

Spreading the COVID-19 and COVID 19 Hotspot Regions: A Comparative Analysis of the International Relationship and Globalization Impact on Infective and Mortality Status in the World

Taniya Roy¹, Mintu Jana², Srikrishna Paul³

¹State Aided College Teacher (SACT), Department of Geography (UG&PG), Bajkul Milani Mahavidyalaya (VU), West Bengal
Email: [taniya.roy0801\[at\]gmail.com](mailto:taniya.roy0801[at]gmail.com)

²State Aided College Teacher (SACT), Department of Geography (UG&PG), Bajkul Milani Mahavidyalaya (VU), West Bengal
Email Id- [janamintu6\[at\]gmail.com](mailto:janamintu6[at]gmail.com)

³State Aided College Teacher (SACT), Department of Geography (UG), Egra Sarada Sashi Bhusan College (VU), West Bengal
Email: [paulsrikrishna\[at\]gmail.com](mailto:paulsrikrishna[at]gmail.com)

Abstract: *Now the world is going towards a big pandemic situation due to COVID 19 virus. These viruses are a journey from the hotspot region and spread towards surrounded region through human migration and a good relationship with China. COVID 19 create a big crisis in the scientific community and various issues such as the mechanisms driving the spread of the virus, its socio-economic and environmental impacts, and necessary adaptation and recovery plans and policies. With the high concentration of population and their economic activities in countries, they are often hotspots of COVID 19 infections. Accordingly, many researchers are trying to explore the dynamics of the pandemic in populous countries to understand COVID 19 on their country's economy. The main objective of this paper is mortality and infective status and their spreading causes through the neglected behavior in the world. Another showing the international relationship and political bureaucratic war with China and the United States of America. A good discussion in this paper is graphically data assessment that is collected from World Health Organisation (WHO). Discussion of the COVID 19 hotspot region and its spreading and how to break down the different countries' economies. A correlation between the different countries infective and mortality status through the access of international relationship, globalization and neglect behavior the COVID 19 Issues.*

Keywords: COVID 19 Hotspot region, COVID 19 spreading, International Relationship, Infective and Mortality status, Prevention and Management

1. Introduction

Coronavirus (COVID 19) was identified in late 2019 in Wuhan, Hubei Province, China. It becomes a fully-fledged pandemic that is rapidly swept through many countries. Many countries in the world continue to struggle with the COVID 19 crisis. In this globalization period, many countries are rapidly affected by the COVID 19. Coronavirus has highly impacted our lives and has created an unprecedented scenario as people around the world conducted lockdown. Government institutions and private institutions are continuously closed and stagnant transportation. All sectors are closed and people's lives are closed in their home and their rent house. Many countries are ordering for travel restriction has significantly affected people mobility behavior. For example, around 52% reduction in activities has been observed in the transit stations of Canada during COVID – 19 (i.e., mid-March to the end of April) compared to the pre-pandemic period (Google, 2020). Much of the changes in travel demand have been attributed to individuals' adjustments in their daily travel activities such as replacing out-of-home activities with in-home activities. For instance, around 50% of Canadians are working from home due to COVID – 19 (Leger, 2020). All shopping is conducting online for avoiding travel by the people. In the case of long-distance travel such as international travel, plans are the closure of borders. This

paper focuses on infection and mortality status how to increases and changing the ratio of a different region in the world. The novel coronavirus disease 2019 (COVID 19) is an emerging infectious and mortality that has been declared a pandemic by the World Health Organisation on March 11, 2020. This COVID 19 pandemic has spread over the world more than 210 Countries globally and infected almost 5.5 million people and about 0.35 million deaths worldwide as of 15 May 2020 and continues to increase their infective and mortality ratio. The COVID 19 attack the respiratory syndrome coronavirus2 (SARS-CoV-2), which was initially reported as novel pneumonia of unknown etiology in the human body of attacking people. A huge movement of people from and between the Asian region and other parts of the world increased COVID 19 geographically spreading and contagion during an outbreak of the human body. SO, the COVID 19 infection was epidemic, and that spread overwhelming and has required epidemiological principal for a pandemic. Experience this COVID 19 journey from China and highly effective on Italy and the United States of America during the first month of the Pandemic situation. We have known that during the globalization period many developed and developing countries are strong relationships with the people flow. And people contact with the COVID 19 infected person in the COVID 19 hotpot region, then those are coming their country then COVID 19 spread in the state. We have known that climate is a vital role play for

Volume 10 Issue 2, February 2021

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

virological health. Which countries are a good relationship with China those countries and their global urban area are in direct contact with the COVID 19 from the hotspot region? After China's second COVID 19 hotspot region that is highly connected and people flow more towards China migrant for businesses and trade. In this globalization period, much more regions are connected through the airport, railroad, waterway. So, this COVID 19 easily spread towards other regions. We have the study of COVID 19 infection and mortality status for different causes consideration of the different countries in the world.

Literature selection:

The objects of this study are relevant papers indexed in International journal and Scopus, a widely used database for archiving scientific articles. Another commonly used database COVID 19 in the Web of Science. However, Scopus was used for its broader coverage on my paperwork.

Procedures for literature Assessment:

The selected papers and journals were reviewed in detail to extract the necessary information for the analyses of infection status and mortality status of the different regions. Specifically, to analyses the contents of the selected papers, an excel sheet was designed with selected papers on the rows, and columns in Excel for collecting data on a wide range of items and issues, including geographic focus, sectoral issues focus, socio-economic and environmental factors, impacts, and key lessons in the different countries. The review was conducted in three steps. First, each co-author reviewed a number of important papers and collected the necessary data. Following this, the lead author checked the collected COVID 19 data, divided the articles and journals into several themes based on commonalities, and coded the COVID 19 spreading data. At the last stage, the authors carefully checked the reviewed articles to ensure the accuracy of the collected and coded data. This specific data was then used for writing up and complete this paper.

Statement of the Problem:

In this pandemic situation, a huge problem faces the first time of the people. People are don't know how to manage and controlled the COVID 19 spreading. This unknown virus is breakdown the world economy, breakdown the international relationship, and challenges the medical world, and starts a bureaucratic war, Personal Protective Equipment (PPE) scarcity and lockdown proposed by the WHO for spreading, etc.

Selection of the study area:

We have selected the mainly COVID 19 data on infection and mortality people status from the World Health Organisation (WHO). We have classified mainly six regions and discuss the different countries which are more affected by the COVID 19. These six regions are i) Western Pacific

region, ii) southeast Asia Region (SEA), iii) Region of America, iv) Europe region, v) Eastern Mediterranean Region, and vi) African Region. Here different stage COVID 19 hotspot countries different region situated and their different governance behavior are increasing their infections data and mortality data of COVID 19. We have mainly discussed highly affected infections and mortality in countries in the world.

Objectives

The main objective of this paper is

- 1) To examine the spreading causes of COVID 19 from the COVID 19 hotspot region;
- 2) To examine the COVID 19 infective status of the different region;
- 3) To identify the COVID 19 mortality status of the different region in the whole world;
- 4) To examine the good relationship with China for increasing the COVID 19 spreading firstly;
- 5) To identify the different Impact of COVID 19 for 1st world and 3rd world countries;
- 6) To examine the abstain process of applying by the different countries for COVID 19 Spreading;
- 7) To examine the monthly journey of this COVID 19 infection and mortality status.

