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The Impact of Covid-19 Pandemic Towards Socioeconomic Wellbeing of Rural Community in Malaysia

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Abstract. The Covid-19 pandemic has impacted the socio-economic well-being of people either in urban or rural areas. The Covid-19 cases and fatalities that concentrated in major urban areas in Malaysia. However, as the pandemic progressed, the rural community faced health vulnerability due to the Covid-19 pandemic threat. Among the significant impacts of the Covid-19 pandemic are income generation, economic activity work, and health vulnerability, especially the rural community involved in rural economic activities such as agriculture and fishery. Therefore, this paper aims to investigate the impact of the Covid-19 pandemic on the socio-economic well-being of rural communities in Malaysia. The case study selection is in Mersing, Pontian and Batu Pahat involving three villages using GIS mapping. The methodology used is quantitative research through a household survey conducted using 182 heads of households based on the economic and social dimensions. The finding reveals that most of the target group experienced a decline in income generation, economic activity restriction, and education issues. Furthermore, there are also decreasing in the economically active population (age 15-60) in the village. As a result, this study is essential in formulating a post-Covid-19 recovery plan regarding socio-economic well-being impacts and the revival of rural community well-being in Malaysia through Geographic Information Systems (GIS) mapping.

1. Introduction

Coronavirus disease 2019 (COVID-19), which emerged in December 2019 in Wuhan, China, has posed one of humanity's most significant challenges in the 75 years since World War II [1]. According to [2], 14,509 people died globally up to March 23, with 1727 new death cases, and a total of 332,930 confirmed cases have been contaminated by COVID-19, with 40,788 new confirmed cases [2].

Outbreak control is divided into three phases, first is containment, second is mitigation, and third is suppression. Containment priorities in identifying, quarantining, testing and isolating identified close contacts as well as public measures in controlling infections such as vaccination [3]. The trend of positive COVID-19 cases in Malaysia shows an increase from time to time. On 18 March 2020 the Movement Control Order (PKP) was enforced with full enforcement. The Conditional Movement Control Order (PKPB) came into effect on 4 May 2020, subject to the economic and business sectors to strict Standard Operating Procedures (SOPs) and high adherence to non -pharmacological measures except international borders, the Restoration Movement Control Order (PKPP) has been implemented on 10 June 2020, with the reopening of the business, education, religious, sports activities and social

activities sectors with strict SOPs as well as high compliance including avoiding 3C and adopting 3W [4]. According to [5], The following measures were implemented under MCO:

  i.   Prohibition of mass movements, religious, sports, social, and cultural activities.
  ii. Closings of business premises except for essential goods and needs services.
  iii. Self-quarantine and health check assessments for those returning from abroad.
  iv. Prohibitions on tourists and visitors.
  v.   Closings of all government and private territories.

This study aims to provide insights into what has changed in response to COVID-19-fighting policies in the coming days. To analyze the impact of the COVID-19 pandemic on the well-being of the rural community in Malaysia. This study also figures out the impact on community socio-economic well-being within the lockdown and after the lockdown period.

2. Literature review

2.1 Covid-19 in rural areas

The rural economic sector is often associated with agriculture and fisheries [6]. However, the impact of urban development around rural areas has given changes in the economic sector to the urban population, such as the involvement of rural residents in the industrial sector, tourism, and others. Impact of Covid-19 from the Standard Operating Procedure (SOP) can potentially disrupt the input production process, manufacturing systems, distribution network, and output marketing, negatively impacting the economic sector's performance and social to the rural community [7].

The economic restriction has had a significant impact on the economy of the rural population. Most economies need to be shut down to assist the government in curbing the spread of the covid-19 epidemic. The closure of most sectors of the economy has caused communities to lose their jobs and wages to be cut as the workplace cannot afford to pay wages [8]. In agriculture and fisheries sector no buyers, dealer and also issues on transportation to get the agricultural products to the market area [8]. In social, people experience daily lifestyle change such as in the education sector. Students need to have online learning, and workers have to work from home, no religious activities in a group and no physical activities [9].

