

**COVID-19 Policy Communication Analysis:  
The Case of Singapore, based on Facebook Posts of Channel News  
Asia (CNA) and The Strait Times**

**MASTER'S THESIS**

**May 2022**

---

**Souliphone Dalavong**

*Erasmus Mundus Joint Master's Degree in International Development Studies (GLODEP)*

*Univerzita Palackého v Olomouci*

*Université Clermont Auvergne*

*Università di Pavia*

---

**Simona Šafaříková, Mgr. Ph.D.**

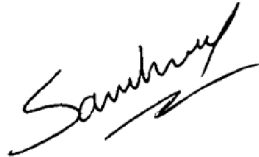
*Supervisor*

*Univerzita Palackého v Olomouci*



## **Declaration**

*I declare that this thesis entitled COVID-19 Policy Communication Analysis: The Case of Singapore Based on Facebook Posts of Channel New Asia (CNA) and The Strait Times is my original work except where citations indicate otherwise. All sources used are referenced.*

A handwritten signature in black ink, appearing to read 'Souliphone Dalavong', with a stylized flourish underneath.

*Souliphone Dalavong*

*31<sup>st</sup> of May 2022*

# UNIVERZITA PALACKÉHO V OLMOUCI

Přírodovědecká fakulta

Akademický rok: 2021/2022

## ZADÁNÍ DIPLOMOVÉ PRÁCE

(projektu, uměleckého díla, uměleckého výkonu)

Jméno a příjmení: Souliphone DALAVONG  
Osobní číslo: R200658  
Studijní program: N0588A330003 Development Studies and Foresight  
Specializace: Development Studies and Foresight – specialization in Global Development Policy  
Téma práce: COVID-19 Policy Analysis: the case of Singapore  
Zadávající katedra: Katedra rozvojových a environmentálních studií

### Zásady pro vypracování

The same as other countries in the world, Singapore has been severely affected by the COVID-19 pandemic. However, with its excellent public healthcare system, the adoption of technologies for contact tracing, and adequate policy, Singapore was in the 18th of COVID-19 resilience country ranking in 2021, which was in the 1st ranking in ASEAN region (Bloomberg, 2021). Regarding the national public policy for COVID-19, many studies have been done in 2020. Therefore, this study will focus on the period from January to August 2021. It will use the qualitative methodology and examine the media statements, policies and responses of Singapore during the mentioned period. The study will focus on of public policy for COVID-19 in Singapore, as well as providing recommendations for the future.

Rozsah pracovní zprávy: 10-15 000 slov  
Rozsah grafických prací: dle potřeby  
Forma zpracování diplomové práce: tištěná/elektronická  
Jazyk zpracování: Angličtina

Seznam doporučené literatury:

**CHYBA! V následujícím zvýrazněném textu má uživatel chyby, sázecí systém TeX nedokázal text naformátovat. Odeberte, prosím, veškeré TeX formátovací příkazy (odeberte například znaky \$, \_, {, }, \ a další) a zkuste spustit tisk znovu. Chybný text:**

`\par{Anand, S. V., Shuy, Y. K., et al. (2021). One Year on: An Overview of Singapore's Response to COVID-19\textemdashWhat We Did, How We Fared, How`

Vedoucí diplomové práce: Mgr. Simona Šafaříková, Ph.D.  
Katedra rozvojových a environmentálních studií

Datum zadání diplomové práce: 21. ledna 2022  
Termín odevzdání diplomové práce: 30. května 2022

L.S.

---

doc. RNDr. Martin Kubala, Ph.D.  
děkan

---

doc. RNDr. Pavel Nováček, CSc.  
vedoucí katedry

V Olomouci dne 20. ledna 2022



## **Acknowledgment**

*This master's thesis would not be possible without the kind support of a few individuals.*

*First, I would like to thank my supervisor, Simona, for the guidance and support for the thesis. I highly appreciate her time and effort on every step of my journey. I thank her for her constructive comments and guidance throughout the thesis. Without her, this thesis would not be successful.*

*Second, I would like to express my gratitude to Alex Lew (National University of Singapore), for taking the time and effort to assist me in shaping the thesis topic and reading my draft. He also provides useful sources and information about Singapore. He has no shortage of generosity when giving suggestions on how I can improve my research.*

*Third, I want to thank Eni, Adeniran, Dilshoda, and Sipiwe for being my companion in Olomouc. We always met at the dormitory's reception to work on our theses. On weekends, we usually explored Olomouc and our favorite place is a bubble tea shop in the city center. We were all in the same boat and that made me feel that I was not alone.*

*Fourth, I would like to thank Melanie for taking the time to proofread my draft despite her busy schedule. She has a great willingness to help me with the correction of my writing as well as provide suggestions and support.*

*I dedicate this work to the following people:*

*To Phiwlvanh, Ta, Tae, and Phit, my family back home in Laos for the greatest support that encouraged me to never give up on what I want to pursue. Even though they live far away, their love and support always reach out throughout the time I am away from home. Thank you for always being there for me.*

*To David, who was always the best support during my thesis journey, especially when I felt stressed and exhausted. Thank you so much for helping me during the data collection. You have added many things to my life that I did not expect. You are such a blessing to me.*

## **Abstract**

COVID-19 has ravaged the world and Singapore is no exception. However, with its excellent public healthcare system, the adoption of technologies for contact tracing, and adequate policy, Singapore was ranked 18th in the COVID-19 resilience country ranking in 2021, placing its 1st in the ASEAN region (Bloomberg, 2021). Although national public policy for COVID-19 in Singapore started in 2020, this study focuses solely on the period from January to August 2021. Using the framework from Djalante et al. 2020, the study focuses on communication and perceptions of public policy for COVID-19 in Singapore. It uses a qualitative methodology and examines the government's communication through Facebook posts of the two most popular news organizations in Singapore, Channel News Asia (CNA) and The Strait Times, during the aforementioned period. Out of their 2,026 posts, 451 of them were about COVID-19 and were chosen for analysis. The analyses identified 7 major themes. In addition, the study then investigates the emotions of the public by analyzing the comments on the posts in the theme's "recommendations" and "measures". This study adds to the knowledge about how the COVID-19 policies in Singapore were being communicated through social media and highlight the emotions and perceptions of the citizens toward the government.

**KEYWORDS:** COVID-19 Policy, communication, Singapore, Facebook posts.

## Table of Contents

Chapter 1 .....	1
Introduction.....	1
1.1 Background of Study .....	1
1.2 Background of the Case Study Country.....	2
1.4 Definition of terms .....	4
Chapter 2.....	6
Literature Review.....	6
2.1 Health policies in the world .....	6
2.2 Health policy in the ASEAN region .....	9
2.3 Public health measures in Singapore .....	12
2.4 Concept of Communications and Perception.....	16
2.5 Concept of social media and Facebook .....	18
2.6 Theoretical Framework .....	20
Chapter 3.....	25
Objective and Methodology.....	25
3.1 Research Approach .....	25
3.2 Data Description .....	26
3.2.1 Data Source .....	26
3.2.2 Sample Design .....	26
3.2.3 Data Analysis .....	27
3.3 Evaluation of the research process.....	30
3.3.1 Limitations of data .....	30
3.3.2 Ethical Consideration .....	30
Chapter 4.....	31
Results and Discussion .....	31
4.1 The communication and perceptions of COVID-19 public policy in Singapore based on Facebook posts of CNA and the Strait Times.....	31

4.1.1 The narrative and messaging .....	31
4.1.2 The emotion and public policy .....	38
.....	38
Chapter 5 .....	44
Conclusion and Recommendation .....	44
Reference .....	46

## List of Figures and Tables

Figure 1. Map of Singapore .....	3
Figure 2. A Summary of ASEAN Responses to the COVID-19 .....	11
Figure 3. Disease Outbreak Response System Condition (DORSCON) Framework .....	13
Figure 4. Initial implementation of control measures in Singapore, from January 2020 .....	14
Figure 5. Most popular social networks worldwide as of January 2022, ranked by number of monthly active users (in millions).....	18
Figure 6. Number of Facebook users in Singapore from 2017 to 2020 and a forecast up to 2025 (in millions).....	19
Figure 7. Framework for investigating the efficacy of governance strategies.....	21
Figure 8. Schematic formulation of a theme from the codes captured from posts. ....	28
Figure 9. The Strait Times' Facebook post on August 29th, 2021. ....	35
Table 1. Criteria for the inclusion of the Facebook posts and comments of CNA and The Strait Time into the sample .....	27
Table 2. Facebook Posts of CNA and The Strait Times from January to August, 2021 .....	28

## **Abbreviations**

ASEAN	The Association of Southeast Asian Nations
CAN	Channel News Asia
COVID-19	Coronavirus disease
DORSCON	Disease Outbreak Response System Condition Framework
IMF	International Monetary Fund
MOH	Ministry of Health Singapore
RCCE	COVID-19 global risk communication and community engagement strategy
SARS	Severe Acute Respiratory Syndrome
ST	The Strait Times
UHC	Universal Health Coverage
UN	United Nations
UNICEF	the United Nations International Children's Emergency Fund
WHO	World Health Organization

# Chapter 1

## Introduction

### Overview of the chapter

The first chapter presents an overview of the study. It begins with the background and context of the study, including the general information on the COVID-19 pandemic. Then it provides an overview of the case study country that includes the geographical, economic, and political conditions. Lastly, the chapter ends with the aims, objectives, and the definition of terms that were used in the study.

### 1.1 Background of the Study

COVID-19 caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was declared a global pandemic on March 11, 2020, by the WHO. (Cucinotta and Vanelli, 2020). It has affected many countries in the world as the total number of infected cases was 437 million, with 5.96 million cases of death as of February 28, 2022 (Worldometers, 2022). Singapore, a city-state of 5,932,026 (2022), with a population density of 8491 people/km<sup>2</sup>, is the second-most densely populated country in the world (World Population Review, 2022). According to the World Health Organization, in Singapore, as of February 28, 2022, 710,880 confirmed cases and 1,007 deaths have been reported (WHO, 2022).

The first infected case of COVID-19 in Singapore was on 23 January 2020 (Abdullah and Salamat, 2020). From the beginning of the COVID-19 pandemic until the current time, Singapore has implemented some responses to this pandemic, including strict lockdowns, mobility restrictions, quarantine, and vaccination programs. The government has announced a “circuit breaker” (a local term for lockdown) which consists of 4 phases, namely: (1) entry, (2) extension, (3) exit of lockdown ‘phase 1’, and (4) entry of lockdown ‘phase 2’ (Ligo et al, 2021). With such excellent health policies for COVID-19 and fast responses, Singapore ranked 18th in Bloomberg's 2021 COVID-19 Resilient Country Ranking, ranking 1st in ASEAN (Bloomberg, 2021).

