Conference Paper

Barrier on Strengthening Regional Innovation System (RIS) in Banten Province, Indonesia

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Abstract

The objective of this study is to identify the inhibiting factors to determine the strengthening of Regional Innovation System in Banten Province. Research method used is a descriptive qualitative method guided with previous research on barrier determinant factors. The findings show that the barrier determinant index ranked from the highest to the lowest point are Structure barrier value = 4.1, Innovation of the environment = 3.8, supporting research and development = 3.5, Human resources = 3.6, and Infrastructure = 3.1. The structure barrier become the main determinant factor in implementing RIS, meaning that there is poor synergy between stakeholders, less commitments, and misleading perception to RIS. Innovative environment index equals to 4.8, indicating low innovation activity, absence of formed cooperative between all the participants of the innovation process, lack of interest on innovation and uncertainty of economic results, underestimation of partnership networks, absence of brand that would form a regional cluster, inability to gain benefits from the combination of cooperative. The Human resources index equals to 3.6, meaning that the leadership, human capacity, professionalism, and responsibility toward RIS become determinant factors in the level of strengthening of RIS. Infrastructure index equals to 3.1, which is the lowest barrier index meaning that basic facilities and poor social amenities show the existing physical modal and social culture support toward RIS. It was supposed to link the opportunities and strong value by minimizing the barrier determinants value to determine the success of strengthening the implementation of Regional Innovation System.

Keywords: barrier, Regional Innovation System, Banten Province

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1. Introduction

The principal empiric sign of the trend toward decentralization is the apparent growth in importance of regional clusters and innovation systems over the last decades, (Isaksen 2001). Regional actors targeted by the RIS cover the whole range of stakeholders involved in innovation within a territory: universities, technology-oriented enterprises, knowledge-intensive business service firms (KIBS), other firms, start-ups, and new

technology-based firms, regional and local government or administration, public funding agencies, intermediary technology transfer offices, advisory bodies, etc., and their networks, venture capital firms, non-university research institutes. (Prest 2005).

Strengthening the Regional Innovation System is an integral part of the national development program of science and technology which is in accordance with the Law No.18/2002 on National System of Research, Development, and Application of Science and Technology. Strengthening the National Innovation System is the main vehicle to improve the competitiveness and social cohesion in realizing a prosperous, independent, and civilized society. In the framework of strengthening the innovation system, the dimension of locality is very important in paying attention to the local wisdom of each region (Budiarto, 2017). As mandated in the Joint Ministerial Decree between the Minister of Home Affairs and the Ministry of Research and Technology, Number 03 and 36 of 2012, on strengthening the Regional Innovation System to be established as a reference for provincial and district/municipal governments to improve local government capacity and regional competitiveness. In the application of the Regional Innovation System, the spirit of regional autonomy provides flexibility for local governments to organize governance in their respective areas in the framework of the management of resources owned (Budiarto, 2017). In this case, Banten Provincial Government can evaluate the barriers faced while strengthening Regional Innovation System (SIDa) in order to achieve the next vision as stated in the strategic planning and development goals.

One of the constraints in the implementation of RIS or SIDa is not all about the Regional Subsidiaries Government Units (OPD) to know and understand the national policy in the context of strengthening RIS or SIDa. Furthermore, Oktaviana, Widianty, and Amar (2014) explain that the important factor of success and sustainability of SIDa implementation depend on the extent to which Regional Subsidiaries Government Unit (OPD) is able to integrate SIDa implementation programs and activities into their respective work plans. The essence of this success will be very closely with the regional capability in advancing innovation systems and enhancing regional competitiveness which are in accordance with its best potential.

Dibrov (2015) points out that the innovation process is characterized both in terms of technological and institutional changes. The sincerity and commitment of local governments and stakeholders in carrying out regional innovation strategies that have been mutually agreed upon are important factors for achieving success. In general, implementation of SIDa in Banten Province has not run optimally. It could be because of the weak quality of resources and the limitations of the Regional Subsidiaries Government

Unit (OPD) in understanding the urgency of implementing SIDa in helping accelerate and achieve the regional development objectives. Therefore, it is necessary to map the constraints or barriers faced by the Banten Provincial Government in implementing SIDa.