2. Materials and methods

Data extraction

We extracted population data (total population of the affected countries in 2020) from the World Health Organisation (WHO). The database has been designed and updated by WHO continuously for different countries in the world. We extracted the number of total cases, the total number of deaths, and infective cases from the WHO database. WHO coronavirus databases were designed and updated every day (real-time) for every parameter. We included data from the beginning of the outbreak to 1st January 2020 towards 30 April 2020 for our analysis.

Data analysis

We inserted the data in MS-Excel 2013 (Microsoft Corporation, Redmond, WA 98052-6399 USA) on the laptop for five months of data analysis. We produced epidemic curves, and infective and mortality status according to different regions. In all the cases, we produced graphs showing spatial distribution using MS-Excel (Microsoft Office Home and Student 2016). The linear and log-linear diagram of COVID-19 cases in different countries were presented graphically. WHO has continuously collected the COVID 19 data from different countries and graphical data represents, which is more help my research work.

Different tools and techniques for Completed Paper work		
Different stage	Applicable Methods	Important Tools & Techniques
First stage (Selection the topics and research area)	Study Area Selection	In depth thinking on this selected topic
	Statement of the Problem	
	Literature Review	Online Literature Review
	Research Design Making	Only the based-on statement of the problem
Objectives Formulation		

Second stage (Search the topic wise data sources)	Data Collection	Secondary	COVID 19 Infections and Mortality data from WHO and Documents from various sources
Third stage (Processing & Implementation Phase)	Data Processing & Analysis	Data Organization	Application of Different formulas MS Excel, MS Word etc.
		Data Compilation	
		Data Calculation & Presentation	
	Result & Discussion		Based on Collected Data, Its Analysis & Mapping Analysis
	Hypothesis Justification		Result Justification comparing with Previously formulated Hypothesis & Final Decision and Recommendations Providing
Final Report Writing		All assessment result studying and final report writing	

Prevention and Management:

COVID 19 spreading controlling a big challenge for the medical science world. COVID-19 spreads via atmospheric component aerosols, droplets, fomites, and feces. COVID 19 are different characteristics carry in the different climate by the proof Scientists. Humans are more responsible for spreading the COVID 19 than the environment. Cool-dry and Hot humid climates are good climates for COVID 19 spreading in the world. There are several issues on how COVID-19 affects the human body with different age groups. Lower numbers of older people lessen the morbidity and mortality of the pandemic in the world. The control and prevention of COVID-19 in the world start with organizing community infrastructure for diagnosis and special treatment and assuring that basic amenities (food, water, sanitation, health care, and public transport) are met during quarantine in the whole-world. Next, community members, those at are the highest risk need to be identified and protected specially.

Environmental factors:

Atmospheric Characteristics of the ambient environment can influence the COVID 19 transmission dynamics by affecting the survival of the virus on contaminated surfaces and/or its airborne diffusion (Zoran et al., 2020a). Impacts of different environmental and meteorological parameters such as temperature, humidity, wind speed, and pollution levels have been studied in the literature. Reported evidence is from countries such as China, Italy, the US, Brazil, Iran, Norway, India, Pakistan, and Turkey that feature different climatic conditions. We know that climatic conditions are prominent factors for build up the coronavirus characteristics. Accordingly, due to context specificities, and the number and complexity of parameters involved, results reported regarding the influence of environmental factors on COVID-19 are not uniform across different cities and regions. Conflicting results have been reported on the influence of temperature in the different countries. Some studies from China, Brazil, and Italy argue that lower temperatures are more favorable for the transmission of the virus but the tropical climate low favorable for coronavirus spreading.

Social Impacts due to COVID 19:

The pandemic has once again exposed inequalities and social fault lines that exist in many societies and make it challenging to prepare for, respond to, and recover from pandemics (Scopus). Accordingly, reducing inequalities is critical for enhancing the coping and response capacities of a different region in the world. This should also be coupled with carefully measured aimed at improving COVID 19

sense of community to prevent social tensions and improve the capacity of community-driven initiatives that are vital for responding to and recovery from risks and pandemics in a different region in the world. Age-wise mostly a vulnerable condition of old age and child baby. Because their immunity is lower than the mature people. So, every society is identifying the age group of people and caring for this age group of people.

Economic Impacts due to COVID 19:

The pandemic has declined the tax base of many countries in the world, reducing their ability to implement development plans. As different countries are expected to experience significant financial deficits, they may need to prioritize capital investments and postpone or cancel some selective plans that may deem less important. This may, however, also encourage engagement in collaboration networks of different countries in the world (Kunzmann, 2020). It is, however, too early to tell what the exact scale of economic losses in poor countries will be, and how they will respond to and adapt to those losses. Some initial good response actions such as the provision of stimulus economic plans of different countries and allowing tax deferral, have been made that their effectiveness remains to be seen by the governance. There is the origin of different arguments regarding the possible long-term economic benefits of lockdowns (e.g., due to reduced air pollution) that should be further explored in future research (Bherwani et al., 2020).

Transportation and COVID 19:

Transportation Generally, population movement and transportation infrastructure that increase inter-and intra-countries urban connectivity, are considered as key factors contributing to the spread of infectious diseases, and their role in previous disease outbreaks (e.g., Ebola) has already been documented (Connolly et al., 2020b). This is also confirmed in a study on the association between mobility patterns and the spread of the virus across different regions. Results show that the number of daily certified cases of COVID-19 infections is strongly linked with the trips made 21 days before (note that this finding shows that the 14-day quarantine period set in many places, based on incubation-based approaches, may not be accurate) (Carteni et al., 2020). There are also other modeling studies confirming the significance of mobility patterns/restrictions for the spread/containment of the pandemic (Wu et al., 2020). Several studies have examined the efficacy of travel restrictions in containing the spread of the COVID 19 virus in the world. Results show that restrictions on human movement have limited the spread of the virus in China

(Kraemer et al., 2020; Tian et al., 2020), and the UK (Hadjidemetriou et al., 2020). According to Zhang et al. (2020), the first reaction of many countries/cities to the COVID-19 outbreak was to minimize air travel from/to China, and it had effectively reduced the number of COVID-19 cases imported from China in February 2020 to the different regions.