Research offers some insight into how individuals have complied with the COVID-19 policies in Singapore during the pandemic. There have been numerous existing literature outcomes since the date of its implementation. Ong and Lim (2021) provide individual differences in the perception of the COVID-19 vaccine in Singapore. Participants with a greater

community decisional balance<sup>1</sup> were more likely to have the intention to receive the vaccine. It is similar to the study of Ligo et al. (2021) on the solidarity and vulnerability in social media-based public responses to COVID-19 policies of mobility restriction in Singapore. Most of this literature shows the positive results of how the Singaporean government could deal with the pandemic of COVID-19 so sufficiently and immediately.

As the WHO mentioned, the best method to prevent and decelerate transmission is to be thoroughly informed about the disease and how it spreads (WHO, 2020). Like anywhere else in the world, the Singaporean government has its method to deliver the messages on COVID-19 responses to its citizens. One of the main strategies is to use social media, which has become increasingly popular in Singapore since 2005 (BroadbandSearch, n.d.). According to the Digital 2020 Global Overview Report, in January 2022, there are 5.45 million internet users in Singapore, which accounts for 92 percent of the total population, while 5.30 million are social media users (89.5% of the total population). The highest utilization of social platforms is Facebook, which accounts for 3.55 million users in early 2022 (Kemp, 2022).

## **1.2 Background of the Case Study Country**

Singapore (the official name Republic of Singapore) is a fifty-seven-year-old Southeast Asian country, located at the southern tip of the Malay Peninsula. Approximately two-thirds of the island's rugged terrain is below 50 feet (15 meters) above sea level (Winstedt et al., 2022). Singapore is considered a small country with an area of only 728 km<sup>2</sup> but with a relatively big population of 5,932,026 (2022), in comparison to its size, with a high life expectancy at birth of 84 years old (World Population Review, 2022). Despite its humble size, Singapore is not only the largest port in Southeast Asia but also one of the busiest ports in the world. That earned Singapore the title of the only developed country in Southeast Asia. Based on the data released by World Bank (2022), the GDP of Singapore is 340 billion USD and the GDP per capita of 59,797.8 USD (2020).

Given that Singapore gained independence from the British Empire in 1963 and unexpectedly separated from the Federation of Malaysia in 1965, it needed to bring together its diverse, multi-ethnic population as people and establish a sense of national identity. It has attempted to accomplish this through education, among other things, by developing a sense of history, a set of common values, and a sense of citizenship (Han, 2007). Singapore's population is diverse as a result of significant previous immigration. Chinese people are accounted for

---

<sup>1</sup> A way of representing the benefits (pros) and costs (cons) of alternative behavioral choices



almost three-quarters of the total population. Malays are the second largest ethnic group, followed by Indians. As a result of the ethnic variety, four official languages are recognized: English, Mandarin Chinese, Malay, and Tamil. English is still the predominant language of administration, business, and industry, as well as the principal language of education in schools (Winstedt et al., 2022).

**Figure 1. Map of Singapore**



*Source: World Atlas (2021)*

The British colonial rule lasted 140 years (1819-1959) and had a substantial impact on the country's politics, administration, and economic perspective (Lam, 2000). Singapore continued with the British colonial tradition in the creation of its general government after emerging as an autonomous state inside Malaysia in 1963 and its separation from Malaysia in 1965. Singapore's political scene has been dominated by The People's Action Party (PAP) since 1959, with an absolute majority of more than 90 percent of elected parliamentary seats (Lam, 2000; Wirtz and Chung, 2001). Currently, the president of Singapore is Halimah Yacob and Lee Hsien Loong is the prime minister.

Singapore is a co-founder of the Association of Southeast Asian Nations (ASEAN), and one of its most influential and powerful members, as well as the most developed country among all ASEAN countries, not just economically, but socially and culturally. Singapore has the longest life expectancy, the lowest infant mortality rate, and the highest adult literacy index (ASEAN Secretariat, 2019).

### **1.3 Aims and Objectives of the Study**

This study's goal is to examine the communication from the government and ground perceptions of public policy regarding COVID-19 responses in Singapore during the period from January to August 2021. This includes the emotional dimension, the narrative and messages from the government to the population. It also provides some recommendations for the last chapter.

The overall purpose of the study can be summarized in three main points. Firstly, it looks at how the COVID-19 policy was being communicated to Singaporeans. Secondly, the paper examines how the citizens perceive the responses to COVID-19. Lastly, it gives recommendations on what can be improved in the future - this is useful not only for the policymakers in Singapore but also on a global scale in the event of a future pandemic.

This paper is organized as follows: Chapter 1 provides an overview of the COVID-19 situation and the subsequent responses, as well as the goal of the study and the definition of terms that are used in this paper; chapter 2 gathers the literature that is relevant to the study including literature on health policy communication and perceptions, and how different approaches were used for different types of disease in the world, ASEAN region, and Singapore, literature on the concept of communication and receptions, social media and Facebook is also included in this chapter; chapter 3 identifies the methodology used in this study, including a selection of samples, data analysis methods, and ethical concerns; Chapter 4 analyzes the results of the study and provides a discussion, and chapter 5 covers the conclusion and recommendations for the future.

### **1.4 Definition of terms**

According to WHO, health can refer to a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The attainment of the greatest available health is one of the basic needs of human beings, regardless of race, religion, political beliefs, or economic or social situation (WHO, 2018).

A policy can be defined as “a set of explanations and intentions, to the realization of intentions, to a series of actions and their consequences, or all of these together” (Hall and McGinty, 1997). The World Health Organization (WHO) determines health policy as the “decisions, plans, and actions that are undertaken to achieve specific health care goals within a society.

Perception is an individual's point of view, and it is a powerful incentive for action. Processing sensory information and linking it to prior experiences allows one to construct a lens through which to perceive things through a sociocultural lens (McDonald, 2012).

“Social media” is a word that is frequently used to describe new types of media that entail interactive engagement (Manning, 2014). Interaction is involved in social media. This interaction can occur with long-standing friends, relatives, or acquaintances, as well as with new persons who share the same interests or even a similar acquaintance group.

Facebook, based on the definition from Mitchell (2012), is a social networking site (SNS) that enables anybody to create pages about themselves and publish photographs, comments, and videos. It was founded by Mark Zuckerberg in 2004 and became popular worldwide today.

## Chapter 2

### Literature Review

#### Overview of the chapter

The previous chapter demonstrates the background, aims, and objectives of this study. This chapter summarizes the pertinent literature of the study. There are seven sub-headings in this chapter. The first four sub-headings provide a general idea of the chapter (2.1), literature that is related to health policies at the world level to a more precise level, namely the health policy from the World Health Organization, health policies in different countries around the world (2.2), as well as ASEAN region (2.3) and Singapore (2.4). To provide the reader with a better understanding of the concept of communication and reception, the relevant literature on the concept is included in (2.5). Sub-heading (2.6) illustrates the concept of social media and Facebook usage around the world and in Singapore. At the end of chapter (2.7), there is a main theoretical framework that corresponds to the key concept of the study.

#### 2.1 Health policies in the world

The World Health Organization (WHO) is one of the United Nations agencies and the largest health organization in the world which was established in 1948 (Cucinotta and Vanelli, 2020). According to Yadav (2017), WHO dedicated most of its resources and campaigns to fighting against communicable diseases, namely malaria, yaws, trachoma, and typhus among others. WHO's responsibilities consist of assisting its member governments to strengthen their health services, create and maintain administrative and technical services.

Apart from that, the United Nations General Assembly introduced the Universal Health Coverage (UHC) in 2012 (UHC2030, 2019). The main idea is that all individuals and communities that need health services receive them without any suffering financial hardship. Achieving UHC is one of the main targets that is adopted in Sustainable Development Goals (SDGs), which is goal number 3, good health and well-being (WHO, 2021). The progress measurement of UHC is focused on 2 main points: (1) *The proportion of a population that can access essential quality health services*; (2) *The proportion of the population that spends a large amount of household income on health* (WHO, 2021).

The WHO played an important role in moderating and communicating the risks associated with the Severe Acute Respiratory Syndrome (SARS) in 2003. Over the last decade, it has launched many programs through the Office of Alert and Response Operations, Cluster

on Communicable Diseases to assist the Member States in preventing and responding to epidemic emergencies, particularly those with the potential impact. The goal of these programs is to enable a timely and adequate response (Smith, 2006).

In April 2009, a new influenza A (H1N1) virus with the key characteristics of a pandemic virus appeared in the United States, and within weeks, it had rapidly spread to every part of the country and other parts of the globe, which gained the attention of world leaders and international health organizations. In the United States, the Department of Defense developed a variety of force health protection measures, with a focus on social distance and vaccination programs (Peitersen et al., 2011). According to the national public opinion polls conducted between April and January 2009, throughout the H1N1 epidemic, more than half of the US people seemed to believe the government's response was effective (SteelFisher et al, 2010).

In 2013, the Ebola outbreak began in Guinea and resulted in over 11,000 deaths, mostly in the West African countries of Guinea, Liberia, and Sierra Leone. This outbreak was the first to pose a substantial worldwide public health danger, as well as the first to spread over several international borders (Coltart et al, 2017). Six months after the first documented case of Ebola, the World Health Organization (WHO) collaborated with 11 African governments to establish an Outbreak Response Plan to minimize the disease's transmission and spread. The WHO proclaimed the outbreak in West Africa to be over in June 2016 (CPI, 2016).

Based on Hamra et al. (2020), The term "health system governance" (HSG) was first used by the WHO in 2007. Its key functions include policy formulation and strategy development, intelligence generation, regulatory design, cooperation and coalition building, and accountability. HSG has been widely used by policymakers around the world. Apart from that, The National Collaboration Center for Healthy Public Policy in Canada (2013) illustrates the stages model that is useful in policymaking, which comprises 4 stages: (1) Agenda setting (Problem structuring), (2) Policy formulation (Forecasting), (3) Implementation (monitoring), and (4) Policy evaluation. This model has been widely used in health policy-making (NCCHPP, 2013).

## **COVID-19 responses in the world**

In the case of the COVID-19 outbreak, which was declared a global pandemic in 2020 (Cucinotta et al., 2020), the Department of Health Security Preparedness at the WHO headquarters has provided numerous packages of COVID-19 tabletop exercise (TTX) and Drills (DR) to support countries preparedness on the COVID-19 pandemic (WHO, n.d.). According to WHO, DRILLS (DR) is a guide for vaccine drills that can be applied to a country's COVID-19 vaccination program. It is comprised of 4 elements, described as follows: 1) Select a site for the vaccination session; 2) Setup the vaccination clinic/site; 3) Operate the vaccination clinic/site and manage vaccine recipients; 4) Close the vaccination clinic/site for the day (WHO, 2021a). In addition, the Table-top Exercise consists of 3 main components, including PowerPoint presentations, a Participants' Guide and a Facilitators' Guide, and a set of reference documents and technical guidance on COVID-19 (WHO, 2021a).

