The Real-Time Situation of Covid-19 Pandemic between MCO, CMCO and RMCO Using Geographic Information System (GIS): Study Case in Malaysia

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***Abstract*: Globally, the most infectious disease was the new term of coronavirus disease by COVID-19 in all countries from the end of the year in 2019 until August 2020. Until now, COVID-19 not yet to solve and no meet vaccine. At the end of December 2019, there was an international cluster of cases involving Novel Coronavirus in Wuhan, China. The worldwide number of active cases and deaths is rising, especially in the top countries such as the United States (U.S), Brazil, and India. In Malaysia, these cases of COVID-19 have significantly decreased the number of active infections and deaths from May to August 2020. COVID-19 has a significant effect on human life, socio-economic growth, and public relation. It is focused at older age groups and individuals with various health problem conditions such as cancer, respiratory problems, diabetes, hypertension, and heart-related issues. Therefore, the World Health Organization (WHO) has formally declared COVID-19 as an international critical case. The research uses GIS software to analyse COVID-19's spatial-temporal of real time situation between Movement Control Order (MCO) in Malaysia. COVID-19 information obtained between on 27 February until August 2020 and analysed using ArcGIS software 10.5 and SPSS for statistical analysis. Real time situation conducted to show distribution and changing patterns of the COVID-19 pandemic within MCO implemented. As a result, Kuala Lumpur was the most affected state in Malaysia as of 19 August 2020, followed by Selangor, Negeri Sembilan, and Johor. Regardless of the infection chain ratio, the favourable cases in each Malaysia's affected state are rising every day. The Malaysian Government attempted to split the infection chain ratio affected by COVID-19 via the lockdown definition. Geographic Information Systems (GIS) technologies have played a significant role in spatial information, spatial tracking of confirmed cases, active case, death, and discharge cases, and real time for predicting the magnitude of the spread. Monitoring, evaluating, and planning using geospatial analysis are essential for controlling COVID-19 within the country especially in the developing countries.**

***Keywords:* COVID-19, Movement Control Order (MCO), GIS, Lockdown, World Health Organization (WHO)**

I. INTRODUCTION

A new outbreak of the recent so-called Coronavirus Disease (COVID-19) was the latest threat to global health attention. In December 2019, Covid-19 was approved. On January 2020 the COVID-19, a new and possible corona viral disease that has begun in Wuhan City, Hubei province's capital city in China, and has rapidly spread out in China and beyond, is a response and an outbreak of an emerging disease (Zhu et al., 2019; Jiang et al., 2020; Ma et al., 2020). Yang et al., 2020 mentioned that in February 2020, the COVID 19 situation reports 77 780 cases reported in China, released by the World Health Organization (WHO). The WHO declared the outbreak of the COVID-19 as a pandemic on 12 March 2020.

The COVID-19 space distribution is high, with overall fatalities of around 3.18 percent and regeneration rates of 63.92 percent (WHO, 2020). As of 19 August 2020, the United States is currently facing the COVID-19 wave of more than 5,482,416 cases (WHO, 2020). Since COVID-19 exists, the virus has quickly spread to many countries throughout China and now, including Brazil, Italy, and India. As a result, COVID-19 has now been recognized worldwide, although in the USA, Brazil, India, Russia and others, the most high-level cases are registered. In Malaysia, the update latest cases on 19 August 2020 reported 9,235 confirmed cases, 8,925 discharged patients, 185 patients in the treatment condition, and 125 deaths (MOH, 2020). The confirmed cases are divided and categorized into six major groups of clusters; Tabligh (3,375 cases), Pedas (249 cases), Church (191 cases), Case 26 (121 cases), Wedding (96 cases) and RK family from Italy (65 cases). All these clusters contribute to the increase of COVID-19 cases in Malaysia. However, another clusters also have many confirmed cases to determine high and low risks of COVID-19. As we know, COVID-19 is a respiratory infection transmitted by animals or from an infected individual to another by zoonotic (Li et al., 2020; Mackenzie & Smith, 2020). It means that the contact mode involves the air gon infected person sneezing or coughing, touching surfaces or objects (e.g., doorknobs or tables) susceptible to the virus. When someone speaks, it can spread by breathing within 1 meter of a person with COVID-19 infection (K et al., 2020; Kumar et al., 2020). He or she was then using the same hand

to touch his mouth, nose, and eyes, without washing his hands with alcohol-based soap sanitizing under running water. No vaccine and no specific antivirus medicine to prevent or treat COVID-19, but some traditional methods or remedies may provide comfort.