2. Research Method

A qualitative research is used in this study by utilizing a case study approach. The method is used to describe problems and phenomena recorded at the research sites. The research design is tailored to the issues that have been raised by Brilyianese and Wiyono (2017). Qualitative research methods have an important role in the social field studies and in the application in such areas as education and management (Marshall & Rossman, 1995). The data in this study are collected through the process of observation, in-depth interviews, and document review as well as from secondary data. Preliminary study was conducted before the field study to gather information from several sources to obtain elements as a focus which is then applied to the object of research.

Data collection used individual interviews with key respondents for each actor that constitutes the RIS. The first contact established by the authors included an explanation about the objective and the importance of the study at hand (Oliveira et al., 2017).

3. Results

3.1. RIS policy

Banten's Regional Innovation System has run since the Governor's Regulation on Strengthening the Regional Innovation System through forming the Regional Innovation Team and Banten Road Map of RIS. In modern conditions, the basic and the most important part of regulations are reflected in the set of laws, judicial, and administrative acts. The political institutions are primary in relation to the economic ones, so the state determines the norms and rules of the economics. Therefore, the state can influence the processes occurring inside it, such as barriers of entering and exiting the market interest to invest into these projects. It can set the conditions for the functioning, benefits and so on (Plotnikova, Korneva, and Ustuizhanina 2015).

3.2. Barrier determinant factors

We investigated and identified previous researches for any factors causing the barriers on implementing regional innovation system. There are many barriers identified making the implementation regional innovation system in Banten Province work in adequate.

Table 1: Barrier determinant factor identified from previous researches.

No.	Barrier Determinant Factor	Author
1.	Structured barriers, the coexistence of research and operation culture, dominant value system and difficulty of resolving these differences in a hierarchical organization	Dilman (1996)
2.	State action and infrastructure, form of activities for innovation support, education management.	Plotnikova et al. (2015)
3.	Political uncertainty, skill shortage, internet, dominant industry effect, tight credit condition, stretched credit period, infrastructure	Kotey and Sorensen (2014)
4.	Human resources, research and development, infrastructure, innovative environment	Mikhaylova and Mikhaylov (2015)

It was summarized that the barrier determinant factors from previous research are alignments to the RIS model in Banten province and categorized into main five determinants. The barrier determinant factors are Structure barrier as seen in Dilman (1966) and Plotnikova et al. (2015); Innovation environment as seen in Mikhaylova and Mychaylov (2015); Infrastructure as seen in Kotey and Sorensen (2014) and Mikhaylova and Mychaylov (2015); Human resources as seen in Mikhaylova and Mychaylov (2015); and supporting research and development as seen in Mikhaylova and Mikhaylov (2015).

Data analysis found the value index of barrier determinant factors on strengtening RIS in Banten Province are shown in Table 2.

Table 2: Barrier value index.

No.	Barrier	Barrier Value Index
1.	Structure barrier	4.1
2.	Innovation environment	3.8
3.	Infrastructure	3.1
4.	Human resources	3.6
5.	Supporting research and development	3.5

The barrier determinant value index ranked from the highest to the lowest point are Structure barrier value = 5.1, Innovation environment = 4.8, Supporting research and Development = 4.1, Human resources = 3.6, and Infrastructure = 3.1.