COVAX is a global initiative that is led by the Coalition for Epidemic Preparedness Innovations (CEPI), Gavi, and the World Health Organization (WHO), with UNICEF as a major delivery partner. Its main purpose is to speed up the research and production of COVID-19 vaccines while also ensuring fair and equal access for all countries throughout the world (Gavi, 2021). According to Gavi (2021), the success of COVAX enabled 40 countries to launch COVID-19 vaccination campaigns, delivering over 1.4 billion vaccine doses to 145 countries through COVAX, assisting in the development of the sequencing capacity in Southern Africa that discovered the Omicron variant, and attempting to negotiate unprecedented deals with the largest global oxygen suppliers to increase access in more than 120 low- and middle-income countries.

In terms of communication, WHO has provided guidelines on COVID-19's global risk communication and community engagement strategy (RCCE) for its country members and partners to develop their disease-specific risk communication and community engagement strategies. The improved strategy is based on a socio-behavioral trends study and draws on previous response learnings. The document presents a shift toward community participation and participatory techniques that have previously been shown to effectively manage and eradicate the outbreak of COVID-19 (WHO, 2020b).

Many countries around the world have adopted the guidance from WHO in their national health policy for the COVID-19 pandemic. For instance, a country like the United States of America has developed the National COVID-19 Preparedness Plan, which focuses on 4 key goals such as 1) to protect against and treat COVID-19; 2) to prepare for new variants; 3) to prevent economic and educational shutdowns; and 4) to continue to lead the effort to

vaccinate the world and save lives (The White House, 2022). In China, later confirmed as the source of a new coronavirus as a pneumonia outbreak in Wuhan, the government adopted tight containment measures, such as extending the national Lunar New Year vacation, locking down some provinces, imposing large-scale travel restrictions within the country, social distancing, and imposing a 14-day quarantine period for returning migrant workers in January 2020. It also aims to vaccinate 80 percent of its population by the beginning of 2022 (IMF, 2021).

## **2.2 Health policy in the ASEAN region**

The Association of Southeast Asian Nations (ASEAN) was established in 1967 with the inclusive goal of building up one community for building on the foundations of economic and political stability and socio-cultural relationships. Today, ASEAN consists of ten member states: Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and VietNam. It contains 8.8 percent of the world population, roughly 625 million people (The ASEAN Secretariat, 2016).

ASEAN has established a collective governance network on health services such as ASEAN Coordinating Committee on Services (CCS) in 1966, Healthcare Services – HSSWG+ in 2005, Nursing Services – AJCCN 2006, and Medical Practitioners – AJCCM 2008/2009. In 2011, with HIV/AIDS pandemic, ASEAN started to act on the call from the United Nations to achieve the access to HIV prevention, care, treatment, and support by 2015, with a declaration of commitment - Getting to Zero New Infections, Zero Discrimination, Zero AIDS-Related Deaths (ASEAN, 2011).

Different ASEAN countries apply different health approaches depending on their circumstances. For instance, in Thailand, the healthcare system is pluralistic and dominated by public health facilities. The Ministry of Public Health is the main supplier of healthcare and owns the majority of the health facilities (Thaiprayoon and Wibulpolprasert, 2017). In contrast to Thailand, in Vietnam, public-private partnerships play a crucial role in the health sector as its goal is to lessen the load on the public sector while still ensuring broad access to excellent treatment in the face of growing healthcare demands. The government highly encourages public-private cooperation in various areas such as health financing, care provision, workforce development, research, and development (Oanh et al., 2021).

## **Adopted measures during COVID-19 in ASEAN countries**

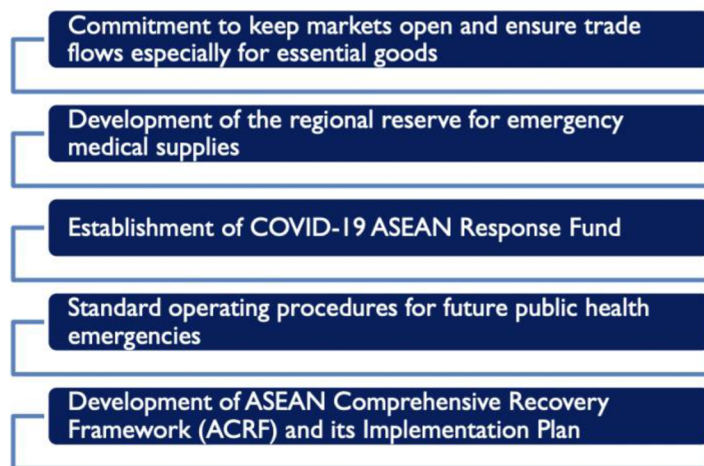
The dissemination of the COVID-19 virus continues to have tremendous effects on the economy of many countries in the world, as well as the ASEAN region. Following Purnomo et al. (2022), the average cumulative predictor of health protection in ASEAN nations is 47.73 out of 100 possible estimations. As each ASEAN member verified its first case, the outbreak was initially managed via the use of national preventative and control plans. They included health measures for preparation, prevention, monitoring, and detection, such as public health guidance on regular hand washing, appropriate use of facemasks, and other personal hygiene and sanitation measures. Public health measures for illness prevention, monitoring, detection, and response are among them. Kethryn and Salonga (2021) study the government strategies of ASEAN countries in addressing public welfare problems during COVID-19. The responses to the economic effects of the pandemic are outlined in three categories, including economic stimulation, monetary and fiscal policies, and exchange policies.

According to Kethryn & Salonga (2021), ASEAN countries have cooperated to address a variety of issues, including prevention in the health sector, economic response, and tourism and travel interventions. During the COVID-19 pandemic, regional health collaboration has been generated. In addition, through regional and country offices, WHO has been providing technical support to all member countries as well as the ASEAN region that were affected by the outbreak. Through its collaborations with other international organizations, the World Health Organization is able to update its COVID-19 materials as the situation evolves. Through the Epidemic Intelligence Service (EIS), Disease Outbreak News, and the WHO website, critical epidemiological data have been gathered, confirmed, and communicated with nations and partners. Various conventional and social media platforms (e.g., Facebook, Twitter, Instagram, etc.) are used to communicate public health risks and provide advice for foreign travel and trading (WHO, 2020c).

In response to the COVID-19 pandemic, ASEAN established the COVID-19 Response Fund, developed the ASEAN Regional Reserve of Medical Supplies for Public Health Emergencies, and the ASEAN Strategic Framework for Public Health Emergencies. These policies were designed to improve the regional bloc's ability to respond to future pandemics and health catastrophes. An overview of ASEAN reactions to the COVID-19 pandemic is shown in the figure below (ASEAN, 2020).



**Figure 2. A Summary of ASEAN Responses to the COVID-19**



*Source: The ASEAN Comprehensive Recovery Framework, 2020*

Different ASEAN countries have responded differently to COVID-19. Vietnam, for instance, a country with a population of more than 97 million, was a model for the COVID-19 pandemic response with limited resources in 2020. Vietnam emerged as one of the few nations to effectively contain COVID-19. Vietnam had only 2,420 cases and 35 deaths as of February 25, 2021 (Oanh et al., 2021). When COVID-19 became a threat, the government immediately authorized and severely implemented border restrictions. Contact tracing was comprehensive for all suspected COVID-19 cases. In terms of human resources, the Vietnamese government also recruited medical students and workers, social organizations, and the military (Willoughby, 2021). On the other hand, Myanmar, a lower-middle-income country, has been affected by COVID-19 all around the region. Some of the main challenges to preventing the epidemic are its insufficient health emergency preparedness, few testing centers, and reliance on other nations for testing kits. Myanmar has established community quarantine locations, contact tracing methods, COVID-19 screening and treatment standards for government hospitals, and fever clinics to screen individuals for COVID-19 symptoms (CPIGH, 2020).

### **2.3 Public health measures in Singapore**

Singapore has an excellent health policy because of its public-private balance of health sectors, sustainable financing, and strong regulatory governance. It ranks 12th in the World Index of Health Care Innovation in 2021, with an overall score of 49.71 (Girvan, 2022). Various national preventative and control measures were implemented during the outbreak of severe acute respiratory syndrome (SARS) in Singapore from 1 March to 11 May 2003 to control and eradicate the spread of the infection (Deurenberg-Yap, 2005). During the early stages of the SARS pandemic, public communication was carried out through press releases and media coverage of the outbreak. A public education campaign was launched around a month after the pandemic to educate Singaporeans about SARS and encourage them to adopt suitable behaviors to limit the spread of the disease.

After the pandemic of SARS in 2003, the DORSCORN framework was initiated by the Ministry of Health in Singapore (MOH). After that, when the H1N1 pandemic hit in 2009, the framework was refined again and was used to prevent and respond to the pandemic (MOH, 2020). MOH stated that the DORSCORN framework consists of a communication component to convey the health impact of the disease to the public and to advise people on how to respond. The 'Disease Outbreak Response System Condition,' or DORSCON5, is a color-coded framework that depicts the current disease situation (see figure 1), additionally, it also shows what needs to be addressed to prevent and mitigate the effects of infections.

Four statuses in the framework show the severity and spread of a disease which are green, yellow, orange, and red (see figure 3). Baker (2020) explained that at the green level, the spread is not easy from person to person. At the yellow level, the sickness is predicted to cause a minor public disturbance. Additional steps in the fight against the illness might characterize this stage. At the orange level, the disease is considered serious at this point since it spreads readily from person to person, but it has not traveled far and is being confined. Moderate disruption is expected due to precautions such as quarantine and visiting restrictions at hospitals.