Several studies performed a temporal analysis of COVID-19 at several periods, discuss mortality, population distribution, and disease patients using GIS. This study was conducted to relate the demography and status of patients who died, such as type of clusters, chronic disease, and transmission. GIS application is used to show the trend and distribution analysis of COVID-19 in India. The outcome is high rate confirmed cases and death. No specific antibiotics or treatment options are available for COVID-19 (Murugesan et al., 2020). Therefore, GIS is the most effective method for performing spatial analysis of COVID 19 contaminated areas (Franch-Pardo et al., 2020). The most effective method in performing spatial analyzes in the COVID 19 contaminated sites is the geographical information systems (GIS). This article will help society and researchers map and categorize the GIS services into high, medium, and low-risk zones spatially. This scenario is similar to Ghana's country using GIS to identify high-low risks area and predict the COVID-19 distribution (Mo et al., 2020; Sarfo & Karuppannan, 2020). The report will also show a wise analysis of changes in COVID-19 cases from February until the end of June, including positive or confirmed cases, active cases, and retrieved cases and death. GIS can be a vital tool for educating, preventing, and treating the deadly disease. The severity of the disease in each infected area and its intensity of propagation can be identified by analyzing spatial information, which ultimately contributes to targeting the hotspots.

This paper aims to spatially map affected areas to demonstrate an evolution of COVID-19 to take preventive measures and demonstrate functional recovery from this infectious disease to states and regions. Therefore, this study aims to detect space-time patterns of COVID-19 by using spatiotemporal methodologies, specifically descriptive statistical tests and ArcGIS 10.5 spatial autocorrelation indexes. In Malaysia, the focus region of the analysis also influenced space-time trends at the state-district level. In China, this study also established the temporal, geographic trends of the COVID-19 at towns, provinces, and countries and analyzed the infection's evolving trends (Tang et al., 2020).

Statement of The Problem

COVID-19 is an epidemic and a significant threat to public health and economic. About 22,151,281 cases, 781,123 deaths, and 15,280,195 recovered worldwide were confirmed by 19 August 2020. Global expansion was rapid, with at least one case now recorded by 205 countries. COVID-19 is the largest and most dangerous disease cluster observed in the world in all outbreaks. COVID-19 is becoming a global crisis, in which the planet has collapsed, and death from this epidemic is gravitational. With almost 150 countries now, the worldwide spread has been substantial, and at least one case has been identified. Although the disease continues to spread despite aggressive containment efforts, the number of sufferers is growing.

WHO (2020) reported Americas has recorded the largest number of cases (11,887,224) followed by Europe (3,841,452), Southeast Asia (3,308,987), Eastern Mediterranean (1,776,899), Africa (966,352) and Western Pacific (432,214).

In Malaysia context, there have many of clusters to increase COVID-19. Nowadays, for all the leading nations, politics, and religions, this issue is becoming a nightmare of daring difficulties. Consequently, this study aims to assess COVID-19 spatial distribution and descriptive statistics (age, sex, clusters, population density, chronic diseases, and transmissions). This study refers to Likassa (2020) that expressed using descriptive statistics to evaluate the impacts of seven variables such as age, sex, blood type, previous healthy history, transmission types, and location.

