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Application of rural web in analyzing the economic performance of rural areas in Johor

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Abstract. Planning for sustainable rural development in Malaysia has entered a phase where rural areas are no longer tied merely to food production as an economic activity. The increasing demand for rural amenities, ecosystem services and preservation of cultural landscapes generates the idea of a much diverse option for an alleviation of the local economy. Due to the variation of local actors, resources, and activities, sustainable rural planning requires the understanding of the complex development processes occurring in its territories. The rural web is an analytical framework that can be used to understand the dynamic relationships between different domains of rural development. In this paper, the rural web is used as a tool to comprehensively analyze the economic performance of the village's development and economic activity of rural areas in Johor. This paper discusses the study areas of six villages from six different rural areas surrounding the state of Johor. The finding shows that KampungParitPuteriMenangis has the highest economic performance while KampungPayaBesar was identified as the lowest economic performance compared to other villages. Market governance was identified as the major domain of the rural web in the twenty economic projects identified in six selected villages for this study.

1. Introduction

Rural is a place where man and living nature exists through their ongoing encounter, interaction and mutual transformation. This interaction between man and nature exists through a range of different practices that are bounded spatially and temporally [1]. Rural areas are very significant to human societies as it encourages them to be exposed in terms of social, economic and cultural. Scholars like Bernard, Isa, and Dixon agreed that rural communities in most developing countries around the world are typically economically disadvantaged [2-4]. Rural communities and their development is an important aspect of political and economic stability of a country. Rural, poor and isolated community frequently deal with many problems in attaining equality of economic and accomplishing sustainability of socio-economic, typically among rural communities who have income sources restricted [5-8]. In addition, Salborn explained that these rural communities suffering from stagnant agricultural productivity, and those in the large informal sector, have seen little income growth [9].

The rural communities in Malaysia are no longer tied to only agricultural activities as their main economic activity. The variation of activities and local actors involved in the processes of rural development has proven that this nature of diversification in generating the rural economy is in need of a comprehensive framework that would be able to analyze the economic processes which



contribute beyond the input from the agricultural sector. Thus, the rural web is an analytical framework that can be used to understand the dynamic relationships between different domains of rural development. The complexity is analyzed through the interrelationships between domains of endogeneity, novelty production, sustainability, social capital, new institutional frameworks and market governance. The rural web model can be used as a tool of analysis to inform the debate on how to achieve an effective set of approaches for rural development [1]. The model was derived from a research project analyzing rural development case studies that allow researchers to overcome traditional disciplinary and sectorial limitations [10]. Instead of being a result of direct policy interventions, processes of rural development are being shaped by the creative patterns called the rural web. The rural web can be used as an explanatory scheme, a concept and also a tool for exploring, analyzing and interpreting the dynamics that define rural territories, supporting the idea that every territory has its own dynamics and responding differently through its own intertwined institutions of society and economy [11]. Therefore, this research provides an understanding of the domains of the rural web in analyzing the performance of the village's development and economic activity of rural areas in Johor.

2. Literature review

2.1. Differentiation in rural economic performance

The picture of rural regions should be seen rather in terms of 'a new mosaic of rural regions' with high performance, moderate performance, and low performance [12-14]. This mosaic of rural regions directly raises questions about driving forces behind this pattern. Of course, such questions are merely a variant of the often-posed question in economic literature: why do economic growth rates differ among regions? Insight into the driving factors behind the economic performance of rural regions is not only scientifically of interest, but it is also highly politically relevant. There is a suggestion that the determinants behind the differences of economic performance in rural regions are related to the interplay of local and global factors, in which population dynamics, territorial dynamics, and the current globalization process are thought to be main determinants. Deeper discussions on this issue of rural economic had established to highlight their research on this matter. As the scholars elaborated that population dynamics, territorial dynamics and globalization process are the major determinants of the economic performance differences between rural areas using a method of pattern-matching of the rural economic project based on the application of rural web [15-17].