**Figure 3. Disease Outbreak Response System Condition (DORSCON) Framework**

<b>DORSCON ALERT LEVELS</b> (Disease Outbreak Response System Condition)				
	<b>GREEN</b>	<b>YELLOW</b>	<b>ORANGE</b>	<b>RED</b>
<b>Nature of Disease</b>	Disease is mild <b>OR</b> Disease is severe but does not spread easily from person to person (e.g. MERS, H7N9)	Disease is severe and spreads easily from person to person but is occurring outside Singapore. <b>OR</b> Disease is spreading in Singapore but is (a) Typically mild i.e only slightly more severe than seasonal influenza. Could be severe in vulnerable groups. (e.g. H1N1 pandemic) <b>OR</b> (b) being contained	Disease is severe <b>AND</b> spreads easily from person to person, but disease has not spread widely in Singapore and is being contained (e.g. SARS experience in Singapore)	Disease is severe <b>AND</b> is spreading widely
<b>Impact on Daily Life</b>	Minimal disruption e.g. border screening, travel advice	Minimal disruption e.g. additional measures at border and/or healthcare settings expected, higher work and school absenteeism likely	Moderate disruption e.g. quarantine, temperature screening, visitor restrictions at hospitals	Major disruption e.g. school closures, work from home orders, significant number of deaths.
<b>Advice to Public</b>	<ul style="list-style-type: none"> <li>• Be socially responsible: if you are sick, stay at home</li> <li>• Maintain good personal hygiene</li> <li>• Look out for health advisories</li> </ul>	<ul style="list-style-type: none"> <li>• Be socially responsible: if you are sick, stay at home</li> <li>• Maintain good personal hygiene</li> <li>• Look out for health advisories</li> </ul>	<ul style="list-style-type: none"> <li>• Be socially responsible: if you are sick, stay at home</li> <li>• Maintain good personal hygiene</li> <li>• Look out for health advisories</li> <li>• Comply with control measures</li> </ul>	<ul style="list-style-type: none"> <li>• Be socially responsible: if you are sick, stay at home</li> <li>• Maintain good personal hygiene</li> <li>• Look out for health advisories</li> <li>• Comply with control measures</li> <li>• <b>Practise social distancing: avoid crowded areas</b></li> </ul>

Source: Ministry of Health Singapore (2009)

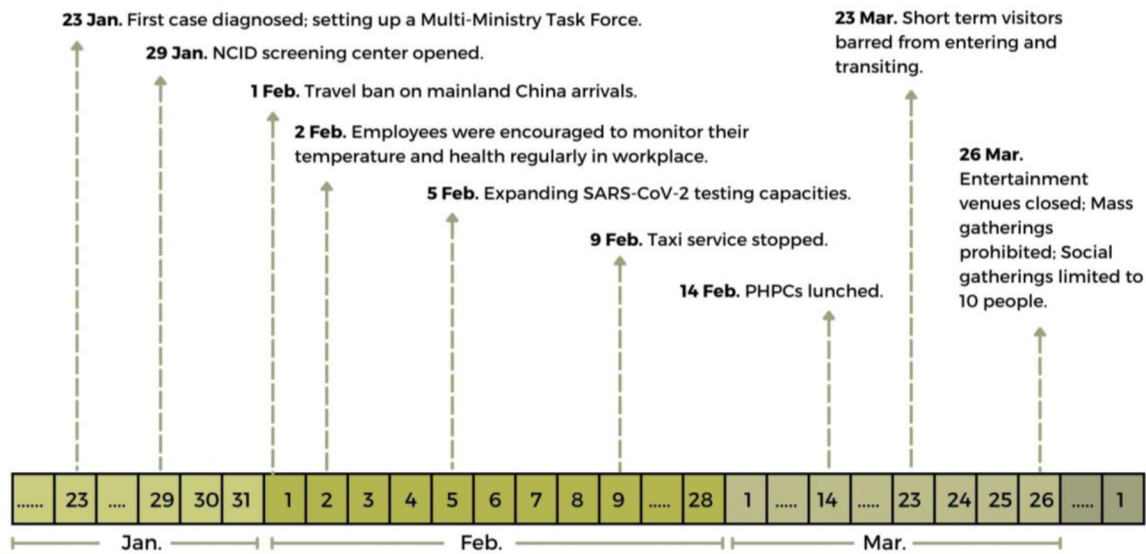
### ***Singapore’s public responses during the pandemic of COVID-19***

Relying on WHO (2021a), Singapore has adapted its public health policy immediately after the pandemic began, mainly innovating some initiatives and responses to the pandemic (e.g., a mobile application for contact tracing). The government has also adopted more inclusive measures to protect all individuals, for example, populations that are at-risk such as migrant workers living in dormitories. MOH (2020) mentions that Singapore adopted a three-pronged approach for an early pandemic, namely (1) reducing the spread from imported cases; (2) detecting and isolating cases early; (3) emphasizing and supporting social responsibility.

According to Wang et al. (2021), Singapore timely responded to the COVID-19 pandemic. After the diagnosis of the first infected case on 23 January 2020, the government set up a Multi-Ministry Task Force immediately. Then, the National Centre for Infectious Diseases (NCID) was opened, as well as border control measures, and social and community measures.

The government also expanded SARS-CoV-2 testing capacities and launched surveillance measures and Public Health Preparedness Clinic (PHPC). The approaches to reducing the COVID-19 transmission are illustrated in Figure 4.

**Figure 4. Initial implementation of control measures in Singapore, from January 2020**



Source: Author's visualization from Wang et al. (2021)

Taking into consideration the measures shown in figure 4, there are some key responses that the Singaporean government adopted during the early COVID-19 crisis. The Multi-Ministry Task Force preliminary plan, developed during the 2003 SARS outbreak, started on 23 January 2020 to coordinate across departments and deliver strategic and political direction throughout the public health crisis. On 29 January, the National Centre for Infectious Diseases (NCID) was established. This center has a 330-bed purpose-built for communicable disease management facility with integrative clinical, laboratory, and epidemiological capabilities, improving Singapore's outbreak control infrastructure. On the 1<sup>st</sup> of February 2020, Singapore began to enforce border control measures to prevent the importation of cases. These measures include checking incoming travelers' temperature, health screening, and entry restrictions from countries with active pandemic outbreaks (e.g., mainland China). Afterward, the social and community measures were broadened, with a particular emphasis on social responsibility, social precautions, public education, the use of masks and sanitizers, and the constant monitoring of employees' temperature and health. In addition, on the 5<sup>th</sup> of February, the National Public Health Laboratory's RT-PCR laboratory testing capacities were extended to all of Singapore's public hospitals, allowing over 8000 tests to be conducted daily. Moreover, Public Health Preparedness Clinic (PHPCs) was also launched to support the implementation

of respiratory infections in primary care, provide subsidized care and prolong medical leave by up to 5 days. Other measures included but were not limited to banning short-term visitors from entering or transiting in Singapore and the closing of establishments deemed as nonessential, like entertainment venues for example. Mass gatherings were prohibited, and social gatherings were limited to up to 10 people (Wang et al., 2021).

Singapore was remarkably responsive in terms of communication during the outbreak of COVID-19. After only 4 COVID-19 cases were reported by the Ministry of Health on Tuesday (February 4th, 2020), three days later (February 7<sup>th</sup>, 2022), Singapore's Disease Outbreak Response Condition (DORSCON) was upgraded from Yellow to Orange, indicating that the new coronavirus outbreak had a moderate to high public health impact (Quah, 2021). The Prime Minister, Lee Hsien Loong, addressed the nation on television the next day. According to all accounts, the message was an example of good communication and national leadership. The address informed the audience of Singapore's economic and social reserves, what was new in the risk posed by the new coronavirus, what precautions were in operation, and how individual Singaporeans might contribute.

In conformity with its status of being a highly developed technologically country, in March 2020 Singapore unveiled the “TraceTogether” app which is a national deployment of a digital contact tracking system based on Bluetooth to handle the COVID-19 outbreak. The TraceTogether Programme, created by the Government Technology Agency of Singapore (GovTech) in partnership with the Ministry of Health, consists of a mobile application and a portable device (token) that stores information on other smartphones that comes close to contact with the person’s smartphone. This assists the government’s procedure of “contact tracing”, which allows them to trace down anyone who may have come into touch with the virus and place them in quarantine. (Stevens & Haines, 2020).

The COVID-19 vaccination program started in Singapore on December 30, 2020, with free vaccines offered to all Singapore citizens in phases, beginning with the elderly and those in high-risk professions including healthcare workers (Chia et al., 2022). As of July 18, 2021, 6,794,394 vaccine doses had been provided, with 2,747,489 people (47 percent of the entire population) completed the vaccination course (Ministry of Health, 2021). After a decrease in new infectious cases, in August 2021, Singapore started to ease the travel restrictions from

some countries (e.g., Brunei and Germany), as well as planned Air Travel Bubble<sup>2</sup> with Hong Kong. It also planned to vaccinate children under 12 by early 2022 (Lin, 2021).

## **2.4 Concept of Communications and Perception**

Many scholars have attempted to provide a comprehensive definition of communication. Oxford Advanced Learner's Dictionary of Current English (2004) defines communication as the activity or process of expressing ideas and feelings or of giving people information. G.G. Brown. stated that "Communication is the transfer of information from one person to another, whether or not it elicits confidence. But the information transferred must be understandable to the receiver." (Kaur, 2020, pp. 2). Based on Keyton (2010), communication refers to the process of information transmission and mutual understanding from one person to another. In public health, health communication is the art and technique of informing, influencing, and motivating individual, institutional, and public audiences about important health issues (Healthy People, 2013).

Basic concepts of perception and communication (2009) hold the view that the conscious reception, selection, processing, and interpretation of information by our brain via all senses is referred to as perception. The term perception can also be used to describe what is perceived. McDonald (2012) suggests that perceptions, in general, are an individual's opinions that are often the result of experiences or external stimuli on the individual. Perception has been described as a means of understanding reality and experiences through senses, allowing judgment on the matter of figure, social behavior, and action. Perception is also extensively discussed in psychology (McDonald, 2012).

The ability to effectively communicate about risks is emerging as a top priority for local official health agencies (Sly, 2000). The findings of Sly (2000) indicate some facts on risk perception, including 1) People struggle to comprehend probabilistic data and risks involving very limited and large numbers; 2) People's risk-aversion tends to increase in response to uncertainty. However, probabilities can only be expressed in terms of uncertainty, and when presented with such statements, people frequently demand to know exactly what will happen, with "zero risk" becoming the goal; 3) People use a variety of heuristics or personal rules-of-thumb to help them assess risk, such as whether the risk is imposed, unforgettable, "feared," scientifically known, controllable, and so on; 4) People frequently substitute health, safety, or

---

<sup>2</sup> a temporary agreement between two nations to restart commercial passenger services after normal international flights are suspended because of the COVID-19 outbreak.



environmental risks for political, economic, or social issues; 5) The informal knowledge of technology that laypeople have is most likely underestimated.

Eysenbach (2002) mentioned that changes in information and communication patterns may lead to a negative or positive impact on a population's health, for instance, an outbreak of misinformation or public health campaign. Because people selectively decode information, when information conforms to an individual's own beliefs, values, and needs, they are more likely to perceive it favorably (Keyton, 2010). Ligo et al (2021) suggest that to increase individual and community responsibility in preventing the public from the pandemic, public health risk communication in response to COVID-19 should be transparent and address health equality and social justice. Savoia et al. (2013) hold the view that emergency communications are open to dispute, interpretation, and even misinterpretation by others. This necessitates real-time information analysis, which could help in the course correction of public health messages and lead to a more effective response.