II. METHODOLOGY

1. Study area and period

This research was carried out in Malaysia and located in Southeast Asia. Malaysia's total land area is 329,758 km^2: 131,598 km^2 in Peninsular Malaysia and 198,160 km^2 in Sabah and Sarawak. Temperatures and precipitation vary according to elevation and sea proximity. The average annual temperatures ranged from 23^{o}C to 34^{o}C, however, appeared to be consistent throughout the year. Rainfall is heavy from April to October, with annual Southwestern monsoons and October to February with northeastern monsoons. The total annual precipitation in East Malaysia varies from 1,300 to 4,700 mm and 1,400 to 4,000 mm in the Peninsula. The moisture level is also high; the average moisture ranges between 80 and 90%. Malaysia is a big concern that the spread of the virus in March until August 2020. It takes all states and districts in Malaysia. Besides, each state reports the number of confirmed cases recoveries and deaths of the COVID-19 pandemic. The monitoring period covers details from the virus outbreak until 18 August 2020. The 12 leading public hospitals, five public laboratories, and 1 Institute for Medical Research (IMR) were diagnosed and confirmed cases (Figure 1). The change in parameters will lead to spatial and temporal pattern differences in the majority of areas.

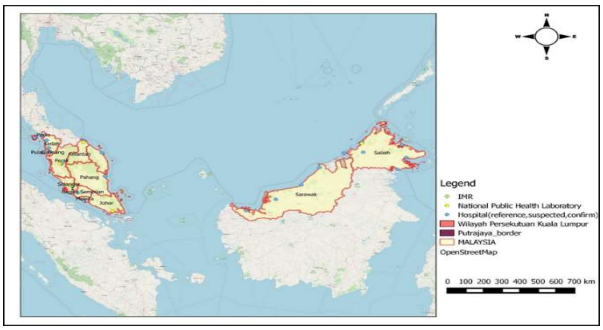

Figure 1: The location of study cases, Hospital, IMR and Laboratory in Malaysia

2. Source of the dataset

The data included in this study includes all information reported by the World Health Organization (WHO) from the start of 27 February 2020 until August 2020. This report also considers all continents, countries, and boundaries. In the present report, the COVID-19 verified cases and deaths due to COVID-19 shall be considered along with the transmission method. Besides, in Malaysia, the specific details of the information collected from the Ministry of Health (MOH) are related to COVID-19 patients such as age, sex, type of clusters, and death date. The MOH directly collects these cases and reports every day on the local government and the media website. COVID-19's high death rate is more linked to the age group over 50, male and chronic diseases becoming more vulnerable. Patients of COVID-19 aged more are more vulnerable to death than any age group relative to the other age group. The relationship of Movement Control Order (MCO), Conditional Movement Control order (CMCO) and Recovery Movement Control Order (RMCO) situation in Malaysia were discussed in this paper.

3. Analysis Methods

During the analytic process, the original data was calculated using MS Excel 2013 (Microsoft) and the Social Science Statistics Package (SPSS). The data collected were translated into GIS by ArcGIS version 10.5. The gradient of five colors to determine high and low rate cases using from red to green.

IV RESULTS AND DISCUSSION

The dataset obtained from 10 June until 19 August 2020 for the current study. This problem is because of the start case of COVID-19 in Malaysia when it start MCO, CMCO and RMCO. The actual number cases until 19 August 2020, as shown in Table 1 and Table 2. Table 1 described the confirmed cases are high risks in June and a slight decrease in July and August. This scenario shows that Kuala Lumpur, Selangor, Johor, and Sarawak reported the most risks of COVID-19 in Malaysia because these states have populated areas. On 12 July 2020, Selangor still indicated 64 or 65% of active cases in Malaysia. However, the latest number on 19 August 2020 indicated that Kedah was the highest active case in Malaysia, as shown in Table 2.