2.2. Application on rural web

The rural web is a multi-dimensional instrument that has flexible adaptability towards the changing conditions of globalization and in every stage in rural development. The web consists of links and networks of mutual relationships, achieving the effects of synergy as a method to design solutions for rural development [16]. Defined as a collection of individuals, resources, activities and processes that interacts with each other within a territory, the rural web model consists of six theoretical dimensions. The dimensions are endogeneity, novelty production, sustainability, social capital, new institutional frameworks and market governance [1, 18, 19]. These six dimensions were identified as the indicators on the assessment of the village's project and economic activities in the study areas. The endogeneity domain relates to the strengthening of local resources such as the cultural heritage of the rural territory, its natural environment, landscape and local food. The endogeneity domain also emphasizes on efforts related to the promotion of goods made by local producers, including human resources significantly related to the development of local knowledge and their intercommunication. As for the domain of market governance, it focuses on local market and branding, marketing strategies and image building. The domain of new institutional arrangements refers to the new organizational arrangements that take place at various levels and sectors in the development of activities as well as changing business content from a traditional approach to new organized structures. Novelty as a domain refers to practices and insights that are new in the territory. This could be in forms of resources, technological procedures or even body of knowledge with new refers to practices and insights that are new in the territory arrangements that function better. The domain of social capital reveals the social living conditions in the rural territory which refers to the development of collective actions between farmers and other

producers. Lastly, the domain of sustainability refers to the presence of ecological and social conditions that are required in order to support the wellbeing of future generations.

3. Methodology

3.1. Collection of data for rural web structure

The collection of primary data for study areas was done through observation and in-depth interviews with important individuals from every village such as *penghulumukim*, head of villages, elders and local actors (businessman, farmers, and fishermen). The data collection was done to draw the village's demographic profile, structural characteristics and key elements of the study area in order to identify the rural web and its dynamics. The territorial capitals of the study area were then analyzed with the purpose of finding out the evolutionary dynamics triggered by the local initiatives in the territory. The description of the territorial capitals and its evolution would reflect the formation of the rural web in ways that it emerges, thus producing effects that would provide a progressive structuring of the territory's web. The case study area selected for this study is six villages from six districts of Johor. The initiatives done by actors in these six territories provides a better understanding of the different way the web is structured in rural Johor.

3.2. Study area

OECD has defined the rural area which has a population density of fewer than 150 people per square kilometer [20]. Thus, the study area is located in rural areas in Johor, Malaysia in which the selection of the study area is based on two selections. First, the selection of six sub-districts using cluster sampling based on the sub-district in three different categories of rural density levels and spatially distributed across the Johor state. The categories are low-density rural level (0-50 people/km²), medium-density rural level (51-100 people/km²) and high-density rural level (101-150 people/km²) and two sub-districts were selected in each three levels. Second, the type of rural settlement for the village's selection is a traditional village located in six different sub-districts based on the geographical context and characteristics of demography in each place. There are three following steps on the selection of villages and the selected villages detail and location are shown in Table 1 and Figure 1:

- (i) 20 villages were identified in the six sub-districts based on different localities,
- (ii) The preliminary visit was conducted at all 20 villages to obtain cooperation,
- (iii) Six villages were selected based on the willingness and cooperation from the village administrative and located in different regions across the Johor state to represent the six sub-districts.

Table 1. Details on the selection of study areas

Density Level	District	Sub-District	Village	Families
0-50 people/km ²	Mersing	Penyabong	Kampung Simpang Penyabong	288
	Johor Bahru	Sungai Tiram	Kampung Tanjung Langsat	178
51-100 people/ km ²	Pontian	Ayer Baloi	Kampung Parit Puteri Menangis	220
	Ledang	Kundang	Kampung Teluk Rimba	142
101-150 people/ km ²	Batu Pahat	Minyak Beku	Kampung Sungai Lurus	275
	Segamat	Pogoh	Kampung Paya Besar	190