Overall, the early evidence on COVID-19 impacts on the transport sector highlights three major issues of the different countries in the world:

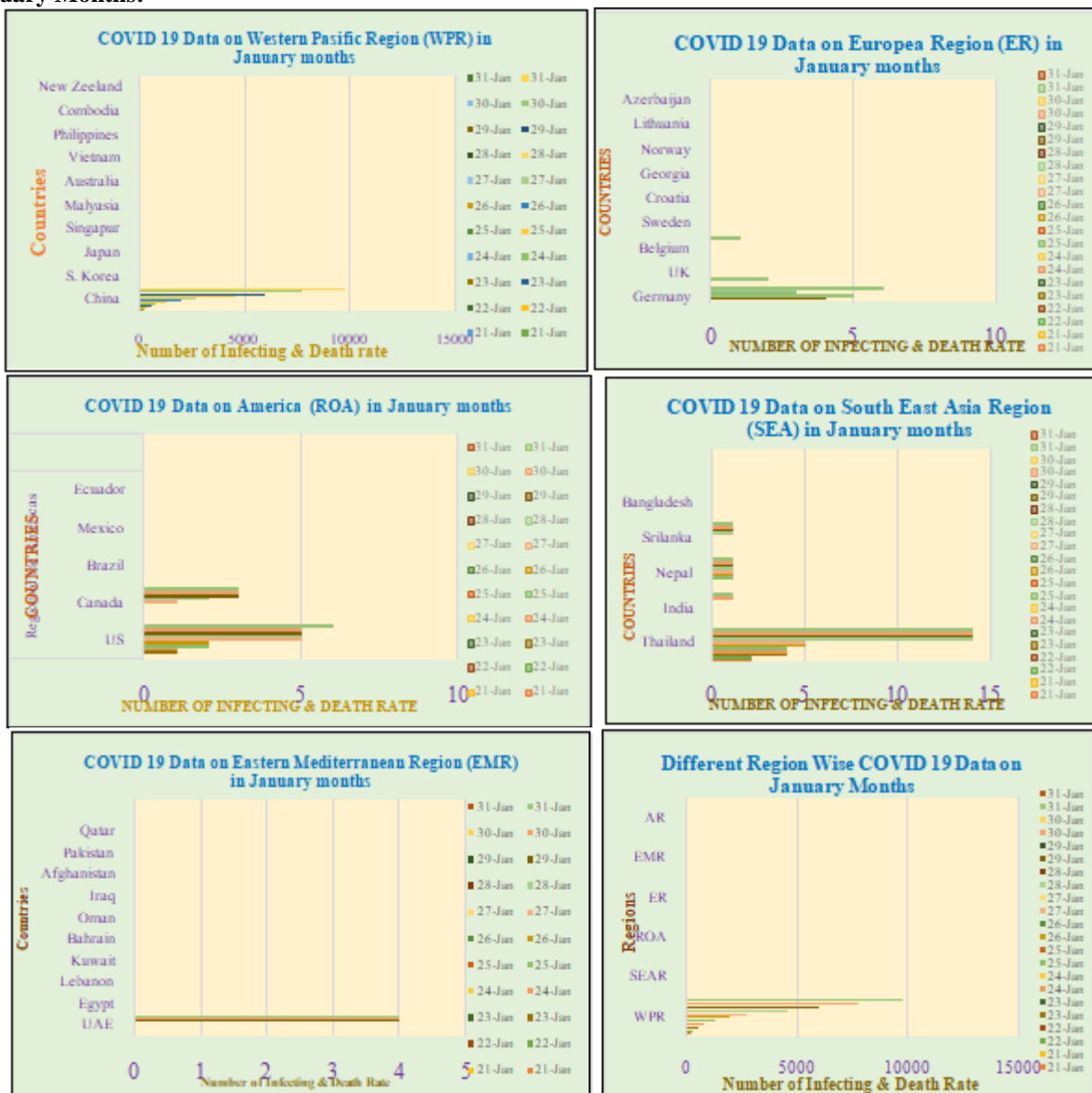
First, smart mobility restrictions, based on the transmission risk of different transportation modes, is essential for containing the spread of the coronavirus. These should involve taking early actions to restrict travel from/to high-risk cities in selected countries;

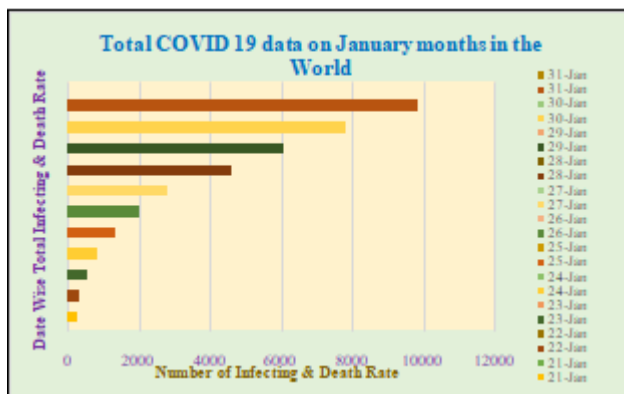
Second, policymakers should be mindful of the possible increase in the negative attitudes towards public transport due to the crisis with necessity. It was discussed people have shifted to other modes such as cycling, walking, and private vehicle use for their complete their livelihood. To avoid further reliance on private vehicles, public transportation systems should be reformed, and actions should be taken to minimize potential health risks to regain public trust by meeting the safety needs of the users by the different governance.

Third, active transport modes have proved more effective in meeting the economic mobility demands of citizens during pandemics. They can affordably provide access to important services. Therefore, active transport modes should be further promoted by more investment in cycling and pedestrian infrastructure (Hadjidemetriou et al., 2020; De Vos, 2020).

Monthly Data Analysis of Different regions in the world

1) January Months:



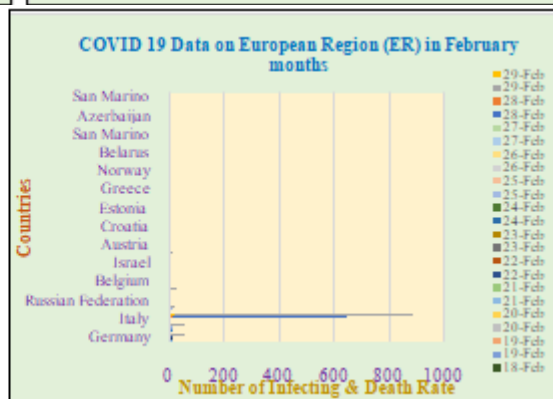
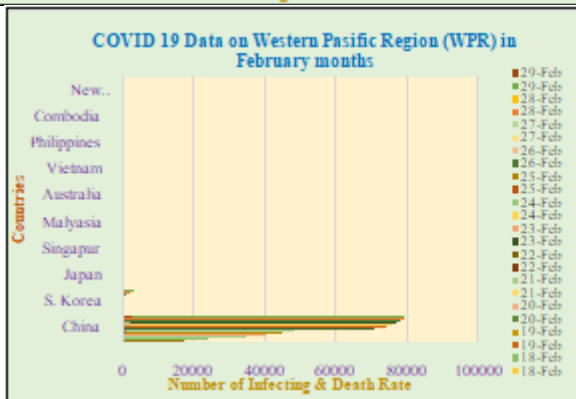
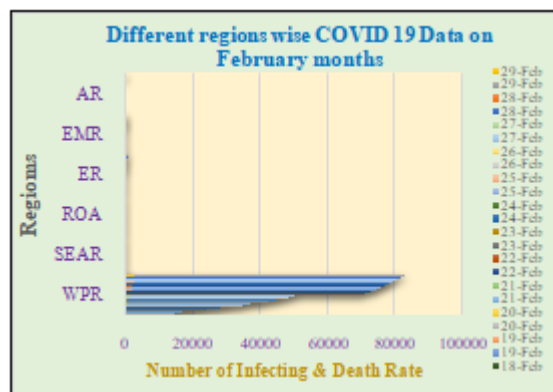
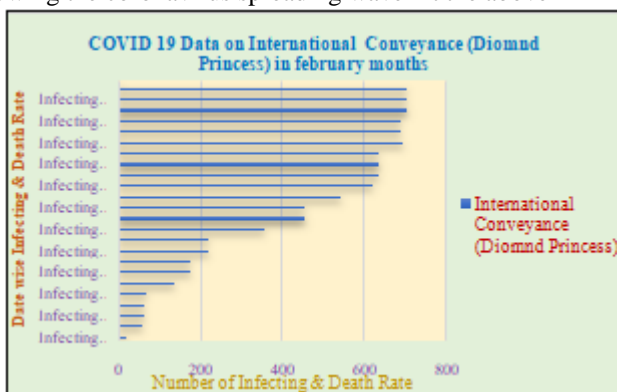