Table 1: The number of cases from 27 February until 22 June 2020 and number active cases by state

State	27/02/2020 - 31/03/2020	1/4/2020 - 30/04/2020	1/5/2020 - 31/5/2020	1/06/2020 - 22/6/2020	Number active cases (12/07/2020)
Selangor	704	727	447	115	64
Johor	349	314	12	14	7
WP Kuala Lumpur	430	802	796	402	7
Perlis	12	6	0	0	0
Kedah	77	18	1	0	1
Penang	94	27	0	0	0
Negeri Sembilan	181	332	345	157	1
Pahang	102	90	67	4	0
Sabah	206	109	31	20	6
Sarawak	156	351	45	18	9
WP Labuan	10	6	0	1	0
Putrajaya	26	55	16	0	1
Kelantan	131	24	1	1	0
Terengganu	47	63	1	0	0
Melaka	52	146	21	37	2
Perak	189	64	3	2	0
Total	2766	3134	1786	771	98

(Source: Ministry of Health, 2020)

Table 2 shows the number of active cases by RMCO status from 10 June until August 2020 in Malaysia. The statistics summary indicated that Kedah was most state area has influenced and contributed to COVID-19 cases. It followed by Sabah, Penang, Kuala Lumpur and Perlis. The rest of the state was below 10 active cases. We can see that only four states in Malaysia still no active cases such as Negeri Sembilan, Pahang, Kelantan and Terengganu. The total of active cases in Malaysia was very low compared to other countries in Southeast Asia.

Table 2: The number of active cases by RMCO status from 10 June until August 2020

State	Number active cases
Kuala Lumpur	12
Selangor	2
Negeri Sembilan	0
Johor	8
Sarawak	3
Sabah	15
Pahang	0
Perak	5
Melaka	1
Kedah	71
Kelantan	0
Penang	13
Terengganu	0
Putrajaya	1
Perlis	11
Labuan	1
Total	143

(Source: Ministry of Health, 2020)

Identifying the Distribution Patterns of Confirmed, Recovered and Deaths cases between MCO, CMCO and RMCO

As a 19 August 2020, according to Figure 2, the three different situations of cases starting on MCO, CMCO and RMCO. The MOH data shows that the confirmed cases in the MCO situation were higher than CMCO and RMCO. For the recovered cases also increase during MCO. We can summarize that for all situations were declined slowly and less of deaths cases in Malaysia.

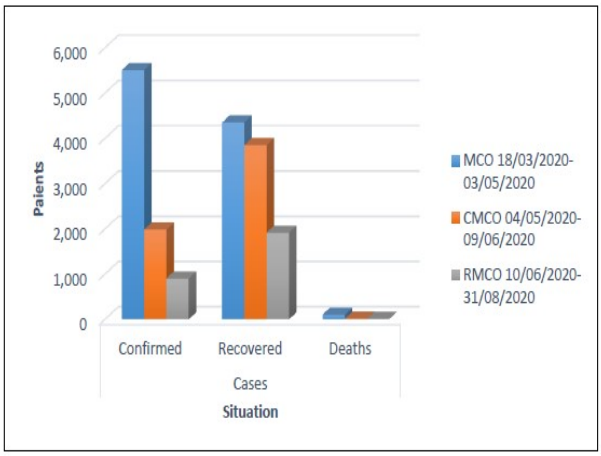

Figure 2: The situation of cases Pandemic COVID-19 within Patients

Based on Table 3, the confirmed, recovered and death cases are 297, 1171 and 4 cases, respectively. The highest confirmed cases are 85 or 28.6% on 14 June 2020 and the fewer cases on 10 and 30 June 2020. On 16 June 2020, 333 cases of recovered patients were discharged from the hospital. The data obtained on 10, 12, 13 and 14 June 2020 had a died from COVID-19 disease.

Table 3: The Statistics of Confirmed, Recovered and deaths from 10 June until 30 June 2020

Date	Confirmed	Recovered	Deaths	Date	Confirmed	Recovered	Deaths
10/6/2020	2	39	1	21/6/2020	16	10	0
11/6/2020	31	51	0	22/6/2020	15	21	0
12/6/2020	33	103	1	23/6/2020	3	9	0
13/6/2020	43	143	1	24/6/2020	6	40	0
14/6/2020	85	35	1	25/6/2020	4	45	0
15/6/2020	41	54	0	26/6/2020	6	23	0
16/6/2020	11	333	0	27/6/2020	10	14	0
17/6/2020	10	140	0	28/6/2020	18	10	0
18/6/2020	14	127	0	29/6/2020	3	16	0
19/6/2020	6	70	0	30/6/2020	2	20	0
20/6/2020	21	76	0	Total	297	1171	4

(Source: Ministry of Health Malaysia)

In July 2020, the total of confirmed patients on COVID-19 are 98 peoples, 184 recovered and only four died in that month. 39 confirmed cases were directly on 28 July 2020. The highest recovered on 2 July 2020 about 62 patients discharged from hospital.