2.2 Covid-19 impact on socioeconomic well-being of rural community

All the negative impacts in socio-economic of the rural community will produce low well-being which based on [10] Well-being should encompass all of life's necessities in terms of material fulfilment, health, education, safety, living comfort in a good environment and a problem-free society, as well as aesthetic and spiritual enjoyment. Furthermore, definition of well-being is closely related to the socioeconomics of the population of an area [11]. There is evidence that changes in well-being and values are influenced by external factors which economic dimension and social dimension [10]. In this study, economic dimension involves income and size of working family. Moreover, social dimension contains age structure and education level [12]. Values and happiness can be linked directly or indirectly with the socioeconomic household. Each value is associated with specific attitudes and beliefs about the world, which can directly impact well-being (e.g., safety and relationship with other people during the Covid-19 lockdown). The socio-economic and well-being of the community are interdependent with each other [13]. According to [14], the lower a person's income, the lower their well-being. During In Covid-19, most of the community had an income decline. Therefore, this research is essential to identify the impact of the Covid-19 pandemic on the socio-economic well-being of the rural community.

3. Study area

3.1 Selection of district and sub-district

In 2018, the Selection of study area using rural density level in Johor on three-level: a low-density level of rural areas 0-50 people/ km² (remote area); a medium density level of rural areas 51-100 people/ km² (rural area); and a high-density level of rural areas 101-150 people/ km² (rural-urban area) [7][15]. Geographic Information Systems (GIS) mapping is used in determining the administrative boundaries of districts and sub-district using the attributes of acres and total population [16].

Table 1. Density level in Study area

District	Sub-District / Mukim	Total Acreage (Hectare)	Total population (Years)		Density Index (People/km²)		Density level	
			2010	2020	2010	2020	2010	2020
Mersing	Penyabong	10,113	1,318	1,726	13	17.1	0-50 people/km² (Low)	0-50 people/km² (Low)
Pontian	Ayer Baloi	14,219	12,220	14,106	85.9	99.2	51-100 people/km² (Medium)	51-100 people/km² (Medium)
Batu Pahat	Minyak Beku	13,157	17,324	19,556	132.0	148.6	101-150 people/km² (High)	101-150 people/km² (High)

(Source: Calculated from DOSM, 2011, 2021)

Based on [17] that mentioned that rural area is an area that has a population density of less than 150 people per square kilometre. Table 1 shows [18] [19] there are three district, and three subdistricts involve in study area which is Penyabong represent district of Mersing, Ayer Baloi represent of district of Pontian and Minyak Beku represent District of Batu Pahat.

3.2 Selection of villages and village profile

The second stages is selection of village based traditional villages as a type of rural settlement in three sub-district which is Penyabong, Kundang and Ayer baloi and also selected based on highly cooperation from village administrative and located at different region across the Johor state as to be representative for the three sub-districts. Table 2 shown the list of selected villages and figure 1 shown location of study area in Johor using GIS mapping [16].

Table 2. Selection of village

Density Level	District	Sub-District / mukim	Village	Population (people)	Number of Houses
0-50 people/km² (Low)	Mersing	Penyabong	Kampung Simpang Penyabong	1056	288
51-100 people/km² (Medium)	Pontian	Ayer Baloi	Kampung Parit Puteri Menangis	1025	220
101-150 people/km² (High	Batu Pahat	Minyak Beku	Kampung SungaiLurus	1374	275