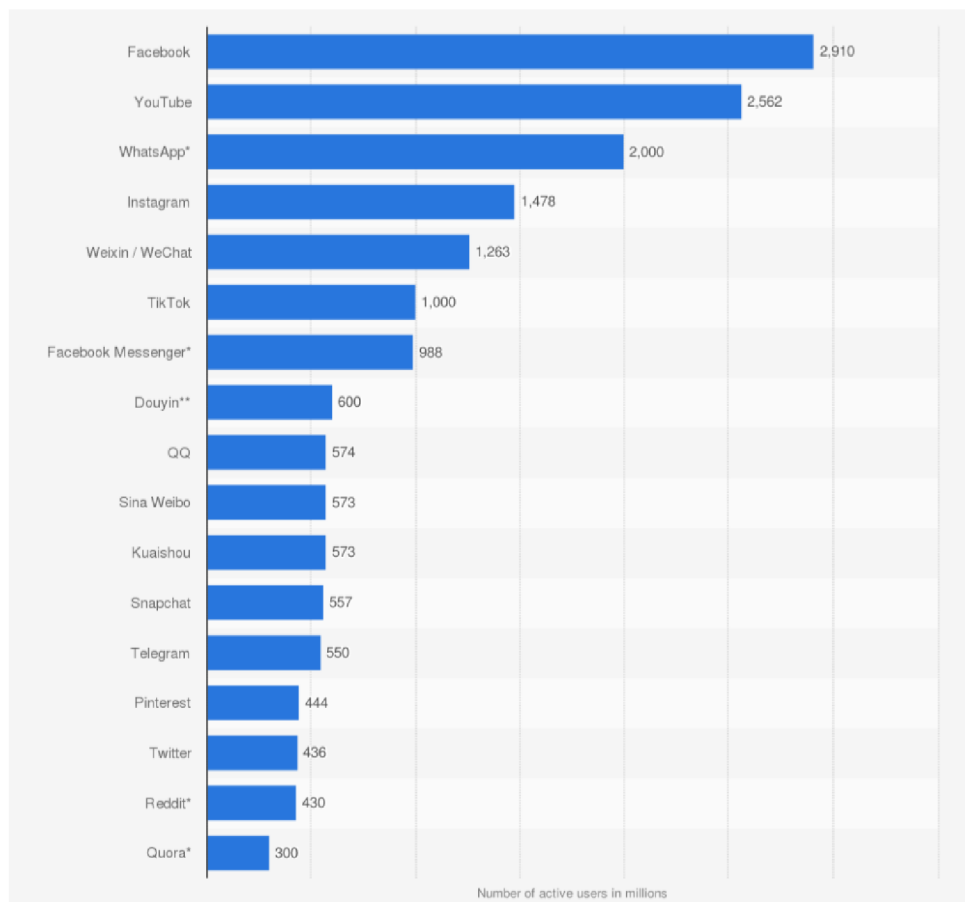
There have been many scholars who study channels of good communication and perception (Quah, 2021; Deurenberg-Yap, 2005; Lee and Li, 2021). Typically, signs such as words, images, gestures, scents, tastes, textures, and sounds are used to communicate. Regarding the aim, communication entails informing and/or sharing meaning (Basic concepts of perception and communication, 2009). Addressing public health issues requires effective communication, as well as understanding and appreciating differences in perception is essential for improving communication ability (Qiong, 2017; Rimal, 2009). Quah (2021) mentioned that the speech of Lee Hsien Loong, the prime minister of Singapore during the first stage of the pandemic was considered an example of good communication because the message has remained consistent, concise, and well-informed. The credibility is really strong. This has continued to assure the population and retain trust in the system. Deurenberg-Yap (2005) examines the Singaporean response to the SARS outbreak, focusing on knowledge sufficiency versus public trust. Public communication was undertaken through press releases and media coverage, as well as a public education campaign about SARS and encouraging people to adopt appropriate behaviors to prevent the spread of the disease. The finding showed that the general level of awareness regarding SARS and the control measures used was low. However, more than 80% of the general public believed that the preventative and control measures put in place were reasonable. Singaporeans have a high level of public trust in general (satisfaction with government, confidence in institutions, deeming government measures appropriate). One study by Lee and Li (2021) investigates the impact of organizations' transparent communication in fostering public trust and supporting health-protective behaviors (i.e., social distancing) during

the COVID-19 outbreak. It shows that information sustainability and transparency from the government enhance public trust, which has a beneficial impact on perceived risks, behavioral control, and subjective norms.

## 2.5 Concept of social media and Facebook

Social media is one of the most popular activities to do online. With the advancement of digital and mobile technologies, large-scale interactions became faster for individuals than ever before. As a result, a new era of media was established. A single person can communicate to a vast audience and receive immediate feedback (Manning, 2014). In 2020, over 3.6 billion individuals were using social media worldwide, a number expected to increase to nearly 4.41 billion in 2025 (Statista, 2022). On average, people in Latin America have the highest average time spent per day on social media. In 2022, Facebook became the most popular social media platform in the world, with a number of 2.9 million users per month (see figure 5), followed by YouTube and WhatsApp at 2.5 million and 2 million, respectively.

**Figure 5. Most popular social networks worldwide as of January 2022, ranked by number of monthly active users (in millions)**

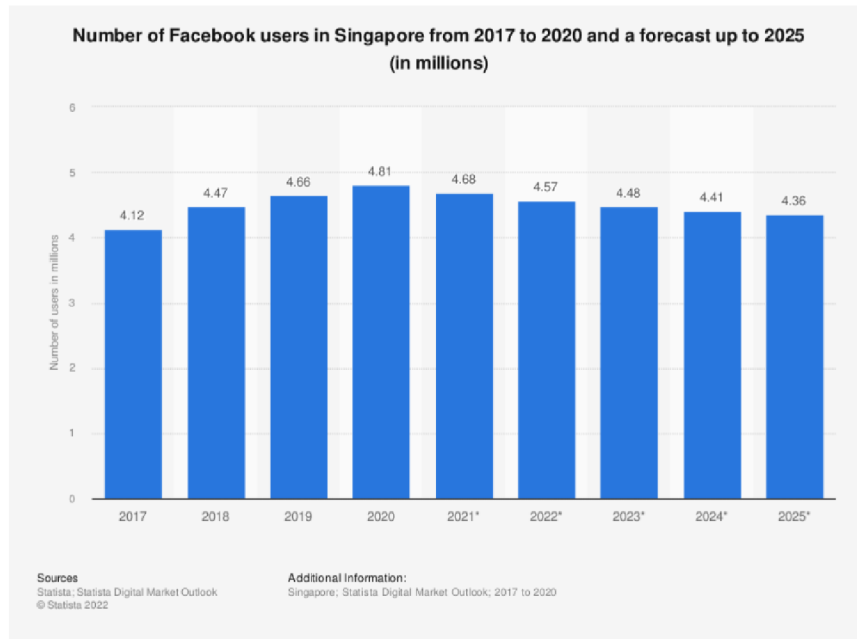


Source: Statista Digital Market Outlook (2022)



In the case of Singapore, the information from Statista (2022) shows that the number of Facebook users in Singapore is anticipated to diminish to 4.3 million by 2025, considering there are more competitors on the market. The number of users has been quite significant from 2020 to 2022, as shown in figure 6.

**Figure 6. Number of Facebook users in Singapore from 2017 to 2020 and a forecast up to 2025 (in millions)**



*Source: Statista Digital Market Outlook (2022)*

According to the study by global research consultancy TNS, conducted in 2015, Singaporeans are more connected on Facebook than ever before. On average, they spend most of their time on social networking, online shopping, and instant messaging (Meta for Business, 2015). The study revealed 4 main key trends as the following.

- 1) Digitally connected: Singaporeans outperform the worldwide average in online activities such as social networking, online shopping, and communication via email and instant messaging.
- 2) Mothers are super users: Singaporean mothers spend the most time on Facebook of any other demographic group and they spend more time on the platform than on any other sort of media.
- 3) Facebook is a TV companion: 1 in 4 Singaporeans use Facebook while watching television, spending 17 minutes out of a whole TV hour on their Facebook news feed.

- 4) Facebook is a discovery engine: Singaporeans use Facebook not only to stay up to date on news and interact with friends and family but also to find new products and brands.

According to Sabate et al. (2014), in the case of Facebook posts, the richness of content, including images and videos, increase the impact of the post in terms of likes. Correspondingly, images and publication time have a great influence on the number of comments, considering that the use of links reduces this metric. Facebook has a vital influence on people's daily life. Villota and Yoo (2018) studied the social influence produced by the content published on Facebook. By using Asch experiment<sup>3</sup>, they illustrated how social influence can change the behavior of Facebook users. After the experiment, they could identify "conformity", a type of social influence presented on online social networks, and how it can create changes in people's behavior. The study concluded that unintentional inputs in the online environments (such as the content we share on Facebook) can impact our people's thoughts, feelings, and behaviors.

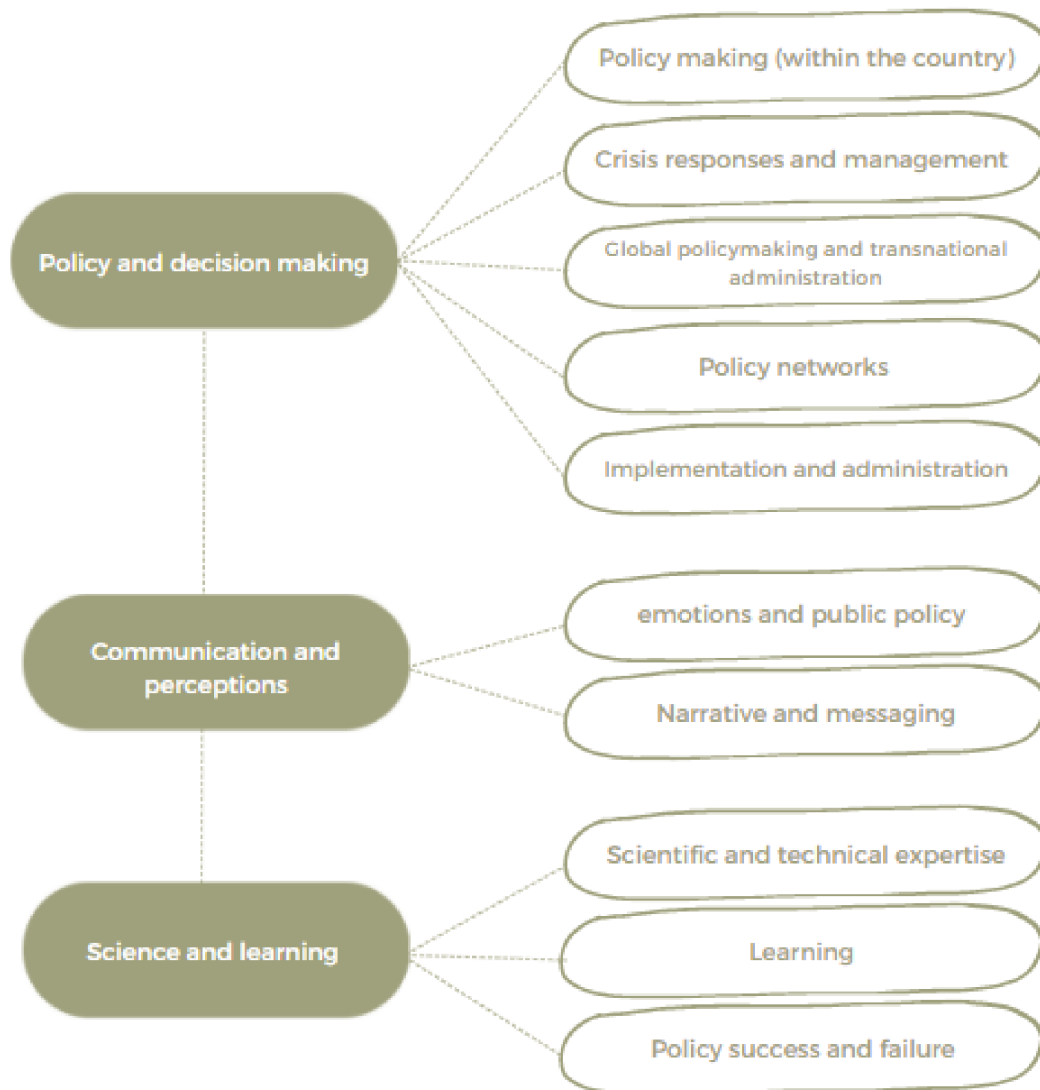
## **2.6 Theoretical Framework**

Djalante et al. (2020) navigate the responses of ASEAN (Association of Southeast Asian Nations) member countries to the COVID-19 pandemic and the limits of regional cooperation. They examine media statements and policies from ASEAN member states and the ASEAN Secretariat to assess the collective response to COVID-19 during the period from January to August 2020. The study breaks down 10 categories for examining the efficacy of governance strategies from Weible et al. (2020) based on Lasswell's original policy sciences framework (1956) into 3 main categories, including, a) policy and decision making; b) communication and perceptions; and c) science and learning. (See figure 7).