Table 4: The Statistics of Confirmed, Recovered and deaths from 1 July until 31 July 2020

Date	Confirmed	Recovered	Deaths	Date	Confirmed	Recovered	Deaths
1/7/2020	1	21	0	17/7/2020	18	3	0
2/7/2020	3	62	0	18/7/2020	9	5	0
3/7/2020	5	9	0	19/7/2020	15	7	1
4/7/2020	10	15	0	20/7/2020	21	2	0
5/7/2020	5	4	0	21/7/2020	15	7	0
6/7/2020	5	11	0	22/7/2020	16	4	0
7/7/2020	6	5	0	23/7/2020	9	8	0
8/7/2020	3	5	0	24/7/2020	21	3	0
9/7/2020	6	13	0	25/7/2020	23	17	0
10/7/2020	13	12	0	26/7/2020	13	6	1
11/7/2020	8	4	1	27/7/2020	7	1	0
12/7/2020	14	4	0	28/7/2020	39	6	0
13/7/2020	7	1	0	29/7/2020	13	5	0
14/7/2020	4	4	0	30/7/2020	8	5	0
15/7/2020	5	2	0	31/7/2020	12	27	1
16/7/2020	3	12	0	Total	98	184	4

Besides that, we can see the cases in August 2020; the statistic cases were 259 which is higher for confirmed cases in the RMCO situation. The increasing trend started from 11 until 15 August and declined slowly. It was a very harmful and dangerous case because many clusters were detected. The total of recovered cases is 281 and no deaths cases.

Table 5: The Statistics of Confirmed, Recovered and deaths from 1 August until 19 August 2020

Date	Confirmed	Recovered	Deaths
1/8/2020	9	3	0
2/8/2020	14	17	0
3/8/2020	2	4	0
4/8/2020	1	16	0
5/8/2020	21	18	0
6/8/2020	15	11	0
7/8/2020	25	15	0
8/8/2020	7	47	0
9/8/2020	13	9	0
10/8/2020	11	19	0
11/8/2020	9	6	0
12/8/2020	11	8	0
13/8/2020	15	4	0
14/8/2020	20	7	0
15/8/2020	26	3	0
16/8/2020	25	28	0
17/8/2020	12	17	0
18/8/2020	7	26	0
19/8/2020	16	23	0
Total	259	281	0

The descriptive statistical analysis in table 6 shows an average of 546 total COVID-19 cases, eight deaths, 535 recoveries, and six active cases per day as per the present scenario. This growth rate in total COVID 19 cases is a dangerous disease to Malaysia's citizens and its economy and social human being. This data is a simple average for the definition situation of pandemic COVID-19.

Table 6: Descriptive statistics of COVID-19 pandemic in Malaysia by cases, deaths, recoveries and active cases

Items	Total cases	Deaths	Recoveries	Active cases
State	16	16	16	16
Mean	545.88	7.63	535.25	5.81
Median	258.00	5.50	252.00	1.00
Mode	258	1	96[a]	0
Std. Deviation	729.080	7.890	719.825	14.068
Variance	531558.250	62.250	518148.467	197.896
Skewness	1.955	1.026	1.972	3.628
Std. Error of Skewness	.564	.564	.564	.564
Kurtosis	3.063	-.337	3.127	13.783
Std. Error of Kurtosis	1.091	1.091	1.091	1.091
Minimum	17	0	16	0
Maximum	2447	24	2422	57
Sum	8734	122	8564	93

In this situation, doctors play a crucial role and frontliners during the COVID-19 pandemic by treating infected patients. The result shows that a high recovery rate and a low death rate in Malaysia indicate better medical facilities and hospitals with a suitable patient and doctor ratio. Malaysian Government took action when recall retired professional doctors from local and international to serve and combat the COVID-19 pandemic. The low rate of active cases in Malaysia contributes well to human development and economic recovery.

