

Adoption and Diffusion of Urban Policy Innovation in Kepulauan Riau

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Abstract. This study aimed to determine if the adoption and diffusion of urban policy innovations in the Kepulauan Riau were appropriate public policy innovations to solve the problem. The Kepulauan Riau states have adopted the concept of the smart province to solve urban problems when implementing policy innovation. However, the application of smart cities in the mainland and island regions certainly has different implementations. Therefore, adopting a mature policy for innovation must be executed effectively and efficiently. This survey uses a qualitative research method that uses a descriptive analysis method. The government has not effectively implemented urban policy innovations in the Kepulauan Riau to solve public problems. The author analyzes policy innovation adoption and diffusion from a Rogers perspective. Policy innovation must-have steps to know, persuade, make decisions, implement, and confirm. This study recommends the need for roadmaps and guidelines for implementing innovative states for this innovation to solve the archipelago problem.

Keywords: Policy adoption; diffusion; policy innovation; urban policy; archipelago

1 Introduction

Archipelagic areas have different complexities from land areas regarding geography and public administration. The archipelagic region becomes very complex in its governance because the sea carries out more than 90 per cent of global trade. Indonesia is a country with the characteristics of an archipelagic region, with 2/3 of its area being the ocean, so the most significant potential for Indonesia's territory comes from the sea. Of the total area of Indonesia of 7.81 million km, 3.25 million km² is the ocean and 2.55 million km² is the Exclusive Economic Zone, and 2.01 million km² is land [1]. As the world's second-longest productive coastline, Indonesia's 99,093-kilometre coastline has enormous marine and fishery potential. Kepulauan Riau Province is one area with characteristics of a maritime area and an archipelagic area because 96% of the Kepulauan Riau area is an ocean, and 4% is land [2]. The Kepulauan Riau's position on the border between 3 countries, Malaysia, Singapore, and Vietnam, makes the Kepulauan Riau Province a very strategic area in the path of the world economy and has become the main gate in Indonesia's defence and security.

There are several problems in managing the archipelago, especially the Kepulauan Riau Province. First, most of the islands are undeveloped, and many are uninhabited. Third, the emergence of illegal smuggling and fishing activities that are not environmentally friendly can threaten security stability. Currently, in realizing the integrated management of archipelagic regions, the Kepulauan Riau Province is implementing policy innovations to recognize Kepulauan Riau as the world's maritime axis. In implementing policy innovations, the

Kepulauan Riau Province chose to choose the smart province concept as a way to solve urban problems. A smart city can use human resources, social capital, and modern telecommunications infrastructure to realize sustainable economic growth and high quality of life with wise resource management through public participation-based governance [3].

The application of smart cities in mainland and island areas will undoubtedly have different implementations, so it requires the adoption of mature policies so that the innovations carried out are practical and efficient. Europe is one country that has started to initiate smart island cities. In the smart island event, European countries collaborate and seek to communicate the significant potential of the island to serve as a laboratory for technological, social, environmental, economic, and political innovation. The Smart Island initiative by Smart Cities and Communities seeks to improve life on islands through sustainable integrated solutions that take full advantage of the island's competitive advantages [4]. Urban policies, spatial planning, and city strategic programs are some of the critical factors developed by the Public Agency or City Government by targeting the city's intelligence and focusing on the needs of the community and society. Smart Cities must respond to the needs of their citizens through sustainable solutions.



Fig 1. A European Union initiative called "smart islands" aims to turn islands into "smart" places [5]

The transformation of maritime culture based on innovation and technology is an urgent matter to be done immediately. This transformation will cover various fields ranging from mindset, perspective on life, and Indonesian maritime human resources education. Therefore, Kepulauan Riau Smart Province has to become a smart province. This policy innovation hopes to integrate several existing services in big cities in the Kepulauan Riau Province and channel innovations to small and outer islands so that all Public can feel the benefits. Currently, from the Ministry of Home Affairs, The Regional Innovation Index data shows that the Kepulauan Riau Province is still ranked 260, and with this research, the Archipelago Urban Policy can adopt urban policy innovations with smart islands' characteristics that other countries have adopted. Therefore, the government can carry out-diffusion of urban policy innovations.