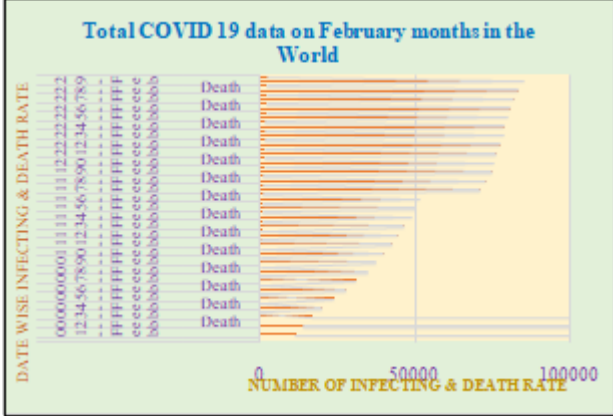
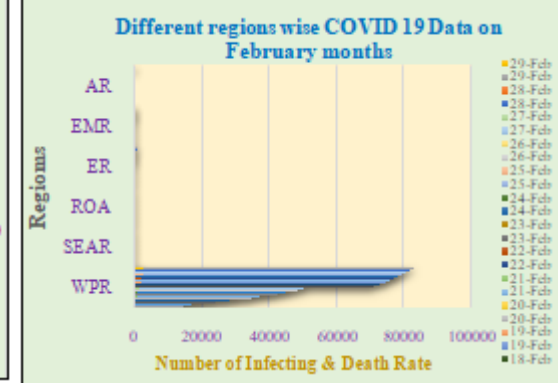
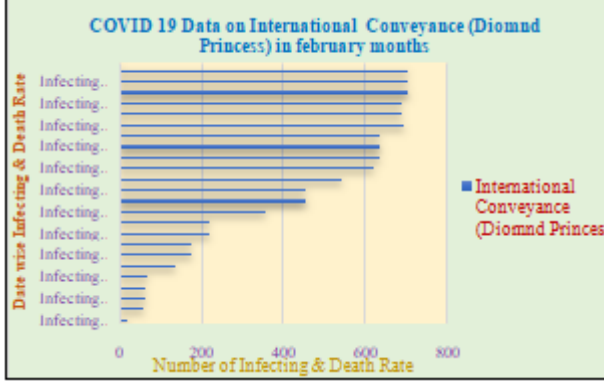
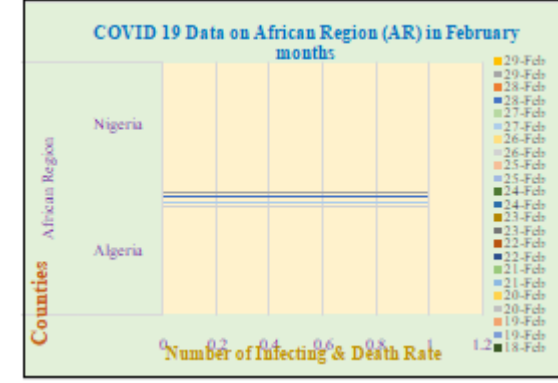
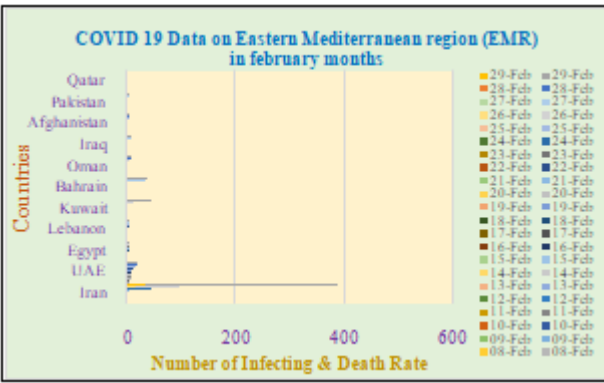
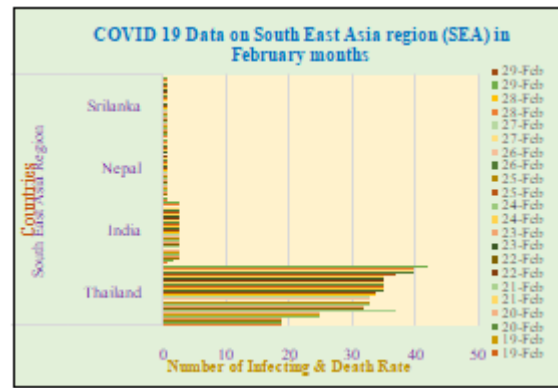
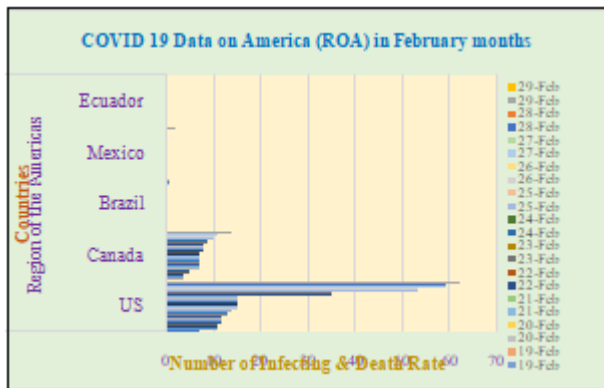
Result & Discussion of January months on COVID 19 Status

When we have showing the graphical read of the January months data then we have found that COVID 19 journey from the hotspot region. The first hotspot region in Wuhan city in China. There are about 10000 people who are addicted recorded in the last date of January months. Then due to migrant people, COVID 19 are move from the first order region towards second-order countries and their globalized city. COVID 19 spreading towards Germany, United States of America. Canada, Thailand, and United Arab Empire (UAE). COVID 19 journey towards this country due to migrant people based on good economic trade relationship with China. We have the represent this graph on the infection and mortality status and showing the coronavirus spreading wave hit the above

countries and their score of infection people is average 15 people. But no mortality people found in all hotspot regions in the world. January month we have not to found the no death people due to virus injured and energetic time in all infective human body. These are the 14 to 21 days alive this virus in the human body. When we have infective and mortality status compares between these five regions then the found that more cases found in the Western Pacific Region, mainly that in huge cases concentrate in China than the other countries. Because in this January month mainly China in one only COVID 19 cases hotspot region.