---

<sup>3</sup> An experiment to investigate the extent to which social pressure from a majority group may cause a person to conform

**Figure 7. Framework for investigating the efficacy of governance strategies**



*Source: Author's visualization from Djalante et al. (2020)*

The framework of Djalante et al. (2020) illustrates the strategies for the investigation of a governance's efficacy. The group of **policy and decision making** includes:

- Policymaking within the country: the traditional concept of public policy includes both government decisions and non-decisions. There are uncertainties about the length and expiration of policy choices. Non-decisions by the government become just as crucial as decisions. Public policies can assume "conventional" forms as a reflection of social values and goals, such as legislation, regulation, presidential order, municipal ordinance, and court judgment (among others). They can also take the shape of regularized choices made on the ground by frontline officials. In all these forms, public policies embody a

society's objectives, and they change society. Governments implement public policies in various ways. Because COVID-19 is a new virus, there is a great knowledge uncertainty and misunderstanding around it.

- Crisis responses and management: Responses take place at both the strategic and operational levels. Mitigating interpersonal conflicts generate public debate and blame games. Transboundary crises can both encourage and hinder collaboration. Crisis response and management are strongly intertwined with (1) public policies, such as the previous content and newly adopted policies, (2) interactions of individuals, groups, coalitions, and networks, and (3) contextual conditions, which include income levels, local interactions, and global-level decisions.
- Global policymaking and transactional administration: inequities cause disparities in policy responses, which, in turn, intensify inequalities. Global policy processes are being destabilized and reinforced. Uncertainty concerning the global professionals' center of authority and influence should be considered.
- Policy network: policy networks respond to and contribute to the movement in focus on policy concerns and altering government priorities. The aspects to be considered are policy and societal reactions influenced by prior policy networks, and the changes in the prominence of individuals and organizations in policy networks, as well as their relationships and resources.
- Implementation and administration: Implementation is challenged by administrative fragmentation and decentralization. Front-line employees use discretion and self-regulation. Co-production demands overcoming collective action barriers.

The group of **communication and perceptions** consists of 2 main components which are the followings.

- Emotions and public policy: Governments appeal to emotions to help legitimize policy responses and steer public reactions. Emotionally charged language can recall cultural and historical contexts. Policy responses force a reevaluation of the emotional spheres in societies. Djalante et al. (2020) mentioned that successful behavior change during COVID-19 includes creating trust in health authorities, recommendations, and information. Citizens' willingness to cooperate in social distancing and acknowledging the risks while keeping excellent hygiene and immune systems has been crucial in dealing with the outbreak.

- Narrative and messaging: Governments attempt to provide sufficient information in a timely manner to the public. Governments attempt to provide accurate information and non-contradictory to the public. Governments can spawn controversies by engaging in speculation. Governments, in general, strive to project force and model good governance to their citizens by demonstrating that "the government is taking action." However, when the communication is improper or inaccurate, it can imperil the public and encourage them to engage in undesirable behavior.

The last groups are **science and learning**.

- Scientific and technical expertise: Experts in science and technology are becoming more important in policy solutions to uncertain challenges. Governments rely on scientific and technical knowledge to inform and legitimate problems, interventions, and assessments. Scientific and technological skills can conceal decision-making responsibility.
- Learning: learning is essential to our ability to comprehend, influence, and handle complicated policy challenges. Learning may bring to light new concerns, challenge previously held assumptions, and contribute to the development of new policy responses. Things to be considered in the learning aspect are urgency enables the government to learn from the mistakes of others, learning manifests itself in several ways and various obstacles to learning.
- Policy success and failure: to examine the success and failure of policy, things to be looked at are who is impacted and how much they affect frames of success or failure. Decisions, procedures, and politics are used to determine success or failure. It is feasible to construct a success-failure spectrum. Success and failure are shaped by lenses and narratives.

From the framework of Djalante et al. (2020), this study specifically touches on communication and perceptions by focusing on Singapore's case of public policy for COVID-19. According to Djalante et al. (2020), communication and perceptions of public policy consist of 2 main elements which are emotions and public policy; and narrative and messaging.

Overall, this chapter provided a critical overview of health policy in general, in different parts of the world and Singapore. It also delved into a policy on transmitted diseases, epidemics, and pandemics. The available communication research highlighted the channel or strategy of how information can be transformed more efficiently. There was also literature that

features the perception of the citizens toward the health policy of the government. The end of the chapter illustrated the theoretical framework and some reviews on social media, especially among Facebook users in the world and Singapore.

## Chapter 3

### Objective and Methodology

#### Overview of the chapter

The selected methodology for this study is qualitative because it is adequate for the analysis of communication, which adopted the thematic analysis. This section presents and explains the adopted methodology and the data requirement. It starts with a discussion of the research approach (3.1). The following subchapter (3.2) covers the description of the data which includes data source, sample design, and data analysis. The discussion of the issue surrounding the adoption of the methodology was included in (3.3), the evaluation of the research process.

#### 3.1 Research Approach

This study used qualitative thematic analysis as this is suitable for answering the research questions. Thematic analysis is a tool for identifying, analyzing, and reporting patterns (themes) in data. It nominally organizes and explains the data collection in (rich) detail (Braun and Clarke, 2006). The method summarizes media contents to identify the communication of measures adopted by the Singaporean government during the responses to the COVID-19 pandemic from January to August 2021. The research questions of the study are as follows.

1. How was the public policy on COVID-19 communicated?
2. What are the emotions and perceptions of the citizens of the COVID-19 policy?

Based on the study of Djalante et al. (2020), This study focuses on the area of Communication and Perceptions of public policy for COVID-19 in Singapore which comprises: (1) Narratives and messaging and (2) Emotions and public policy. The study uses Singapore's case to investigate policy communication and perception as Singapore is a country that has been ranked the 18th of highest COVID-19 resilience in the world and the 12th ranking in the World Index of Health Care Innovation in 2021, which is the first rank in ASEAN region (Bloomberg 2021; Girvan, 2022).

## 3.2 Data Description

### 3.2.1 Data Source

The data that was analyzed in this study is secondary data collected from a social media platform (i.e., Facebook) given it's the most popular platform in Singapore. According to a survey conducted in Singapore from the end of January to February 2021, 83% of Singaporeans receive their news online, including through social media, as opposed to 27% that read their news through print media, i.e., printed newspapers (Hirschmann, 2021). The study by global research consultancy TNS, conducted in 2015, also shows that Singaporeans are more connected on Facebook than ever before. On average, they spend most of their time on social networking, online shopping, and instant messaging (Meta for Business, 2015).

### 3.2.2 Sample Design

The study identifies two notable news organizations in English which are **Channel News Asia (CNA) and The Strait Times**. Reuter Institute Digital News Report 2021 written by Newman et al. (2021) reveals that these 2 news organizations are the highest online usage and the most trusted in Singapore, trusted by 79% and 77% respectively. Channel News Asia (CNA) is a multinational newspaper that includes Asia and Oceania, operated by a Singapore company. It is one of the most popular newspapers in Singapore which has 3,913,714 followers on Facebook as of April 4, 2022 (CNA, 2021). In addition, The Strait Times is a daily newspaper that is recognized as one of the outstanding English-language papers of the Far East (Britannica, 2017). It has its own physical and online newspaper where it updates daily news in general and about COVID-19. It also has social media platforms (i.e., Facebook, Instagram, and Twitter). The Straits Time Facebook Page has more than 1,766,458 followers as of March 5, 2022 (The Strait Times, 2021).

For the sample selection, the study extracted the Facebook posts from CNA and The Strait Times between January 1<sup>st</sup> to August 31<sup>st</sup>, 2021. In addition to it, after coding and clustering all the data into themes, comments on certain themes were collected to analyze the emotions and perceptions of the citizens toward the COVID-19 policy. The study did not go through the links in the posts since the content in the links was already summarized in the posts' descriptions. Criteria for sample selection are shown in table 1.



**Table 1. Criteria for the inclusion of the Facebook posts and comments of CNA and The Strait Time into the sample**

Criteria of the Facebook posts:	Criteria of comments
<ul style="list-style-type: none"> <li>• Must be related to COVID-19 (contain the keyword “COVID-19” or “Covid”)</li> <li>• Must be in the timeframe (January to August 2021)</li> <li>• Relevant posts to other countries are included.</li> <li>• Posts that contain links are included.</li> </ul>	<ul style="list-style-type: none"> <li>• Only comments that are related to the contents of the posts</li> <li>• Comments that refer or compare to other countries are excluded.</li> <li>• Only the main comments, the replies to the comments will be excluded.</li> <li>• Only comments that use understandable language (contains abbreviation, words such as “liao”, “ppl”, “lah”, “meh”, “dun”, “sabo”, “fk”)</li> <li>• Comments that contain links will be excluded.</li> </ul>

### 3.2.3 Data Analysis

For the data analysis in this study, thematic analysis was used, which was conducted through four steps as follows.

- 1) **Data preparation and organization:** a Facebook Python scraper coded by kevinzg<sup>4</sup> was used to crawl all the Facebook posts published on CNA’s and The Strait Times’ pages from the 1<sup>st</sup> of January to the 31<sup>st</sup> of August. The total number of posts for CNA is 993 and 1033 for The Strait Times (see table 2). After extraction of the posts, they were gathered in an Excel sheet. The sheet contains the list of the posts with the description of the post that was used in the qualitative analysis, the date of the post, number of reactions, number of shares, URLs of the posts, and links that the posts contained. The number of reactions and shares can determine the popularity and attention of the posts.
- 2) **Data review:** review and filter the posts that do not meet the criteria. A total of 1,575 posts were removed since they were not related to COVID-19, leaving a total of **451** COVID-19 related posts from both news organizations for the analysis.