*Source of data is based on the first site visit to every selected village by discussing to the head of the village *(Ketua Kampung)* and *Penghulu Mukim*.
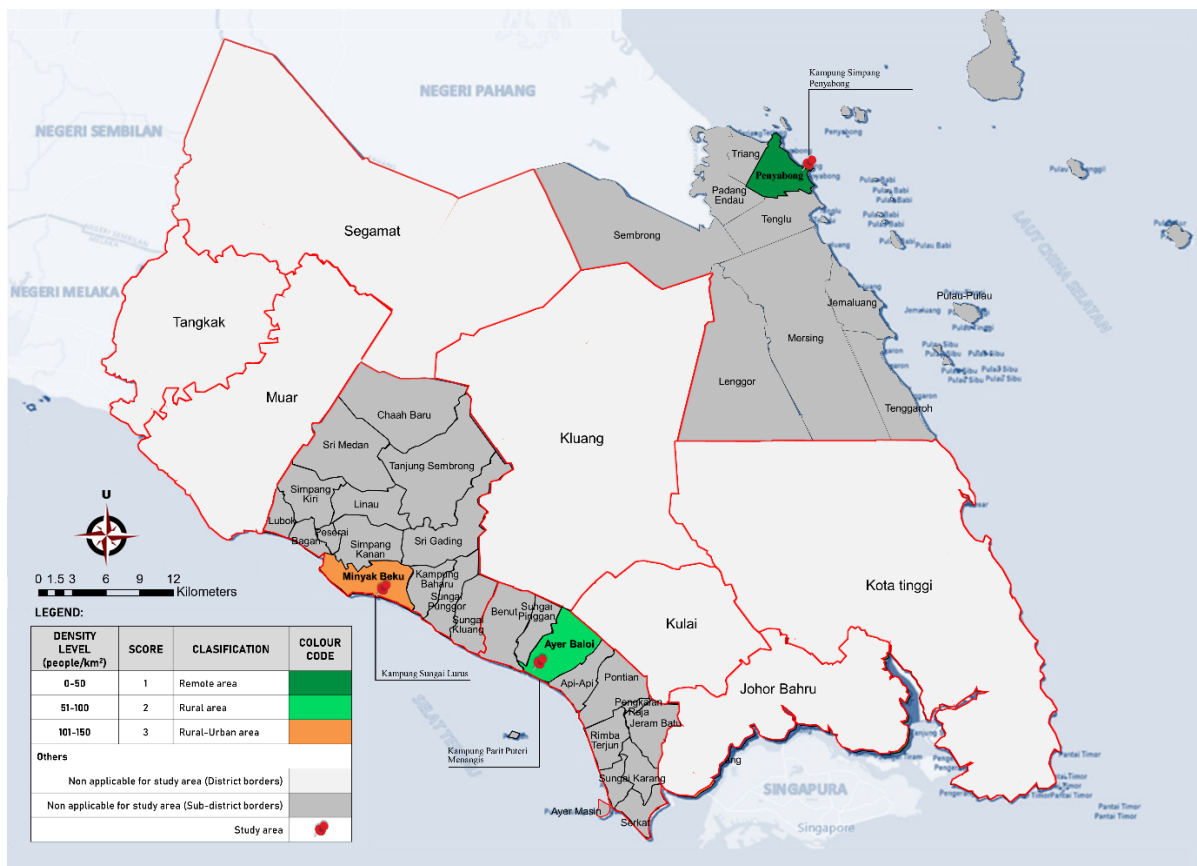
Figure 1. Location of study area in Johor

a) Kampung Simpang Penyabong

Kampung Simpang Penyabong is located in the Mukim of Penyabong, district of Mersing, Johore (Figure 1). According to the head of village, this village has 288 houses and 1,056 people in 2010, all of whom are Malays. Kampung Simpang Penyabong is the main village that has three network villages: Kampung Teluk Sari, Kampung Sisik, and Kampung Tanjung Resang (Land use: agricultural-55%; residential-25%; commercial-15%; institutional-5%) [19]. This village was originally inhabited by some fishermen who made this place as a jetty for fishing since the old days. The continuity of this fishing jetty until today has influenced the fishermen and fishing activities as the main occupations and income for the people inside this village. Most of the villagers work as fishermen and other related sectors to the fisheries, tourism, and businesses.

b) Kampung Parit Puteri Menangis

This village is divided into six zones to facilitate administration and conducting community activities (Percentage of land use: agricultural-50%; residential-30%; institutional-15%; commercial-5%) [19]. The village is located at the mukim of Ayer Baloi in the district of Pontian (Figure 1), about 30 kilometres away from Pontian town and 50 kilometres from Batu Pahat town. According to the current head of village, the major economic sector in which most of the villagers were involved are the agricultural and plantation sector (45%), followed by manufacturing and construction sector (25%), services and retailers sector (15%), government sector (10%) and husbandry and fisheries sector (5%).

c) Kampung Sungai Lurus

Kampung Sungai Lurus is located at the Mukim of Minyak Beku, in the district of Batu Pahat (Figure 4.9). This village is a traditional and agricultural-based village. It is located only 800 metres away from a small town of Senggarang and 20 kilometres away from Batu Pahat town (Figure 1). Percentage of land use involve agricultural-45%; residential-30%; commercial-15%; institutional-10% [19]. of the villagers here work in the agricultural sector approximately 82 per cent are farmers who own a land of palm oil, coconut, or sugarcane plantation. Whereas only about 10 per cent of villagers are involved in the fisheries sector, particularly as fisherman running belangkas businesses. The remaining 8 per cent of the villagers work in a small-medium industry (SMI) sector such as the production of keropok lekor, mee siput and kerepek, or in a business sector such as grocery store, food stalls, and seafood restaurants

4. Methodology

This study uses approach quantitative, which uses household surveys. In 2018 there are household servay for socioeconomic status that involve 182 head of households for three village selected in district of Mersing, Pontian and Batu Pahat [7]. For this study used the same of sample size which is 182 head of household to compare the socioeconomic before the Covid-19 which is in 2018 and after the Covid-19 which is this study is conducted on 2020. Moreover, the analysis used is in this study is descriptive analysis which is using mean. The result of this study is the existence of a map using the GIS method by explaining 4 important indicators in socioeconomic wellbeing, namely age structure, education, size of working family and income.