2) February Months





Result & Discussion of February months on COVID 19 Status:

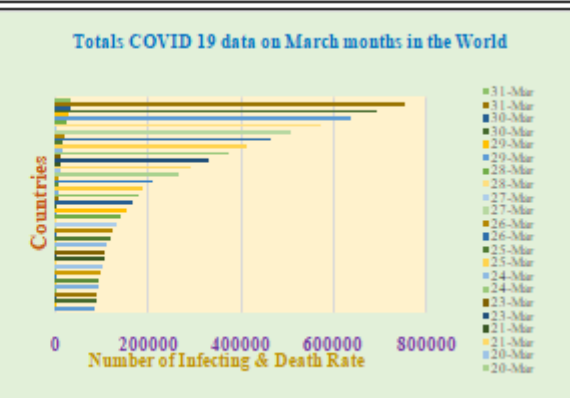
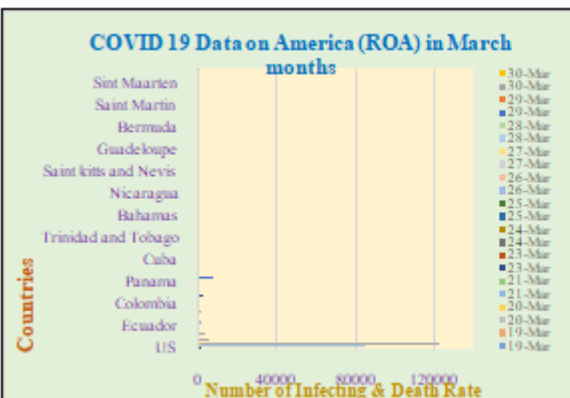
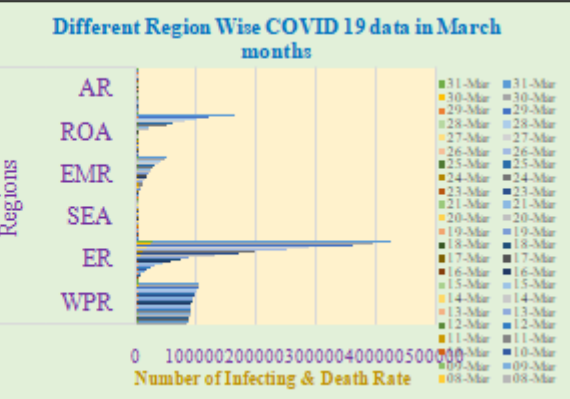
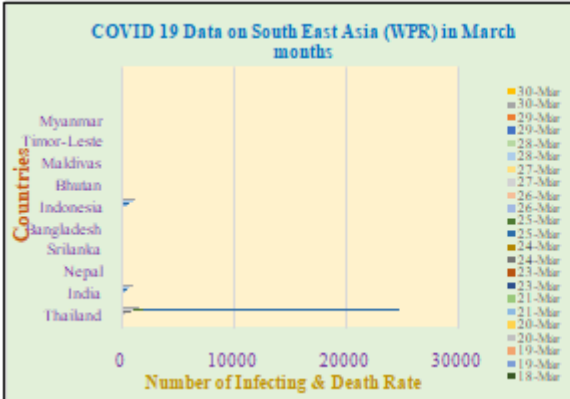
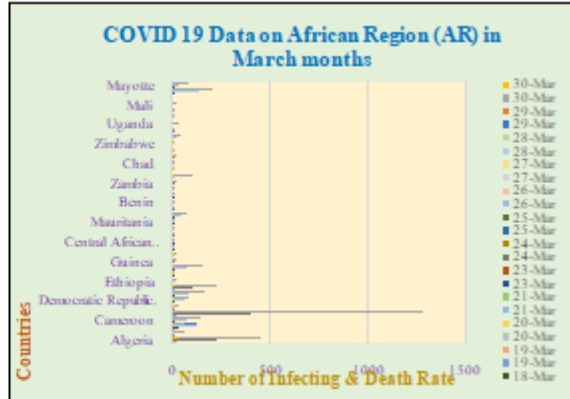
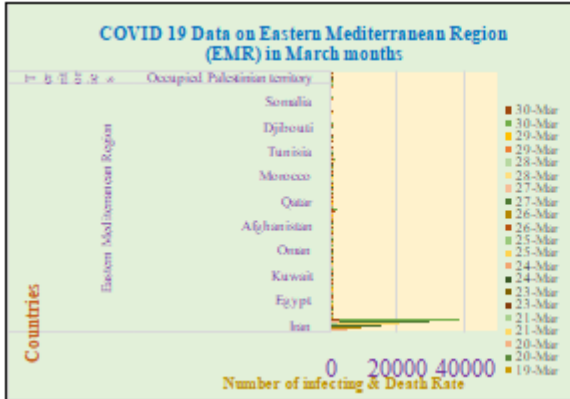
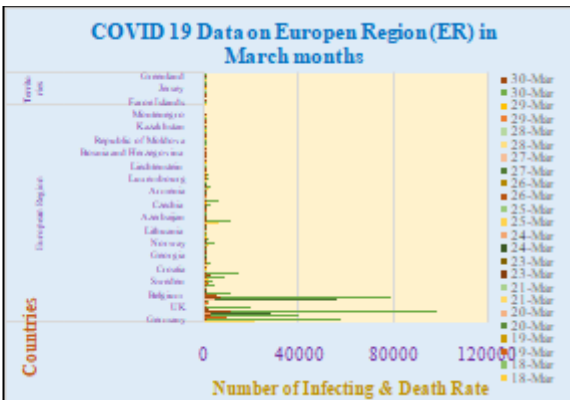
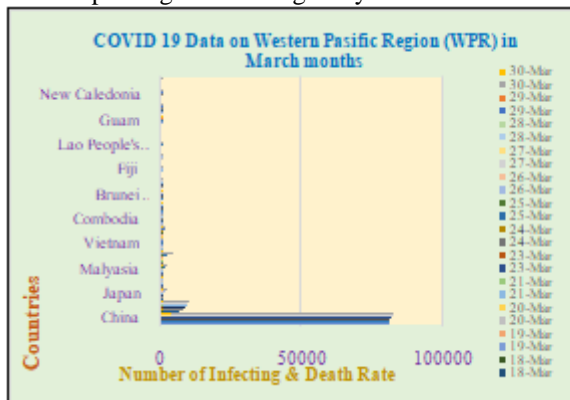
Another month of February is so important here we have found that horizontal bar line of different countries is so increasing than the January month. Here we found that China's infection rate is 79394 and mortality rate is 2838 on the last date of February month. Italy is the second hotspot region in the world, that infection and mortality stats increases and second position after China in the whole world. First month January we have found that Germany is