2 Research Method

In compiling this research, the author uses qualitative research methods with descriptive analysis methods. Qualitative approach because this study seeks to describe the views and perceptions of researchers as a whole and reveal in depth the adoption and diffusion of regional policies in the islands of the Riau Islands Province. The author uses a qualitative research method with a descriptive approach because by using a qualitative method, the author can understand more deeply the phenomena that occur in the field. In researching the adoption and diffusion of archipelagic regional policies in the Riau Islands Province, the author must conduct research in several locations, including the Planning, Research, and Development Agency of the Riau Islands Province as the agency that has the authority to plan the development of the Riau Islands region and the Provincial Communication and Information Office. Riau islands. Researchers used triangulation to test the validity of the data in this study, which is triangulation for collecting information from various sources to unite and form a new thought. The process during this triangulation can be used to increase the validity of the data obtained because the data does not only come from one source. The final result of this study is that researchers can provide suggestions or recommendations regarding instruments for adopting regional diffusion policies in the Riau Islands Province. Qualitative research also provides a more accessible space for researchers to explore information and data in the field. With this approach, the writer can also express the views, attitudes, and experiences of the informants and the values held by the informants. All the information the author got in the field, from research informants and documents, was conveyed clearly and sharply to reveal the research results in depth.

3 Results

Implementing the smart city concept has become a concern for several regions in Indonesia, one of which is the Kepulauan Riau Province. The concept of a smart city is a new way and idea carried out by the government to solve public problems by identifying the community's needs so that policy innovations can solve public problems, primarily based on island regions. Archipelagic areas have different complexities from mainland areas. Urban policies in areas with many islands not only talk about urban and regional planning but also talk about the problems that happen in archipelagic areas, especially in Kepulauan Riau Province, where most of the islands and many are not inhabited. Population administration services, economic and socio-cultural empowerment, telecommunications and transportation facilities, and infrastructure, including inter-island, sea, shipping, and the emergence of illegal activities, smuggling, and fishing activities that are not environmentally friendly and can threaten security stability.

In the implementation of the concept of urban policy innovation based on archipelagic areas, many developed countries have carried out, one of which is European countries which have initiated and collaborated to communicate the significant potential of islands to function as laboratories for technological, social, environmental, economic and social innovation. Political. In this initiative, the islands in European countries seek to improve life on the islands through sustainable integrated solutions that take full advantage of the island's competitive advantages. The concept offered is Smart Island. In the Smart Island initiative, this concept suggests a new narrative for the islands that calls for an integrated approach to natural resource management and island infrastructure that harnesses the potential of European islands to become

innovative regions and improve the quality of life for the island communities, including mitigation and adaptation to change.

The application of Smart Island in Europe can be a model to be implemented in Indonesia, especially in Kepulauan Riau Province. The Kepulauan Riau Province, which is close to several neighbouring countries, is a border area on the world trade route, making the Kepulauan Riau region a very strategic area in Indonesia. In addition, the territory of the Kepulauan Riau Province consists of a group of large and small islands located and connected by water. Some relatively large islands include Bintan Island, where the provincial capital is located (Tanjungpinang), and Batam Island, the Center for Industrial and Trade Development. Rempang and Galang Island, which is an expansion area for Batam's industrial area, Karimun Island, Kundur Island, Lingga Island, Island Bunguran in Natuna, and the Anambas Islands Cluster. In addition, the Kepulauan Riau Province has small islands almost scattered in all existing regencies/cities, including small islands located in the border area of the Indonesian State. The existence of these outer islands needs particular attention, considering they are vulnerable to security problems, community welfare, and environmental sustainability.

Kepulauan Riau Province has initiated a smart city concept called Kepulauan Riau Smart Province. Kepulauan Riau Smart Province is an idea from the Kepulauan Riau Provincial government to create a smart Kepulauan Riau Province based on digital multimedia by facilitating government work and public services. However, the government has not effectively solved public problems in implementing urban policy innovations in the Kepulauan Riau. Therefore, the author will analyze the adoption and diffusion of a policy innovation from Rogers' perspective so that the policy innovations carried out can solve strategic problems in Kepulauan Riau Province.