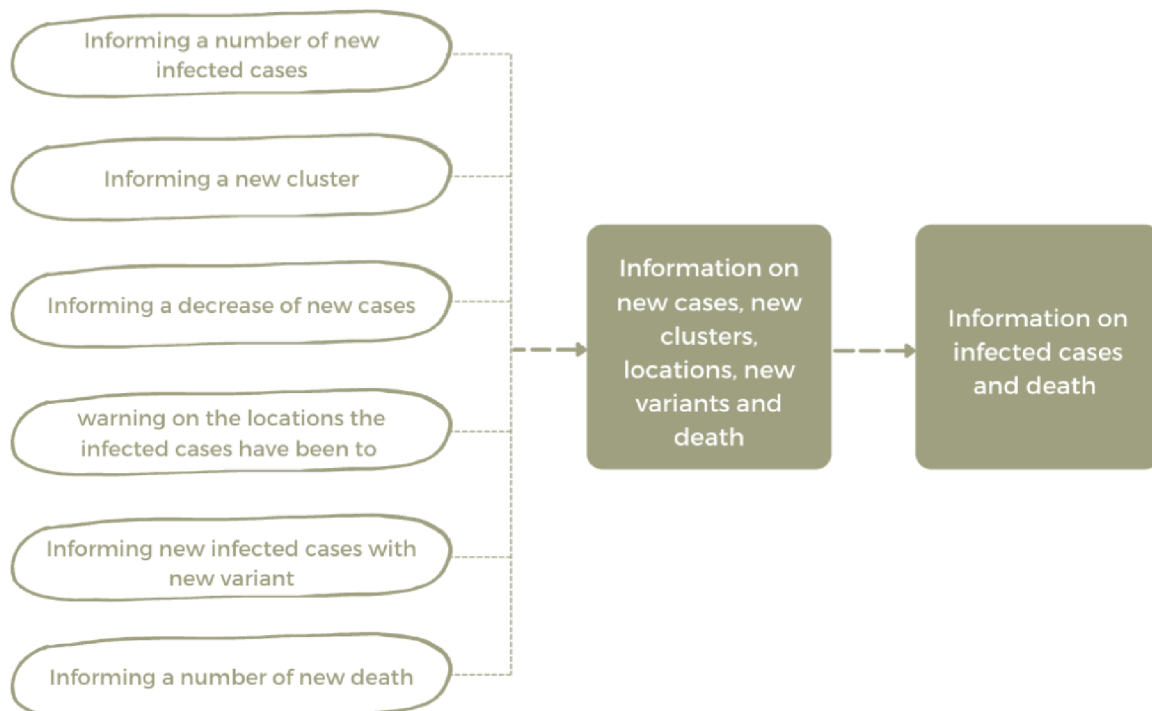
<sup>4</sup> the username of a coder name Kevin Zúñiga who publicly shared his facebook-scraper on Github. Github is a code hosting platform for version control and collaboration. It lets you and others work together on projects from anywhere.

- 3) **Assignment of codes to the data:** After filtering out the irrelevant posts, the author first read all the posts and generates the first set of codes.
- 4) **Identification of recurring themes:** after coding all the posts, all the similar codes were combined and put in clusters with labels. After that, they were put into analytical themes as shown in figure 8.

**Table 2. Facebook Posts of CNA and The Strait Times from January to August, 2021**

Facebook Pages	CNA	The Strait Times	Total
Total number of posts	993	1,033	2,026
COVID-relate posts	<b>240</b>	<b>211</b>	<b>451</b>
Total number of Likes	142,361	127,908	270,269
Total number of comments	31,429	27,975	59,404
Total number of shares	35,454	39,296	74,750

**Figure 8. Schematic formulation of a theme from the codes captured from posts.**



Source: Author's visualization (2022)

Figure 6 illustrates an example of how a theme was generated. After coding all the posts, similar codes were combined. For instance, informing several new infectious cases, new deaths, new clusters, new variants, a decrease of new cases, and risk locations. All those codes were put in a cluster with a label as “information on new cases, new clusters, locations, new variants, and deaths”. Finally, the cluster was put in a theme as “information on infected cases and deaths”.

The author reviewed the themes of the posts through the theoretical framework that was used in the study and identified commonalities and differences regarding the narrative and messaging perspective. The analysis of the Facebook posts from CNA and the Strait Times resulted in seven themes: (1) Information on infected cases and deaths, (2) Information on vaccination, (3) Recommendations, (4) Measures, (5) Promoting responsibility and togetherness, (6) Impacts of COVID-19, (7) Information on other countries.

The study then selected two themes which were theme (3) recommendations and (4) measures, to investigate the emotion which refers to the trust in measures, health authorities, recommendations, and information. The willingness of Singapore citizens to cooperate with the measure of COVID-19, namely, travel restriction, social distancing, and understanding of maintaining good hygiene and immune systems. The total number of comments in the posts on the two themes is **4,990**. After applying the criteria of the analysis, **1,390** comments were selected to analyze, using the same steps as analyzing the posts. As the result, the analysis of the comments on Facebook posts in two categories (measures and recommendations) from CNA and The Strait Times concluded in six themes: (1) Agreeing with the measures and recommendations, (2) Disagreeing with the measures and recommendations, (3) Providing suggestions on measures and recommendations, (4) Questioning the measures and recommendations, (5) Trust and appreciation toward the government and the country, (6) Unappreciation toward the government.

In addition, if the posts were made during any particularly critical period, they will be noted. For instance, before, during, or after new restriction measures. The content of the posts and the number of likes, other reactions, and the number of shares were derived from April 25, 2022, as they appeared at the time of data extraction. It is feasible that some posts were later removed, or that the number of likes and shares, and the comments on the posts have changed after the publishing date.

### **3.3 Evaluation of the research process**

#### **3.3.1 Limitations of data**

The research used a qualitative approach (thematic analysis) to provide a deeper understanding of the communication and perceptions of the COVID-19 policy in Singapore. The study relied on secondary data sources to analyze. The limitations of this study that influence the transferability, significance, and weight of the analysis of the findings are the sample since the study may not carry out the massive data on various platforms, namely newspapers, government websites, and other sites of social media. The study only gathers data from the most popular sites (Facebook) in Singapore at a specific time. It may not cover most of the data or the posts and comments may be later changed or removed after the publishing date.

#### **3.3.2 Ethical Consideration**

Ethics is a crucial aspect to be considered in every research. For this study, anonymity and confidentiality are the main ethical consideration. All the Facebook usernames were not collected. On the other hand, the comments that contain references to other people's names will also not be taken due to the confidentiality consideration.

## Chapter 4

### Results and Discussion

#### Overview of the chapter

This chapter showcases the results of the data analysis with the discussion. It goes deep into answering the research question of how the COVID-19 policy has been communicated through the Facebook posts of CNA and The Strait Times from January 1 to August 31, 2021, and what are the emotions and the response of Singaporeans to the policy based on the Facebook comments.

#### 4.1 The communication and perceptions of COVID-19 public policy in Singapore based on Facebook posts of CNA and the Strait Times.

##### 4.1.1 The narrative and messaging

The analysis of the Facebook posts from CNA and the Strait Times resulted in seven themes: (1) Information on infectious cases and deaths, (2) Information on vaccination, (3) Recommendations, (4) Measures, (5) Promoting responsibility and togetherness, (6) Impacts of COVID-19, and (7) Information on other countries. Below, the study discusses the seven themes, which present how the COVID-19 policy has been communicated through these channels.

##### (1) Information on infectious cases and deaths.

The analysis of CNA and The Strait Times reveals important information on infectious cases and deaths. They emphasize new clusters that happened at different times and locations, as well as places where the infected have been, in order to raise more awareness to warn people to be more careful. These Facebook posts from CNA and The Strait Times, posted when new clusters happened, showed the name of the place where the new cluster occurred (Tampines Bus Interchange) and several new cases linked to those clusters.

*“46 of the new COVID-19 cases are linked to 8 active bus interchange clusters, including a new one at Tampines Bus Interchange.” (CNA, 8.30.2022)*

*“More than 40 students and pupils in Singapore have come down with Covid-19. Experts say the infections are likely due to them being in cluster settings, such as the tuition center or a school bus.” (The Strait Times, 5.22.2021)*

During the advent of a new variant, the two news organizations had been updating it closely and timely which aligns with the narrative and messaging component in communication and perceptions (Djalante et al., 2020), namely governments attempt to provide sufficient information in a timely manner to the public. For instance, when the Delta variant arrived in Singapore, it started to quickly spread in June 2021. On the 19th of June 2021, the CNA made the following post reporting new infectious cases of the Delta variant.

*“More than 400 local COVID-19 cases have been confirmed to have the more infectious Delta variant.”* (CNA, 6.19.2021)

In addition to that, the two organizations also informed the audience when the number of new cases decreased, thus decreasing public fear and panic. This Facebook post by the CNA, shared soon after the new infected COVID-19 cases had dropped, shows hope from the decrease of new infectious cases with the keyword “lowest number” (June 28, 2021):

*“This is the lowest number of new COVID-19 community cases reported in Singapore in more than 2 weeks.”* (CNA, 6.28.2021)

The number of deaths has also been reported by CNA and The Strait Times. The news organizations also reported more useful information from the government related to certain deaths. This post from CNA reported the first death from COVID-19 in Singapore, which indicated that even people who had been vaccinated could also die from COVID-19 due to the other chronic diseases they had previously before the infection. This encouraged people to be more aware of the disease, even though they had already been vaccinated.

*“This man is the first person who was fully vaccinated to die of COVID-19 complications in Singapore. He had a history of chronic kidney disease and hypertension, said MOH.”* (CNA, 8.17.2021)

In contrast to the earlier findings, there is some evidence that the government provided unclear information and invertedly ended up creating opportunities for unwanted public fear and panic, which does not align with the theoretical framework of Djalante et al. (2020). A notable example is presented in a post by the Strait Times on June 18, 2021, below.

*“The current active Covid-19 clusters in Singapore are spread across the island, with no discernible pattern of high rates of infection in any particular geographic region.”* (The Strait Times, 6.18.2021)

The post reports on the active COVID-19 clusters spread across the country without any identification of high-risk locations. This may create a generalized panic and concern for the citizens, as well as a lack of trust in the government.

## **(2) Information on vaccination.**

The CNA and The Strait Times' posts also divulged information on vaccination which is of the utmost importance to address the COVID-19 outbreak. This theme includes the number of people who registered for vaccination, people who were already vaccinated, full vaccination certificates, vaccination policy, types of vaccines, as well as research and development of the vaccine. For instance, several posts mention the information on vaccination criteria, such as who can get a certain type of vaccine, where and when, and who is included in the so-called "risk groups" (i.e., children, pregnant women, and elderly people). The post below reports an announcement by Singapore's health minister on the type of vaccine and the people in those groups.