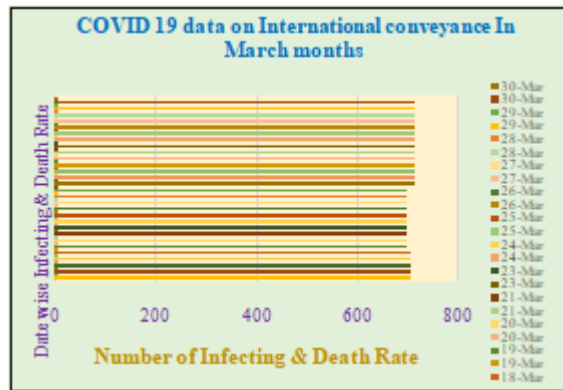
the second hotspot region in Europe but in February month Italy is rising the second COVID 19 hotspot region in the world. But the regions of America, South East Asia, Eastern Mediterranean, and African regions slowly grow the infection and mortality status than the Europe and Western Pacific region. Migrant people are collected COVID 19 and spread their nation from the COVID 19 hotspot region. Total infected peoples are 82941 and mortality rate 2860 in Western Pacific Regions than the other regions in the world. We have known that good relationship between Iran and

China, so Iran highly affected than the other countries in Eastern Mediterranean Countries. Iran COVID 19 infective rate 388 and mortality rate is 34 increase than the other countries. We have seen that the second hotspot region COVID 19 hotspot region forming Italy and Iran due to

unawareness people and unawareness government in European and Eastern Mediterranean region in the world.

3) March Months



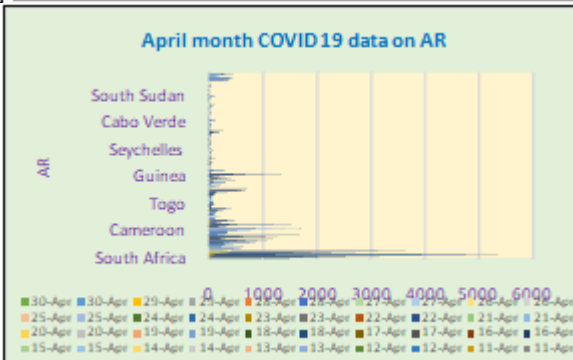
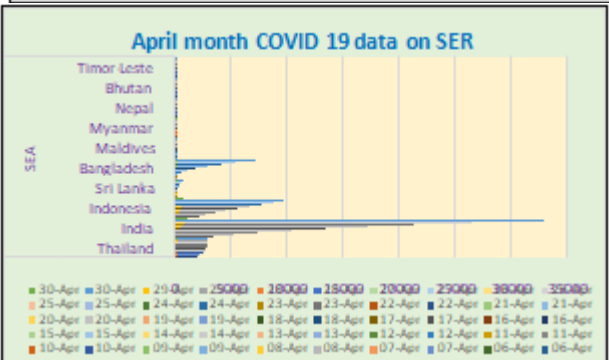
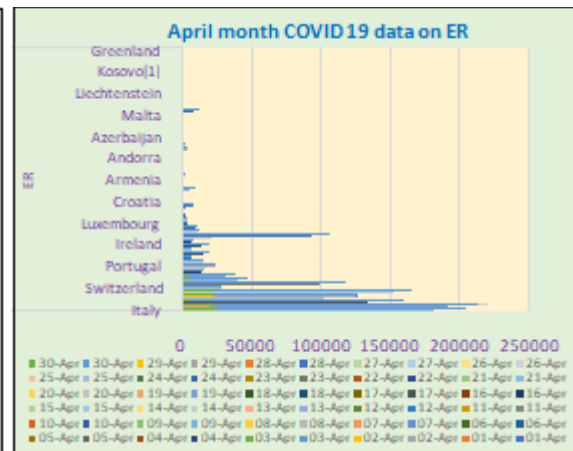
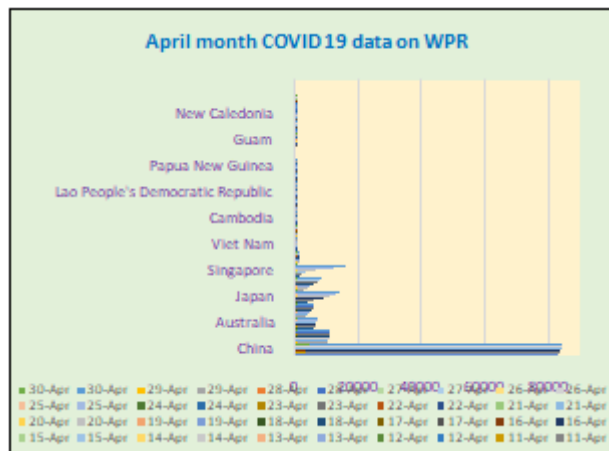


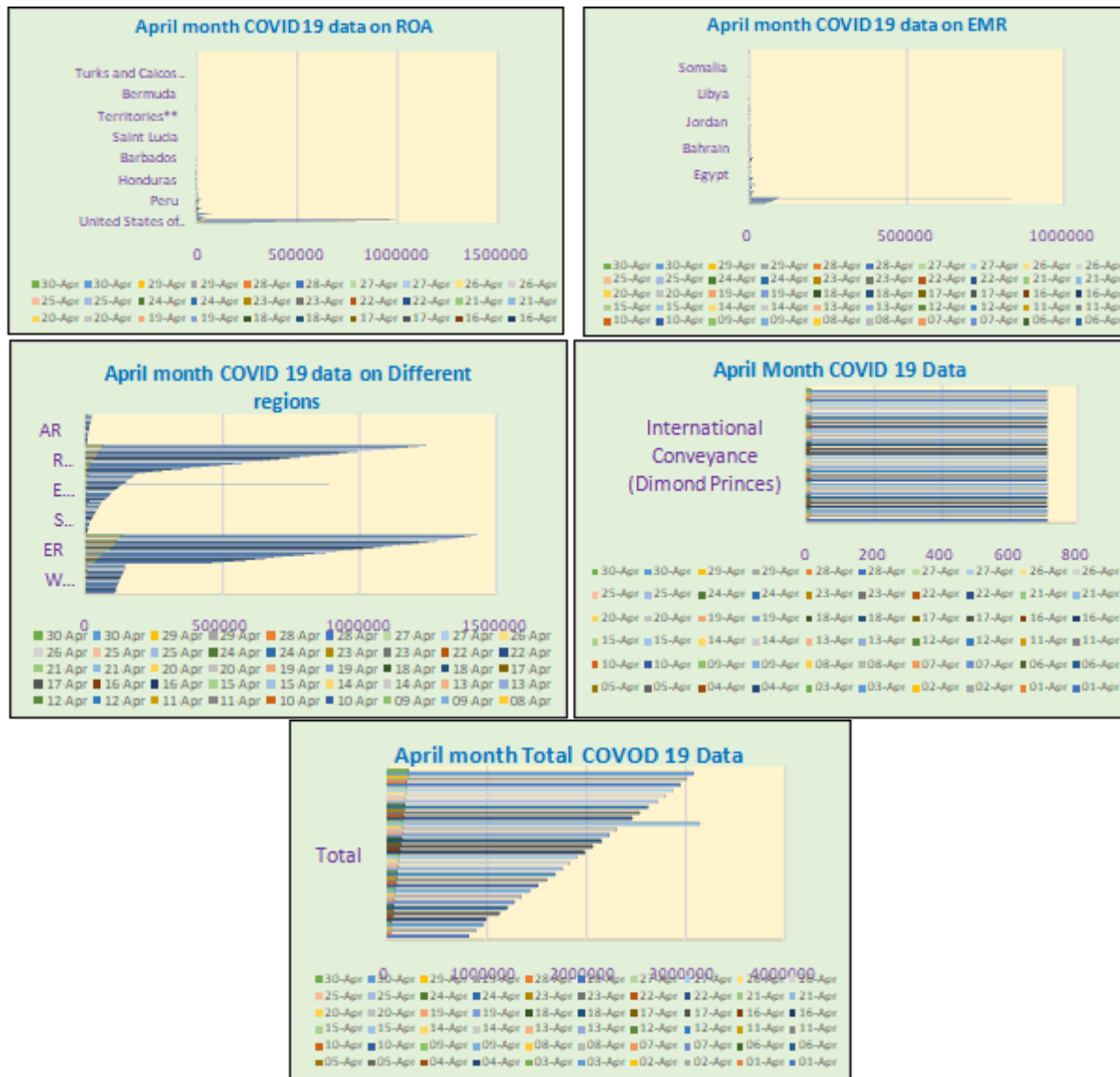
Result & Discussion of March months on COVID 19 Status