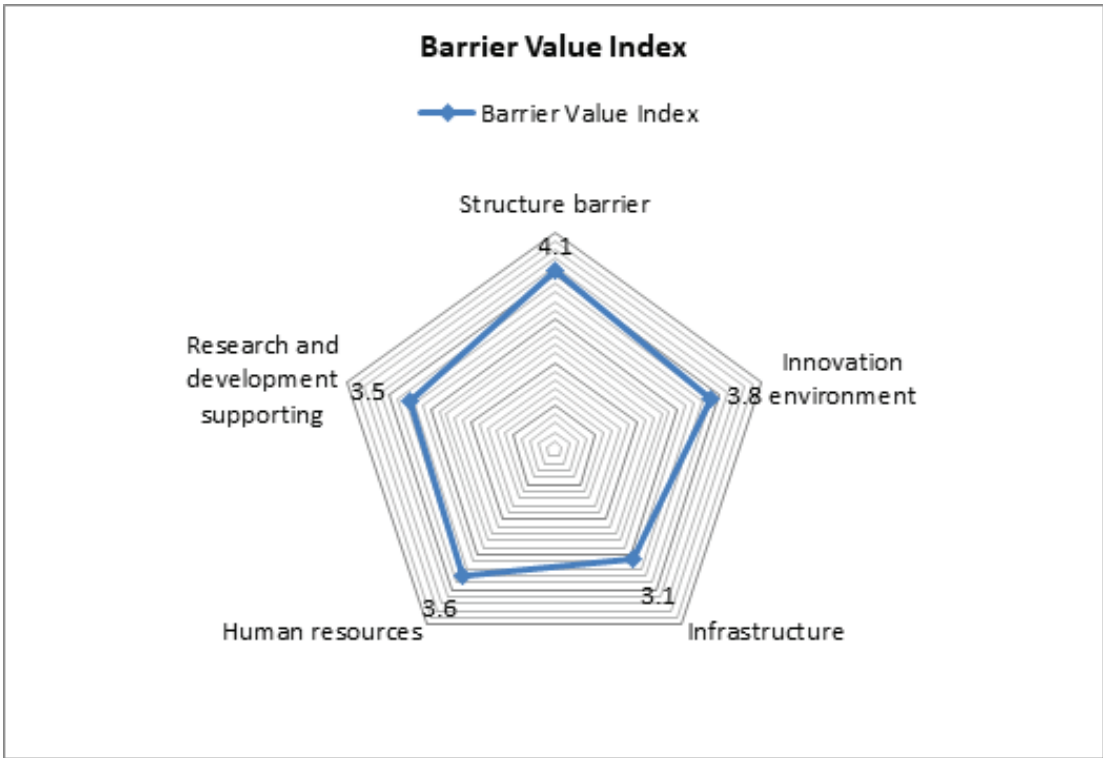

Figure 1: Barrier value index of determinant factors. Sources: Data analysis.

4. Discussion

The structure barrier value index is 4.1, the highest value. It is supposed that the structure barrier was the main factor influencing the implementation of regional innovation system. Furthermore, the structure barriers consist of some components factor influenced and the main determinant is building a perception on regional innovation system toward all Stakeholders. Structure barriers to innovation identified are: limited renewal of actors representing civil society; no incentive for active policy cross-learning among administrations; limited availability of funds for policies outside the script provided by the national government; lack of co-ordination between the education system and the employment policy system; and political reasons (Carstensen and Ibsen, 2015). Strengthening RIS in Banten tended to be regional government centered. Even, many subjects were oriented to build their misleading perception of RIS. It was difficult to meet the RIS goal and objective.

Structure barrier is a major inhibiting factor in implementing RIS in which Infrastructure value is the smallest inhibitor. The RIS design in Banten should solve the problem of the structure barrier. Structure barrier index includes elements of stakeholders, synergy, commitment, and misleading orientation. Structure barrier also consists of

organized co-operation (agreements) between firms, stimulated by trust, norms and conventions (Isaksen 2001).

Infrastructure index equals to 3.1, the lowest barrier index, meaning that basic facilities and poor social amenities show the existing physical modal and social culture supporting toward RIS (Kotey and Sorensen 2014). Innovative environment index equals to 3.8 indicating low innovation activity in the business sector; absence of formed cooperative to all the participants of the innovation process, lack of interest on the part of business in innovation, uncertainty of economic results, underestimation of partnership networks between parties, absence of forming a regional clustered (Mikhaylova and Mikhaylov, 2015). The Human resources index equals 3.6 meaning that the leadership, human capacity, professionalism, responsibility toward RIS determine the factor of strengthening RIS. It is important to select a cross-functional core team of visionary, energetic change agents and future leaders inspired and inspiring individuals who want to make a difference (Zarrabi, Poursadegh, and Jafarvand, 2013).

5. Conclusion

The barrier determinant index ranked from the highest to the lowest point are structure barrier value = 4.1, innovation of the environment = 3.8, supporting research and development = 3.5, Human resources = 3.6, and infrastructure = 3.1. The second period of strategic implementation of RIS in Banten Province must consider the barrier of determinant factors evaluated. Decreasing the value of barrier determinant factor will influence the implementation of innovation process toward the proper target. It was supposed to linkage the opportunities and strong value by minimizing the barrier determinants value to determine the success of strengthening the implementation of regional innovation system.

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