Figure 3 shows that the summary of situation cases from 10 June until 19 August 2020 was recorded before RMCO ended on 31 August 2020. The recovered patients in June was the higher discharged from hospital compared by July and August.

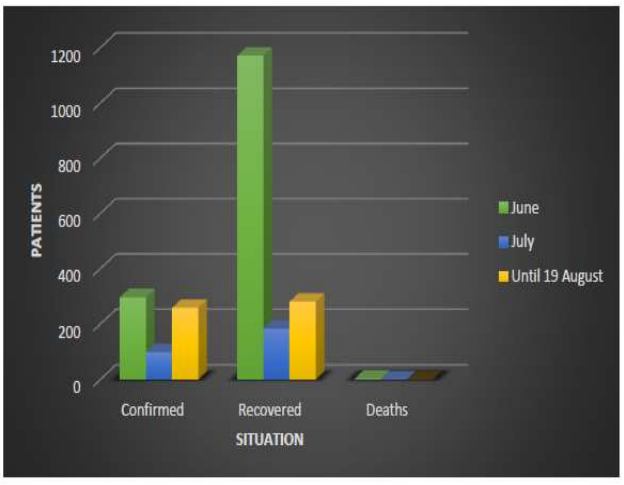

Figure 3: The situation cases on patients by RMCO (June – 19 August 2020)

Many clusters were recorded in Malaysia and about 82 clusters affected to increase the pandemic COVID-19. 20 of them still active cases and 62 cases were ended. The summary of cluster cases shown in Table 7. The higher clusters from Bukit Jalil (653 cases) and the lowest clusters are divided into three areas; Meranti, Al-Khobar and Kuching Construction Company. However, Tabligh clusters were the highest record infection of COVID-19 and confirmed patients.

Table 7: The type of clusters, number of cases and status in Malaysia

No	Cluster	Cases	Status	No	Cluster	Cases	Status
1	Bukit Jalil	653	Active	42	Bandar Baru Bangi	31	Ended
2	Tawar	55	Active	43	Tabligh Makasar Johor	27	Ended
3	Sivagangga	45	Active	44	Kampung Baru	24	Ended
4	Sentosa	31	Active	45	Muar Hospital	24	Ended
5	Kluang Old folks home	18	Active	46	Palace	22	Ended
6	Sala	11	Active	47	Tabligh New Delhi	22	Ended
7	Bukit Tiram	10	Active	48	KL Hospital	19	Ended
8	Kuching engineering	8	Active	49	Sg Buloh medics	18	Ended
9	Stutong	7	Active	50	Setia Alam const. site	15	Ended
10	Mambong	7	Active	51	Pengerang	15	Ended
11	Kurau	5	Active	52	Bukit Bintang	11	Ended
12	Alam	4	Active	53	Tabligh Makasar Sabah	9	Ended
13	Satok	4	Active	54	Kuala Selangor old folks home	8	Ended
14	Elsa	4	Active	55	Kidurong	8	Ended
15	Muda	3	Active	56	Cheras flat	8	Ended
16	Melbourne	3	Active	57	Bera Plantation	7	Ended
17	Sepang workers quarter	3	Active	58	Novgorod	6	Ended
18	Meranti	2	Active	59	Tahfiz Lanchang	6	Ended
19	Al Khobar	2	Active	60	Maran timber company	6	Ended
20	Kuching const. company	2	Active	61	Tabligh Pakistan	5	Ended
21	Tabligh	3,375	Ended	62	Tuaran death at home	5	Ended
22	Pedas	326	Ended	63	Lanjut	5	Ended
23	Pesantren students	238	Ended	64	Gombak	5	Ended
24	Church	191	Ended	65	Benus	5	Ended
25	Uda Executives	121	Ended	66	Kajang Market	5	Ended
26	Sendayan	112	Ended	67	Hyde Park	4	Ended
27	Chow Kit Market	90	Ended	68	KL cleaners	4	Ended
28	Pudu	80	Ended	69	Madarasah Solok Duku	4	Ended
29	KL construction site 2	73	Ended	70	Ramned	3	Ended
30	Sepang IDD	72	Ended	71	Pitakwa	3	Ended
31	Semenyih IDD	66	Ended	72	Jupiter	3	Ended
32	Kuching medical staff	65	Ended	73	Kuching medical centre	3	Ended
33	Italy/RK family	65	Ended	74	Hulu Langat condo	3	Ended
34	Engineering	65	Ended	75	Kuching const. site	3	Ended
35	Selayang Baru	52	Ended	76	Sabah IDD	3	Ended
36	Bali	43	Ended	77	Japanese	3	Ended
37	Cheras security guard	39	Ended	78	KL Restaurant	2	Ended
38	Senior citizens	36	Ended	79	Shirala	2	Ended
39	Sabah medic	35	Ended	80	Kuching Jetty	2	Ended
40	Cleaning service company	34	Ended	81	Maran const. company	2	Ended
41	KL construction site	31	Ended	82	Putrajaya IDD	2	Ended