We have found that infective and mortality status increase in march months. Western Pacific Region increase infective and mortality status and COVID 19 spreading and Japan. And Germany, UK, and France are also increasing rate of COVID 19 due to Italy and China relationship. People migrate and contact other people in their nation then infective and mortality rate increases due to two hotspot region China and Italy in the European region in the world. China COVID 19 infective rate rapidly increases is 82447 and mortality rate is 3310 in the record of last month of march month. South Africa is the second hotspot region in the world that is affected by the China hotspot region.

COVID 19 infective rate is 1280 and mortality rate 1 in South Africa. We have known that economic good relationship between South Africa and China. Due to migrant people contact and spreading the infective rate in South Africa in the African region. In this march month COVID 19 infective rates. We have found that the United States of America is the second that hotspot region in the American region. The United States of America infective rate is 122653 and mortality rate 2112. We have found that the Western Pacific region, America region, Eastern Mediterranean, and European region are rapidly increasing their COVID 19 infective and mortality status due to their hotspot regions.

4) April Month





Result & Discussion of April months on COVID 19 Status

Our last data read in April months infection and mortality status rapidly increases than the previous months in the world. People's unawareness, scarcity of personal protective equipment (PPE), and medical facility COVID 19 are rapidly spreading in one urban area or one country and other countries. We have found that Australia, Japan, and Singapore are rapidly increasing their COVID 19 infected people due to the first and second hotspot region. In other regions of Italy, Switzerland, Ireland, Portugal and Luxemburg are increase their COVID 19 rate due to maximum migrant people and unaware behavior by the government and people. India is the third hotspot region due to the United States of America and European countries. We have known that the United States of America and Italy and the UK are the second hotspot region in the world. India's infective rate is 33050 and the mortality rate is 1074. India is the third COVID 19 wave country, then COVID 19 spread towards India neighborhood region. Another region South Africa is known as the second COVID hotspot region, then Mauritius, Kenya, and Congo CIVID 19 spreading from South Africa. In the last date census of April month found that infection and mortality rate West Pacific region (WPR) is 147743 and 6094, European region (ER) is 1434649 and

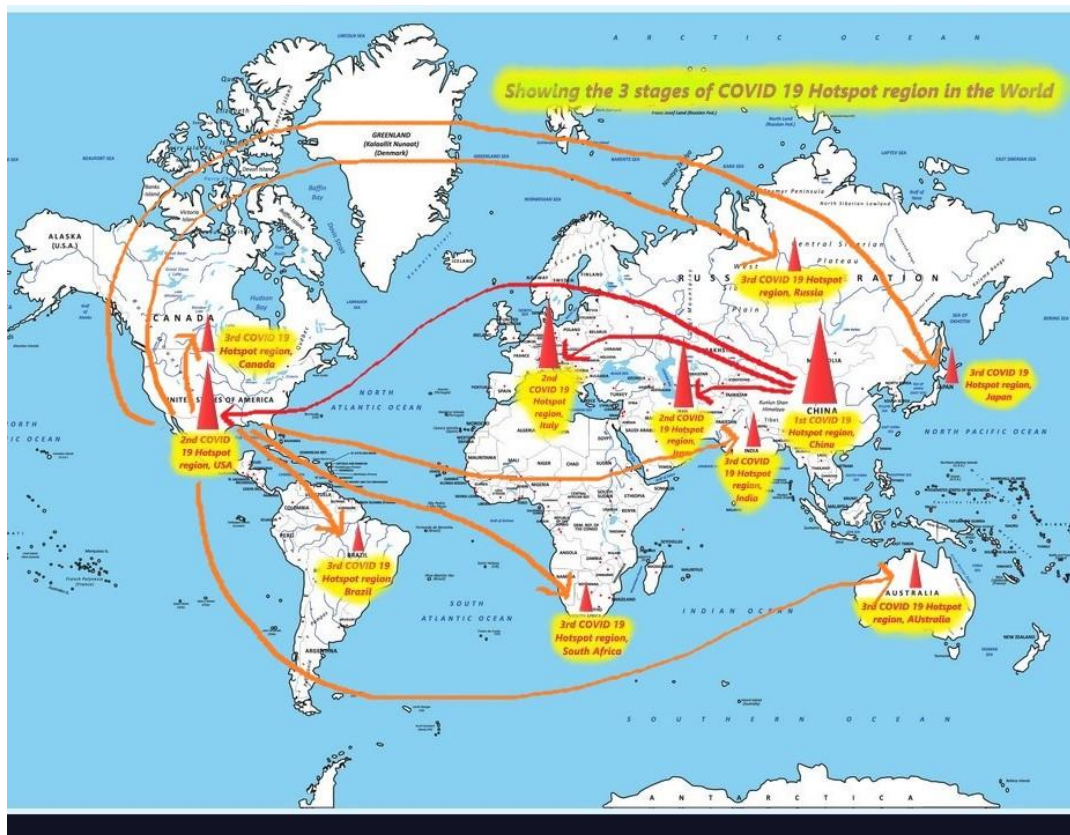
135961, South East Asia (SEA) region is 54021 and 2088, East Mediterranean region (EMR) is 182417 and 7447, Region of America (ROA) is 1246190 and 65228 and African region (AR) is 24713 and 938. This is the April month COVID 19 data, this month COVID 19 gradually increases the infective rate.

COVID 19 Flow with the Different Hotspot region

We have found that COVID 19 flows from the on to another region with the based on their people migrant, trade and tariffs. Which countries good international relationship those countries that are the main cause of COVID 19 flow from this country. Like China good relationship Iran and Italy so, COVID 19 flow from China towards Iran, and Italy direct the infected this virus due to people contact. In other countries the USA more a good relationship with them based on their trade and tariffs, this the main cause of COVID 19 flow from the 1st Hotspot COVID 19 regions. And 3rd hotspot countries are infected directly due to 2nd hotspot region in the world. Like India, South Africa, and Canada are infected by the COVID 19 due to USA and European countries. Then spreading their surrounding region. Another subject of the 3rd hotspot region COVID 19 spread their neighborhood countries due to people's contact with their people and neighborhood people contact. Like Bangladesh,

Nepal, and Bhutan COVID 19 spreading due to India's good relationship. Because we have known that this virus is a long time not stable in the atmosphere. This virus some minutes stable in the different atmosphere in a different region. But this virus long time stable like 14 days and 21 days stable in

the human body. So human body is the main container and medium of COVID 19 spreading from one region to another region.