Table 3. Sample size

NO.	Village	No. of houses (families)	Sampling size 2018	Sampling size 2020
1.	Kampung Simpang Penyabong	288	65	65
2.	Kampung Parit Puteri Menangis	220	52	52
3.	Kampung Sungai Lurus	275	65	65
		Total	182	182

Note: Total number of houses (families) overall of study in 2018 is 1293, and the total sample size is 302. Sampling target is based on sampling error of 5% using the formula: n=N/1+N (e)2 ; n-sample size; N-population (number of houses), e-sampling error (e=0.05). but for this research only focusing on three village and using total 182 sampling.

5. Findings and discussion

5.1 age structure

As indicated in Table 4, The populations aged between 15 and 60 years which is economically active is decreasing in all three village which below 60% from 2018 which above 60%. Kampung Kampung Parit Puteri Menangis has the lowest active population which is 57.8%. The decreasing of active population in village can related to youth migrate to urban area do to dismissed in workplace and less job opportunities at rural area during Covid-19. Furthermore, The average age in every village have been increase which is the highest average age is 38 years old in Kampung Parit Menagis. Other findings shows that per cent of population in all villages are that categorized as economically active population are potentially have good ability to contribute for economic growth of the villages in term of income level and type of occupation after the Covid-19 dismissed.

Table 4. Age structure

Village	2018 (before Covid-19)		2020(after Covid-19)	
	% Economically Active Population (15-60)	Average Age	% Economically Active Population (15-60)	Average Age
Kampung Simpang Penyabong	62.5	32.92	58.0	35.09
Kampung Parit Puteri Menangis	62.3	36.29	57.8	38.68
Kampung Sungai Lurus	62.7	35.32	58.2	37.65

5.2 Distribution of education level
As indicated in Table 5, most of the population in all the three villages have formal education that begins with pre-schooling until higher educationwhich is above 80% of the population. However, in 2020 due to Covid-19 pandemic which require online learning, there are increasing number of populations with no education. Most of the cases did not send their child to pre-schooling even the age are 6 years old due to online learning. Online learning needs of internet and gadget, there are some of the villagers do not afford to buy the needs due unstable source of income during Covid-19.

Table 5. Distribution of education by village

Village	2018 (before Covid-19)		2020 (after Covid-19)	
	%Total with no education	%Total with education	%Total with no education	%Total with education
Kampung Simpang Penyabong	14.0	86.0	16.0	84.0
Kampung Parit Puteri Menangis	8.8	91.2	10.8	89.2
Kampung Sungai Lurus	13.0	87.0	11.0	85.0

5.3 Size of working family
In 2018, the size of working family members in three villages which is Kampung Simpang Penyabong, kampung Parit Puteri Menagis and Kampung Sungai Lurus is average two members. Majority of head of household are working and was supported by other family members especially their children. However, in 2020 the average size of working family of every village is only one. This shown that the pandemic Covid-19 have impact the community income and less job opportunities the causes of size of working family decreasing.

Table 6. Size of working family

Village	2018 (before Covid-19)	2020 (after Covid-19)
	Average size of working family	Average size of working family
Kampung Simpang Penyabong	2.00	1.77
Kampung Parit Puteri Menangis	2.12	1.87
Kampung Sungai Lurus	2.06	1.82

5.4 Distributions of income

Total household income is one of the dependent variables to measure the economic well-being performance of the villages studied [14][21]. Table 7 shows the distribution of household income by village in 2018 and 2020. Kampung Parit Puteri Menangis is noted with the highest performance in terms of total household income (RM 4,515) as most villagers involved in agricultural sector especially pineapple activity which has higher prices in market and several others works in services and business sector which contributes to the level of overall income. However, there are decreasing of household income due to issues of transportation for agricultural product to the market due to restriction of movement order. Moreover, Kampung Simpang Penyabong and Kampung Sungai Lurus also having a decreasing of income which is from RM4,515 to RM4,144 and RM3,479 to RM3,192. All the three-village income area categorize under B40 lower income group which is household income is below RM4,850 per month.