The COVID-19 pandemic scenario using the spatial map, as shown in figure 4 based on location according to cluster types in Malaysia was recorded. We can conclude that Kedah, Lembah Klang and Sarawak have many infections of COVID-19. The reallocation is very closest to each other.

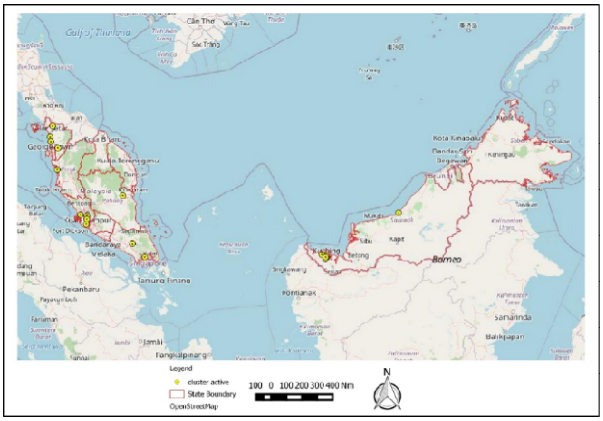

Figure 4: The distribution of active cases by type of clusters in Malaysia

COVID-19 pandemic was conducted using SPSS to assess the death's status on age, gender, chronic disease, clusters, and transmission. The results of Table 8 have reflected more than 60 years pass away from this infection. In this case, 93 patients from male, and most of them had a chronic disease after post mortem medical checkup. Tabligh from Masjid Sri Petaling has 19 died, followed by RK family from Italy and Church clusters from Kuching. However, other clusters were recorded highly died, about 78%. The majority of the transmission of COVID-19 is due to local transmission followed by undisclosed, imported, and under investigation.

Table 8: Descriptive statistics on age, gender, chronic disease, clusters and transmission

Items		Frequency	Percent
Age	20-39	10	8.2
	40-59	27	22.1
	60 and above	84	68.9
	Not Stated	1	.8
	Total	122	100.0
Gender	Male	93	76.2
	Female	29	23.8
	Total	122	100.0
Chronic Disease	Yes	83	68
	No	39	32
	Total	122	100.0
Cluster	Tabligh	19	15.6
	Church	3	2.5
	RK Family/Italy	5	4.1
	Others	95	77.9
	Total	122	100.0
Transmission	Local	65	54.1
	Undisclosed	51	41.8
	Imported	4	3.3
	Under Investigation	1	0.8
	Total	122	100.0

The summary of Table 9 reported the significant signs and symptoms obtained from clinical studies and the characteristics of COVID-19. We can note that significant signs and symptoms are a reasonable condition such as fever, coughs, and breathing problems. Other symptoms such as diabetes, hypertension, heart disease, kidney disease, cancer, gout, stroke, and low immunity in the body are the chronic symptoms of disease patients of COVID-19. In this situation, the most risks are the chronic diseases identified.