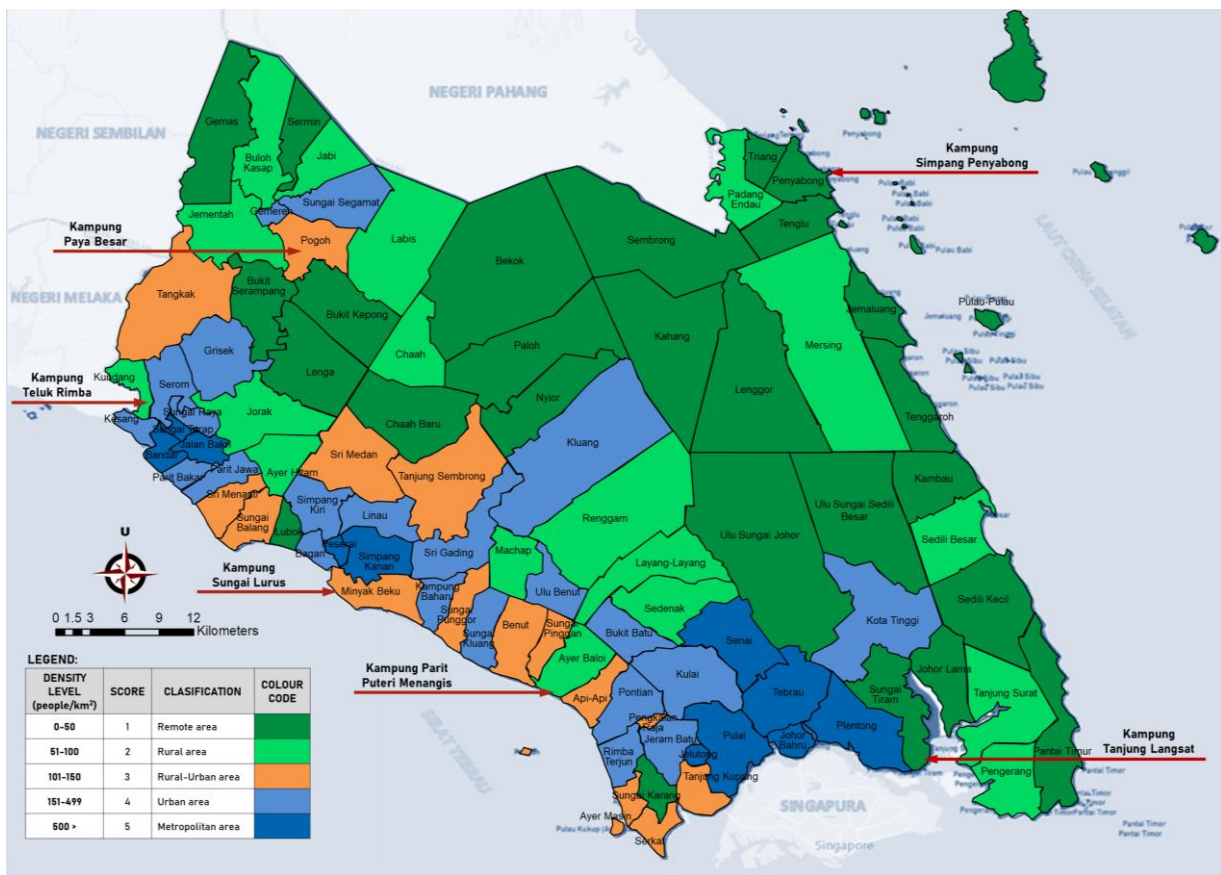


Figure 1. Location of study areas in Johor, Malaysia

4. Findings on rural web domain interrelation of study areas

Based on the analysis of six different villages in Johor, the developments of the villages are mostly driven by market governance as it’s the dimension with the biggest impact towards the competitiveness of the rural area in generating economy. This is followed by the endogeneity domain and novelty domain with a medium impact. The domain of social capital has the least impact. However, a negative impact was found on the sustainability domain where certain initiatives and projects done in the villages contributes to the degradation of environmental condition. Although the efforts were practiced in order to increase the economic performance of the territory, projects such as palm oil plantation, water transportation and driving school were negatively affecting the environment of the village. Palm oil plantation in Kampung Simpang Penyabung located near the river was found to negatively affect its water condition whereas the village’s water transportation pollutes the river as the usage of diesel causes an oil spill. It was found from the study that all six villages have a significant project as the main contributor to its performance in the economy. For Kampung Simpang Penyabung, the main initiatives were resort and chalet business, as well as fisheries. This is due to the location of the village that is located in the coastal region of Johor. The primary domains for the generation of the web for this village are endogeneity because the initiatives were done through the valorization of local resources such as the marine products and the resort being located in the coastal areas.