4 Discussion

4.1 Knowledge

In the adoption and diffusion of policy innovations, policy actors must know the policy innovations that will and the problems that need to quickly and accurately. Each province with an archipelagic character has the authority to manage urban management and resources in its territory. The Kepulauan Riau Province has three main characteristics of the archipelagic region from its geographical conditions. The three characteristics are an archipelago, the majority of which is marine, and bordering the sea with four countries. It also makes urban policy problems in the archipelago in the Kepulauan Riau complex. Therefore, the government needs to know about urban policy innovations characterized by archipelagic areas that can solve urban problems in Kepulauan Riau Province. The following are priority issues that occur in the Kepulauan Riau Province:

- Public service innovation and bureaucratic reform that have not
- Investment growth is low and leads to investment in maritime and tourism
- The quality of human resources is still low
- The competitiveness of economic business products and services is still low
- Quality, infrastructure, and regional interconnectivity are all severely lacking in this area.
- Kepulauan Riau's gradual development as a Malay cultural centre.

Based on the strategic issues in the Riau Islands Province, appropriate urban policy innovations are needed to solve public problems. One of them is the application of smart cities in the urban governance process in the Riau Islands. Several cities in the Riau Islands have also

claimed that their regions have implemented smart cities in implementing urban policies, including Batam City and Tanjungpinang City, and several districts that will initiate the smart city concept. These include Lingga, Anambas, Bintan, and Natuna Regencies. With the implementation of smart cities in regencies/cities in the Riau Islands, the Riau Islands Provincial Government has compiled the Kepri Smart Province, which is an idea from the Riau Islands Provincial government to realize a smart Riau Islands Province based on digital multimedia by facilitating government work and public services between islands. However, many obstacles exist to implementing smart provinces in the Riau Islands, including lacking human IT and information systems resources. In addition, there are no regulations governing the governance of the Riau Islands provincial government's domains and sub-domains, there are still many regional apparatuses that do hosting outside, and not all periodic and open information is announced on the Riau Islands Province PPID website. Furthermore, there are no regulations and draft regulations related to transparency—public information regarding the community's role in preparing public policies. In addition, the Riau Islands Smart Province implementation is still in the stage of digitizing information. Therefore, it is not yet at the stage of the effectiveness of institutional arrangements that support innovation in solving strategic issues in the Riau Islands province.

4.2 Persuasion

At the persuasive stage, the policy will determine the attitude of agreeing or rejecting the innovation to be carried out. Policy innovation is a new way or idea carried out by the government to solve public problems. However, the possibility of failure can occur in an innovation policy. Risk and uncertainty can occur in carrying out a policy innovation, so the government finds it difficult to see the uncertainty that will occur so that policy innovation can run effectively and efficiently. The government's role in risk and policy innovation is very diverse, such as the legal or regulatory framework, government institutions, and policies to minimize the risks that will be faced. Therefore, the government can manage the risks brought in by innovation policies. Another solution to reducing the risks and uncertainties that will occur is to the possibilities that will occur in the future based on experience and assessing the risks that will be taken if or not to open a policy innovation [1].

In addition to regulations, limited infrastructure and human resources are obstacles to implementing smart city/smart province urban policy innovations in the Riau Archipelago. Innovation arises from the problems in the Riau Islands, so organizational and human capabilities are needed to formulate existing problems. Moreover, the communication network is still only concentrated in big cities in the Riau Islands, such as Batam and Tanjungpinang, and has not been evenly distributed to the small and outermost islands in the Riau Islands Province Regency. Some strategic issues that are still a problem in the Riau Islands Province in the field of information technology infrastructure include the following:

- The direction of e-government development policies and strategies in the Kepulauan Riau Province is still unclear and focused
- Development and maintenance of government and public applications are not optimal
- The management of the Kepulauan Riau provincial government's domain, portal, and website has not been optimal
- The ICT infrastructure is not yet optimal in supporting good, effective, efficient governance
- The E-government that has yet integrated
- Inadequate infrastructure, facilities, and personnel for coding
- Information security assurance governance using encryption is not optimal

- The availability of statistical data is not sufficient
- Data synchronization has not yet been for development planning and evaluation purposes
- The unavailability of a fast and accurate data information system

Therefore, in implementing urban policy innovations in Kepulauan Riau Province, careful preparation is needed so that the concepts can run as planned. In addition, smart cities in the Kepulauan Riau solve the main problems in regencies and cities in the Kepulauan Riau, so the objectives of implementing smart cities.

4.3 Decision

In this decision stage, one can make an innovative decision. Then, a person will engage in activities that lead to the choice of accepting or rejecting the innovation. For example, in implementing a smart city in the district of Kepulauan Riau Province, this concept is the first step in the application of information technology in solving public problems that have high complexity. However, the smart city concept must be adapted to regional conditions and problems because implementing urban policies characterized by archipelagic areas has challenges and differs from cities with essential characteristics. Therefore, in deciding on the chosen urban policy innovation, the Kepulauan Riau provincial government can learn from cities with the same regional characteristics, namely island areas.

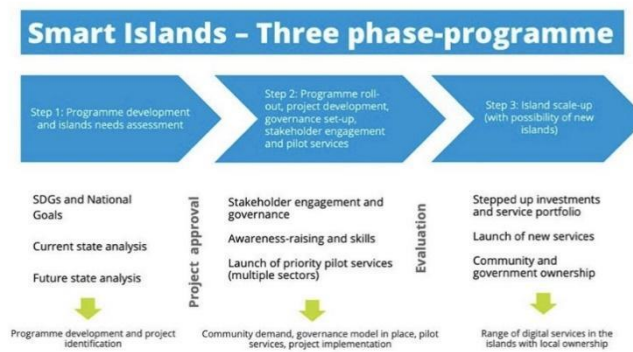


Fig 2. Smart Island

In the smart island implementation phase, the government can arrange the stages to be elected as follows so that the implementation of smart islands in the Kepulauan Riau Province can run well, including:

1. Collaborating with various parties, both with the private sector, academia, NGOs, and the community, as well as making regulations and understanding program implementation, taking into account the steps involved
2. Launched the smart island Program and linked it to the Master Plan for Digital Government Roadmap and the National ICT Development Framework so that its implementation under the provincial strategic plan
3. Setting up governance mechanisms for the program
4. Identify dedicated government officials to coordinate the program and ensure timely development
5. Mandate all decision-makers in ministries and other key entities to increase their awareness of the program and seek their active participation in it

6. Allocating financial and administrative support for the program
7. Provide active government support to all program stakeholders

4.4 Implementation

In the implementation stage of the Kepulauan Riau Smart Province, no roadmap and guidelines are governing its implementation of a smart city policy. Currently, the implementation of the Kepulauan Riau Smart Province is only to provide facilities to access digital information; not yet at the stage of digitizing urban services and management. Therefore, smart provincial governance is needed to solve public problems in the Kepulauan Riau. The governance of Smart Province is the responsibility of the executive and stakeholders. Smart Province Governance consists of managing leadership, organizational structures, and processes to ensure that Smart Province services can run sustainably and in line with regional strategies and goals. The executive and stakeholder responsibilities are in three main activities: Direct, Monitor, and Evaluate. Three main activities aim to ensure the continuity of Smart Province services and alignment with regional strategies and goals.