Table 9: The summary of disease patients of COVID-19

Suffered	Frequency	Percent
Normal symptom	39	32.0
Diabetes	4	3.3
Hypertension	8	6.6
Heart disease	6	4.9
Kidney Disease	1	.8
Diabetes,hypertension,heart disease,kidney disease	3	2.5
Diabetes,kidney	1	.8
Diabetes,hypertension,kidney disease	9	7.4
diabetes,hypertension,liver cancer	1	.8
diabetes,liver cancer	1	.8
hypertension,heart disease	4	3.3
cancer	2	1.6
cancer,hypertension	2	1.6
diabetes,hypertension,stroke	1	.8
diabetes,hypertension,heart disease,stroke	1	.8
diabetes,hypertension	11	9.0
hypertension,stroke	1	.8
Severe Acute Respiratory Infection (SARI)	1	.8
Diabetes, hypertension dan dementia.	2	1.6
heart disease,hypertension,kidney disease	1	.8
heart,kidney disease	1	.8
diabetes,hypertension,heart disease	4	3.3
diabetes,hypertension,gout	1	.8
autoimmune disease and other chronic diseases	1	.8
thyroid	1	.8
chronic illness and had low immunity	1	.8
diabetes, high blood pressure and kidney disease	3	2.5
high blood pressure	1	.8
chronic illness	5	4.1
hypertension, autoimmune and thyroid	2	1.6
diabetes,heart disease	1	.8
hypertension,gout	1	.8
hypertension and chronic respiratory disease	1	.8
Total	122	100.0

Current status

The world COVID-19 cases mentioned that 22,563,583 confirmed cases and total deaths increase by 796,657 cases. COVID-19 Pandemic cases in Malaysia are well over 9,235 as of 19 August 2020. This pandemic confirms about 1.35% of deaths and 96.64% discharged from the hospital. The first tragedy reported by Malaysia in Kuala Lumpur and Selangor from China tourists. In March, the worldwide number of recorded cases increased, primarily due to individuals traveling to the affected areas. The total number of cases confirmed recently rapidly between March and April. In March, the confirmed cases are 2,766 cases and increase to 3,134 cases in April. Kuala Lumpur and Johor followed Selangor's most active cases. However, these cases significantly decreased in May, June, July and August after the the government release their enforcement to RMCO. RMCO was done to recover economic and public health.

V CONCLUSIONS

This study used statistical data spatially and time analyses in Malaysia to detect COVID-19 spatiotemporal patterns. The spatial data patterns of the scenario RMCO starts from 10 June until 31 August 2020. Geospatial technologies are a tool to illustrate the trend distribution and pattern of COVID-19 infection. The evaluation of the change in the number of cases with different states and districts is performed. Selangor and Kuala Lumpur were the profoundly affected state. As a 12 July 2020, more than 200 cases in high hotspot dangerous involve 8 districts; Kuala Lumpur, Johor Bahru, Kuching, Gombak, Petaling, Ulu Langat, Rembau and Kluang. IDW was statistical for interpolation maps to help the disease spread rapidly compared to the initial months. As per the spatial, temporal change distribution of COVID-19 analysis, it will be helpful to take the government's necessary steps to monitor and predict the potential distribution of COVID-19 infection in the most affected areas. The Standard Operation Procedure (SOP) was announced and implemented by Government Malaysia to prevent and combat COVID-19 Pandemic. The enforcement by the National Security Council of Malaysia (Ministry of Home Affairs) about MCO, CMCO, and RMCO is the best control for COVID-19. It is possible to prevent the ability to diagnose and control the population's movement and the pandemic's outbreak. The advice of WHO and MOH must be followed to protect and stay healthy from the spread of COVID-19 pandemic.

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