Table 7. *Distributions of income*

Village	2018 (before Covid-19)	2020 (after Covid-19)
	Average household income	Average household income
Kampung Simpang Penyabong	2,424	2,225
Kampung Parit Puteri Menangis	4,515	4,144
Kampung Sungai Lurus	3,479	3,192

5.5 Impact of Covid-19 towards socioeconomic wellbeing in Johor
Figure 2 shows the impact of Covid-19 towards socioeconomic wellbeing in Johor. GIS mapping is used to generate impact of Covid-19 using four indicators which is is age structure, education, size of working family and income. The result shown the study area receive negative impact that decreasing the active population, decreasing the number of populations with education, decreasing the size of working family and decreasing the household income during pandemic of Covid-19.
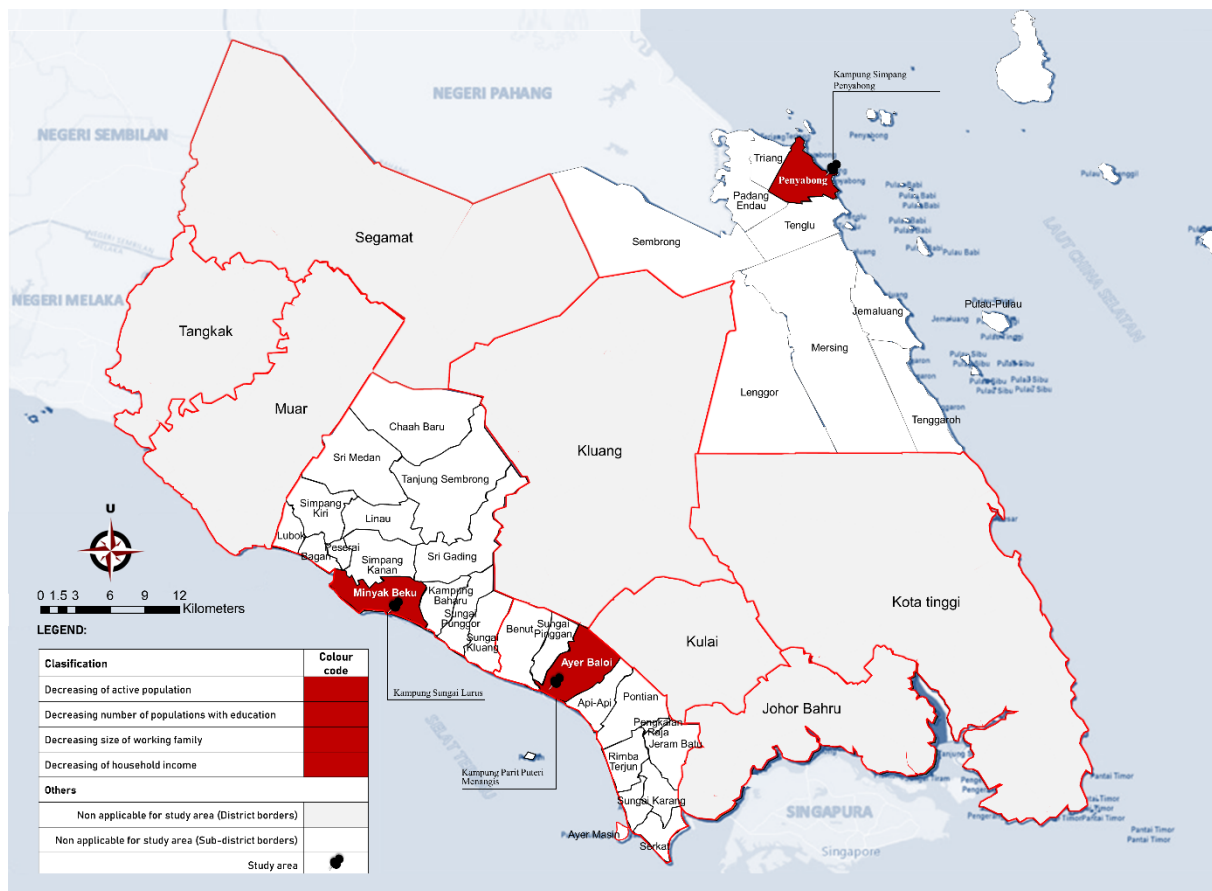
Figure 2. Impact of Covid-19 towards socioeconomic wellbeing in Johor

6. Conclusions

The Covid-19 pandemic, which impacts behaviour change and economic activity, has led to an increase in the number of poverties, both nationally and in rural-urban areas. Four indicators are used to measure the change of socioeconomic rural community in before Covid-19 which is year 2018 and after the Covid-19 which is year of 2020. The indicators are involved age structure, education, size of working family and income that shows the socioeconomic wellbeing of rural community. Moreoverogramme is also available in the form of a pre-employment card, supplemented by short-term income in the form of tax breaks, lower interest rate loans, payment delays, and capital incentives.

Acknowledgement

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