activity dependence on limiting factors.

The results of the model simulation confirm that the leverage variable in the archetype limit to growth of governance in the archipelagic parts is the infrastructure support. A possible strategy is to anticipate the limiting factors, in this case that the archipelagic parts of Sumenep Regency experiences access difficulties due to its geographical and weather conditions. Therefore, the availability of infrastructure must be immediately fulfilled, both related to accessibility of the area and basic services.

The governance in the archipelagic parts will be better if it is carried out by considering infrastructure support in order to encourage accessibility due to geographical conditions. Even with good officials and much budget allocation, if infrastructure support is inadequate, the limiting factors will persist, causing the performance of government administration to be not optimal. The lack of optimal governance means that the gap between the islands and the land areas will continue.

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