Kampung Tanjung Langsat also has the same locational attribute, where fisheries were seen as the main economic activity. As for Kampung Parit Puteri Menangis, the economy is mainly generated by pineapple business and palm oil plantation. The primary domains in this village are endogeneity and market governance. Although palm oil plantation was also one of the projects done in Kampung Teluk Rimba, the main generator of the economy in the village is through paddy. Kampung Sungai Lurus is also another village located in the coastal region with fisheries being the main economic activity, but what stood out most was the uniqueness of its initiative in seafood business. This initiative has the

novelty domain as its primary domain because the seafood business has successfully used a new idea which was previously a foreign concept in the territory, into a generator of local economy when it became an attraction that draws local tourists into the village. Compared to all five other villages, Kampung Paya Besar is the village that did not diversify its economic activities because the agricultural land in the village is only suitable for commodity crops such as rubber and palm oil.

It was also discovered that all the villages have differences in terms of economic performance. Through the identification of the domains in the rural web, Kampung Parit Puteri Menangis was found with the highest economic performance compared to other villages because its pineapple business acts as a catalyst in contributing to the increase in the village's socio-economic values. Meanwhile, Kampung Paya Besar was identified with the lowest economic performance compared to other villages as the village's economic activities largely depended on commodity crops such as palm oil and rubber which has price uncertainties in today's market. The low economic performance was also due to the remoteness of the village, being geographically surrounded by estates and commodity plantations, and it is located twenty minutes away from the main road. The projects and initiatives of the study areas in relation to the six domains of rural web is scored with its primary domain(++), positive domain interrelation(+), negative impact(-) and not related(0) as a means to assess its importance in generating the rural web (See Table 2).

Table 2. Assessment of the village's project in the domain of rural web

Village	Initiative/Project	The domain of Rural Web					
		Endogeneity	Novelty	Market Governance	Social Capital	New Institutional Arrangements	Sustainability
KampungSimpangPenyabong	Resort and Chalet business*	++	+	+	+	0	0
	Fisheries*	++	+	+	+	+	0
	Palm oil Plantation	+	0	++	0	+	-
	Local Business	+	+	+	++	0	0
	Water transportation	+	++	+	+	0	-
	Palm oil plantation*	+	0	++	0	+	-
KampungTanjung Langat	Fisheries*	++	+	+	+	0	0
	Seafood business	+	++	+	+	0	-
	Small Medium Industry (Food)	0	+	++	0	+	0
KampungParitPuteriMenangis	Pineapple business*	++	+	+	+	+	+
	Palm oil plantation*	+	0	++	0	0	-
	Groceries shop	0	0	+	++	0	0
KampungTelukRimba	Paddy*	++	+	+	+	+	+
	Palm oil plantation	+	0	++	0	+	-
	Rubber	+	0	++	+	0	0
	Homestay	0	++	0	+	+	+
	Fisheries*	++	+	+	+	+	0
Kampung Sungai Lurus	Seafood business*	+	++	+	+	+	0
	Palm oil plantation	+	0	++	0	+	-
	Coconut	+	0	++	0	0	0
	Driving School	0	++	+	+	+	-
KampungPayaBesar	Rubber*	+	0	++	+	+	0
	Palm oil plantation*	+	0	++	0	+	+
	Agricultural Crops	++	+	+	+	+	+
	Durian	++	+	0	0	0	0

*Significant initiative/project

5. Conclusion

The importance of the rural web concept for rural studies is the fact that it precisely resembles the multi-layered networks that exist within the rural. The adaptability of rural web domains to any rural territory in order to study their relationships proves that it can be used to compare the different webs that emerge from different rural territories. From the theoretical point of view, the rural web is composed of six different domains that make up the development of rural areas whereas at an empirical level, the web is made up of actors, resources, initiatives and economic activities. By finding out the domains that drive the development of each village, these relationships of domains helped in analyzing the economic performance of rural areas in Johor. Out of the twenty economic projects discovered in six villages in this study, market governance is the major domain that may lead to the differential in economic performance, followed by the domains of endogeneity and novelty. The domain of social capital was found to have the least impact. It is also important to take note that the sustainability domain is an influential domain that needs to be highlighted in order to address solutions for the economic projects which concern the sustainability of commodities, services and businesses.

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