*This map created by the use of Microsoft paint 2d and paint 3d

Epidemiological characteristics and test rate of COVID-19 in the world

The recovery rate from COVID-19 was the highest (91.15%) in the Oceania continent and lowest in the North American region (24.91%) in the world. In South Asia, just over 30% of COVID-19 patients recovered from this coronavirus disease. Europe did the highest number of tests per million population, followed by Oceania and North America. Africa and the South Asian region did the lowest quantity of tests per million people than others to confirm the COVID-19 infection.

COVID-19 hotspot analysis for America, Asia, Europe and African countries

We identified a wide hotspot zone of a different region in the world. China Wuhan and Hubei is the first province for COVID 19 hotspot region in the world. Coronavirus firstly spreading a fishing market in Wuhan City in china said by World Health Organisation. A brief debate on the origin of Coronavirus origin places. The United States of America always said the Wuhan Virological Laboratory is the main source of the COVID 19 virus originated in China. This virus some number of people infective and there are admitted hospital and seriously injured. But China has hidden this virological news from the world. But this virus contacts the human body to the human body and spread to another region. In this globalization period and good international communication with Europe and Middle East

Countries and the United States of America. Effective this favourable condition COVID 19 viruses are rapidly spread in Italy in Europe, Iran in Middle East Countries, and the United States of America in the World. So, Italy, Iran, and the United States of America are the second COVID 19 hotspot region after the first hotspot Wuhan and Hubei provinces in China. After this second hotspot region then spreading the channelize the other cities in contagious the other cities and other countries. After Italy then the affected the COVID 19 UK, France, Germany and after the USA then Canada and South American countries are sequentially affected due to coronavirus. COVID 19 spreading in India, Pakistan, and Bangladesh, and due to the globalization periods and good relationship of western countries, so India, Pakistan, and Bangladesh are the third hotspot region in the south Asian countries. We have known the international relationship mainly people migration ration is main causes of the rapidly COVID 19 spreading in the world.

3. Limitations of the Study

A low-test rate impacts the number of cases, thus affecting the death rate in the world. However, sometimes there is a lack of resources available for specific poor countries like Afghanistan and South African Countries, which is a crump to make a promising interpretation. The Biasness data are the wrong status create on COVID 19 issues in the world. World Health Organisation (WHO) depended on different

countries' infective and mortality census accuracy. So, data accuracy is the main factor of this work.

4. Conclusion

Though the case count was lower initially in the different countries due to a limited number of tests, as time elapses and the test facility is enhanced, the number of cases is increasing exponentially and transmitted to the community. We found that the spatial and temporal pattern of the COVID-19 varies across the different regions, which recommends customized country-specific prioritized policies identifying the real hotspot of infection and applying strict restriction of mass movement within hotspot areas. Strict lockdown is crucial for containing the spread of COVID-19, which is the best measure to maintain extreme social distancing, controlling the infection, and saving lives is the only way for Spreading COVID 19. Health care in the poor region is already weak, marked by low funding levels and access to better personal Protective Equipment (PPE) services. Besides, we should establish a potential early warning system for COVID 19 spreading status. We have found that six regions present in many COVID 19 hotspot region, but which region are more migrant move and better relation with China these regions are highly impact and COVID 19 spreading rapidly in the world. We have found that first COVID 19 wave found in this China Wuhan city hotspot, and second COVID 19 wave speeding in USA, Italy, UK, Iran and South Africa hotspot due to direct contact with China Wuhan city in the world. And COVID 19 third wave spreading in India, Brazil, Australia, France in the called third hotspot region in the world. International relationship and unawareness behaviour by government and people are main responsible factors for COVID 19 spreading in from the first COVID 19 hotspot region.

5. Author Contributions

Mintu Jana: Conceptualization, Methodology, Formal analysis, Supervision, Validation, Visualization, Writing-original draft, Writing- review & editing, Data curation, Writing- review & editing, Supervision. **Taniya Roy:** Conceptualization, Formal analysis, Writing- review & editing. **Srikrishna Paul:** Writing- review, Visualisation. Conflict of interest statement the authors declare that there are no conflicts of interest.

6. Acknowledgements

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. We acknowledge the Department of Health Services of different countries for publicly sharing COVID-19 outbreak data. We thank the World Health Organisation (WHO) and India Health Department for their COVID 19 data Sharing and special thanks to our family and Institution support for completed this work.

References

[1] Sharifi.A., Garmsir.A.R.K., The COVID-19 Pandemic: Impacts on cities and major lessons for urban planning,

design, and management, Science of the Total Environment 749 (2020) 142391, Elsevier, www.elsevier.com/locate/scitotenv

- [2] Seidlein.L.V., Alabaster.G., Deen.J., Knudsen.J., Crowding has consequences: Prevention and management of COVID 19 in informal urban settlements, Building and Environment 188 (2021) 107472, Elsevier, 16 November 2020, <http://www.elsevier.com/locate/buildenv>
- [3] Fatmi.M.R., COVID-19 impact on urban mobility, Journal of Urban Management 9 (2020) 270-275, 3 August 2020, Elsevier, www.elsevier.com/locate/jum
- [4] Islam.A., Sayeed.M.A., Rahman.M.K., Spatiotemporal patterns and trends of community transmission of the pandemic COVID 19 in south Aisa, mBangladesh as a case study, Biosafety and Health, 21 September 2020, www.elsevier.com/locate/bsheal
- [5] Gennaro.F.D., Pizzol.D., Marotta.C., Coronavirus Diseases (COVID-19) current status Future Perspectives: A Narrative review, International Journal of Environment Research and Public Health, 12 April 2020, 17.2690; doi:10.3390/ijerph17082690, www.mdpi.com/journal/ijerph
- [6] Roy.S., Ghosh.P., Factors affecting COVID-19 infected and death rates inform lockdown-related policymaking, PLOS ONE, 23 October 2020, <http://doi.org/10.1371/journal.pone.0241165>
- [7] R.M.R., Islam.A.H.M.H., Islam.M.N., Geospatial modelling on the spread and dynamics of 154 days outbreak of the novel coronavirus (COVID-19) pandemic in Bangladesh towards vulnerability Zoning and management approaches, Earth System and Environment, 09 September 2020, Earth Systems and Environment, <https://doi.org/10.1007/s40808-020-00962-z>
- [8] Toyoshima.Y., Nemoto.K., Matsumoto. S., SARS-CoV-2 genomic variations associated with mortality rate of COVID-19, 22 July 2020, Journal of Human Genetics (2020) 65:1075-1082, <http://doi.org/10.1038-020-0808-9>.