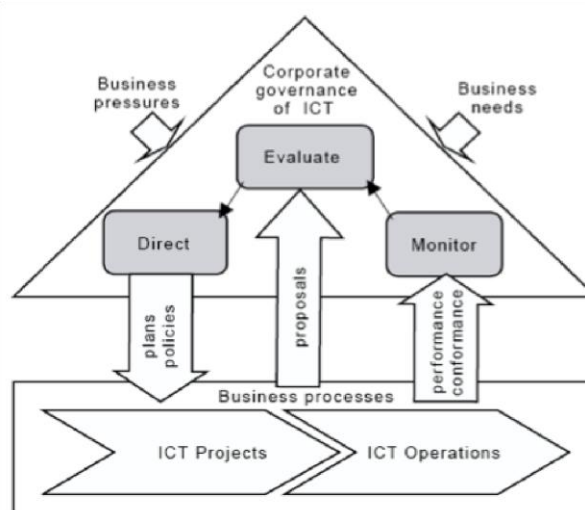


Fig 3. Governance and Management Process in Smart Province

Governance processes (Evaluate, Direct, Monitor) have an object in the form of management processes. Governance processes control Smart Province management processes to ensure the achievement of the following:

1. Alignment with the Vision and Mission and its derivatives Strategic Alignment
2. Smart Province services enable the delivery of services to the community and maximize the benefits of Value Delivery
3. Responsible use of resources Resource Management
4. Adequate management of service-related risks Risk Management
5. Measurement of Service Performance Performance Measurement

A smart province's governance function is to assess stakeholder needs, conditions, and options and determine balance, decision-making, and compliance with agreed objectives.

Meanwhile, the management function is to plan, create, operate, and monitor all activities following the direction and objectives of the regional apparatus.

4.4 Confirmation

At this stage, the Kepulauan Riau provincial government, as an adopter, may face two options for confirmation of policy adoption: to continue adopting and stop adopting. In implementing urban policy innovations in the Kepulauan Riau at this time, district and city governments are competing to initiate smart cities as one of the urban management concepts in responding to public problems in the community. However, in responding to the initiatives carried out by regencies and cities in the Kepulauan Riau, the provincial government needs to integrate all services and innovations in smart city policies to implement urban policy innovations in the archipelago in the Kepulauan Riau can be carried out as expected.

From the research results in the field, the Kepulauan Riau Provincial Government has not fully implemented the concept of urban policy innovation characterized by an archipelago. Kepulauan Riau Smart Province currently only provides facilities to support digital-savvy community ecosystems, such as Kepulauan Riau Coworking Space, Kepulauan Riau Smart Conference, Pak Din Asikk, and the Kepulauan Riau Digital Exhibition. Therefore, it is necessary to develop the Kepulauan Riau Smart Province model to implement urban policy innovations and integrate all smart city service innovations between districts and cities in Kepulauan Riau Province.

5 Conclusion

The application of urban policy innovations is different in mainland and archipelagic areas. So it requires careful adoption of policies so that the innovations carried out are effective and efficient. For example, Kepulauan Riau Province has initiated a smart city concept called Kepri Smart Province to create a smart Kepulauan Riau Province based on digital multimedia by facilitating government work and public services. However, the government has not effectively solved public problems in implementing urban policy innovations in the Kepulauan Riau. In this study, the authors analyze the adoption and diffusion of a policy innovation from Rogers' perspective. Namely, in implementing policy innovations, knowledge, persuasion, decision, implementation, and confirmation must be used.

Policy actors must know policy innovations that will and the problems that need to quickly and accurately. The government has chosen to apply the smart city concept in urban policy innovation, but many obstacles still occur, so this concept has not been in Kepulauan Riau Province. In the implementation of Kepulauan Riau Smart Province, there are still no supporting documents such as roadmaps and implementation guidelines as well as regulations governing the governance of urban policy innovations, namely Kepulauan Riau Smart Province and derivative smart city innovations in the districts and cities of Kepulauan Riau Province, no roadmaps and guidelines are governing its implementation smart city policy.

Currently, the implementation of the Kepulauan Riau Smart Province is only to provide facilities to access digital information. Not yet at the stage of digitizing urban services and management. Therefore, smart province governance is needed to solve public problems in the Kepulauan Riau. Furthermore, in response to the initiatives by districts and cities in the Kepulauan Riau, the provincial government needs to integrate all services and innovations in smart city policies to implement urban policy innovations in the archipelago in the Kepulauan Riau can be carried out as expected.

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