*"People in Singapore who cannot take Moderna or Pfizer vaccines but wish to get vaccinated against COVID-19 will be able to get access to alternate vaccines under a special access route, announces Health Minister Ong Ye Kung.*

*Singapore health authorities also gave the go-ahead for pregnant and breastfeeding women and cancer patients to get COVID-19 vaccinations."* (CNA, 5.31.2021)

In addition, the government of Singapore also provided additional information on the efficiency of the vaccine to encourage more people to get vaccinated. The post below by the CNA on 18th May 2021, is a good example of this as it shows a statement by a health expert in Singapore declaring that only the first dose of vaccine already provided reasonable defense against the virus, which might have encouraged citizens to adhere to the vaccination program.

*"The first vaccine jab already offers good protection against COVID-19, says one public health expert."* (CNA, 5.18.2021)

Lee and Li (2021) found that information sustainability and transparency from the government enhance public trust, which has a beneficial impact on perceived risks, behavioral control, and subjective norms. This is in accordance with the Singaporean's government transparency to its citizens through a provision of accurate and transparent information on vaccine imports and distribution. The citizens were well informed on where the vaccines came from and how to get access to them. This can be seen in a Facebook post of the Strait Times on June 26, 2021, when the government announced it imported vaccines from Belgium.

*"The Pfizer-BioNTech and Moderna Covid-19 vaccines go through a complicated and ultra-cold journey from Belgium to Singapore. Here's a look at the distribution process.*

*Track the progress of Singapore's vaccination program with our interactive."* (The Strait Times, 6.26.2021)

### **(3) Recommendations**

The CNA and The Strait Times' posts reveal the recommendations from the government during the COVID-19 outbreak. The recommendations include recommendations on vaccination (appropriate type of vaccine for different population groups), recommendations on COVID-19 test, the symptoms related to COVID-19, and how to prevent yourself from catching the virus. This post made by The Strait Times (May 19th, 2021), demonstrates a recommendation about masks from the ministry of health Singapore.

*“Masks with high filtration capabilities should be worn to protect yourself in the fight against Covid-19, said MOH.*

*It is also important to wash your reusable mask regularly, as it could contain microbes and respiratory droplets after being worn for prolonged periods”* (The Strait Times, 5.19.2021)

Moreover, such references to recommendations also reflect attempts to inform people on how the virus can be spread and how to avoid contracting the virus. The Strait Times shared some information on the spread of COVID-19 (May 26, 2021).

*“Covid-19 can be spread by virus aerosols in enclosed environments that are poorly ventilated. Here’s how you can prevent the spread by improving ventilation and air quality indoors. <https://str.sg/3kGG>”* (The Strait Times, 5.26.2021)

*The message is clear with an attached link for further information for the audience. This aligns with an element in the narrative and messaging of the framework by Djalante et al. (2020), governments that transparently communicate sufficient and accurate information can gain public trust during the pandemic.*

### **(4) Measures**

In their posts, the CNA and The Strait Times increased the governmental responses to the pandemic. The measures adopted during that period were travel restrictions, COVID-19 temperature checking, and monitoring at the airports, offices, businesses, and so on. This Facebook post by the CNA was shared during the phase when COVID-19 spread rapidly all around the world. The post contains the government measure on travel restrictions for incoming travelers from a high-risk countries like South Africa (January 1, 2021).

*“JUST IN: Singapore will not allow entry of all long-term pass holders and short-term visitors with recent travel history to South Africa, stepping up measures against a new COVID-19 strain.”* (CNA, 1.1.2021)



The Strait Times regularly updated government announcement's regarding new measures for COVID-19. For example, this post by The Strait Times illustrates a real-time (Facebook live) of the government's speech on August 29th, 2021, receiving a high number of likes (2,400 likes). After the Facebook lives had ended, The Strait Times made a post immediately. The post contains a graphic picture illustrating 3 main issues and solutions highlighted in the government's speech (see figure 9), with a link to the news website so that the audience can read more in-depth.

*“AT A GLANCE: PM Lee highlighted 3 issues that were deepened by the Covid-19 pandemic. Here's how Singapore will address those issues and refocus on the future. <https://str.sg/3i9S>”* (The Strait Times, 8.29.2021)

**Figure 9. The Strait Times' Facebook post on August 29th, 2021.**



*Source: Facebook, The Strait Times (2021)*

The real-time information from the post above parallels with Savoia et al. (2013) who mention that emergency communications are open to dispute, interpretation, and even misinterpretation by others. This requires real-time information analysis, which could help in the course correction of public health messages and lead to a more effective response. The post also contains the picture which aligns with Sabate et al. (2014) finding, that in the case of

Facebook posts, the richness of content, including images and videos, increases the impact of the post in terms of likes.

#### **(5) Promoting responsibility and togetherness.**

Analysis of the Facebook posts by the two organizations reveals strong messages aiming to promote responsibility and togetherness. COVID-19 has affected the health and the economy of the country. The measures to deal with the COVID-19 pandemic need to be abided by the citizens. A post by CNA on May 22, 2021, demonstrates the clear promotion of togetherness from Singapore's ministry of education. It contains the sentence "we need to work together", which further exemplifies the need for the citizens to work with the government and not against it.

*"The COVID-19 cases at ACS (Junior) are a "clear reminder" that "we need to work together to keep schools safe", says the Ministry of Education, Singapore." (CNA, 5.22.2021)*

Addressing public health issues requires effective communication. Understanding and appreciating differences in perception is essential for improving communication ability (Qiong, 2017; Rimal, 2009). As COVID-19 is a contagious disease that can spread easily, a high percentage of the vaccinated population can help to achieve herd immunity in the country. In a Post, the Strait Times published a statement from Singapore's Health Minister on vaccination. His speech reveals an appreciation of the diversity in the country and his desire to raise awareness of collective responsibility "Let's all push it up further" (June 19th, 2021).

*"About 36% of Singapore's population have completed both Covid-19 vaccine doses, said Minister Ong Ye Kung, adding: Everyone has equal rights to get the vaccine. We are diverse in race, but we are all SINGAPORE "Let's all push it up further." (The Strait Times, 6.19.2021)*

#### **(6) Impacts of COVID-19**

In their posts, the CNA and the Strait Times present impacts of COVID-19, mainly the economic impacts such as the effects of COVID-19 on small businesses in the country, the high rate of unemployment, and the shortage of certain goods. Not only that but the impacts on health and well-being were also noted. The below post from The Strait Times demonstrates how the government's measures to contain the COVID-19 impacted a local business (May 22nd, 2021).

*“Stars like Jeanette Aw, Marcus Chin and Chew Chor Meng had their F&B business plans hit a snag due to tightened Covid-19 measures. Here’s a look at how they are coping.”* (The Strait Times, 5.22.2021)

In Singapore, according to The Strait Times’ Facebook posts, COVID-19 not only affected the economy of the country but also people’s health. On March 11th, 2021, The Strait Times gave a portrayal of a COVID-19 patient that still experienced serious symptoms of the disease, even though it had already been 5 months since he had been infected. This post raised more awareness of how serious the long-term effects of COVID-19 can be.

*“I don’t recognize myself, my family doesn’t recognize me either. I’m not the person I was,” said a patient who still has difficulty breathing and walking after contracting Covid-19 five months ago.”* (The Strait Times, 5.11.2021)

### **(7) Information on other countries**

From the Facebook posts, the two news organizations delivered not only COVID-19 information related to Singapore but also updates on the pandemic situation in other countries. The main components that emerged from the two news organizations’ posts are the information on other countries to draw attention to the seriousness of the situation. For instance, this post from the CNA on February 25th, 2021, reporting on the average number of deaths from COVID-19 in Brazil shows how deadly the disease is.

*“Brazil has averaged 1,149 deaths from COVID-19 over the past 7 days.”* (CNA, 2.25.2021)

The posts about other countries cooperating with Singapore in response to the COVID-19 pandemic provided an opportunity for the country to have a favorable image on the international stage. A good example of this is a post from The Strait Times on March 15th, 2021, about Australia and Singapore’s interest in developing a digital COVID-19 vaccine passport. The post gained much attention from the citizens, displaying a high number of likes.

*“Australia wants to work with Singapore to develop a digital Covid-19 vaccine passport system that would enable a travel bubble between both countries by the middle of the year.”* (The Strait Times, 3.15.2021)

Analysis of the Facebook posts by the CNA and The Strait Times also reveals warnings from the world's largest health organization - WHO. This post from The Strait Times on March 6th, 2021, intends to caution the public around the world not to neglect the impact of COVID-

19 after vaccines have been put in place. Future waves of outbreaks could still happen again if people take immunization for granted.

*“WHO warned that further waves of the Covid-19 pandemic could be on the way if people think the roll-out of vaccines around the globe would end the crisis.”* (The Strait Times, 3.6.2021)

#### **4.1.2 The emotion and public policy**

The analysis of the comments on Facebook posts in two themes (measures and recommendations) from CNA and the Strait Times resulted in **six** themes: (1) Agreeing with the measures and recommendations, (2) Disagreeing with the measures and recommendations, (3) Providing suggestions on measures and recommendations, (4) Questioning on the measures and recommendations, (5) Trust and appreciation toward the government and the country, (6) Unappreciation toward the government.

##### **(1) Agreeing with the measures and recommendations**

Analysis of Facebook comments and posts in recommendations and measure's themes by the CNA and The Strait Times reveals a strong consensus with the measures and recommendations from the government. When there were new measures and recommendations announced by the governments during the time of the study, 207 comments agreed with them, showing not only trust in governmental responses to the outbreak, but also the willingness to cooperate with the measures. This aligns with Djalante et al. (2020) that stated successful behavior change during COVID-19 includes the trust in recommendations and citizens' willingness to cooperate. The following comment on a post by The Strait Times on May 30th, 2021, about the recommendation from the ministry of health that anyone with Covid-19 symptoms should seek help early - preferably when symptoms first appear. The comment clearly illustrates the willingness to collaborate with the recommendations:

*“For me, as long if I keep sneezing even after I took my balance medication given by doctor then I will see doctor again and start my stay home and be good citizen”* (Facebook, recommendations and measures, 5.30.2021)

At the same time, when there were announcements from the government to ease the COVID-19 restrictions (e.g., lifting travel restrictions, allowing restaurants to have customer dine-in, opening schools, and allowing working in offices), most of the Facebook user's comments agreed with the easing of the lifting of said restrictions as they believe it would help

the economy of the country recover. The comment below replied to the post of The Strait Times on August 10th, 2021:

*“We have to remember that we are opening borders not because covid situation is getting better globally, but because we have to do so for economic reasons.”* (Facebook, recommendations and measures, 8.10.2021)

Other comments illustrate a strong agreement with the sanctions faced by citizens who violated the restrictions. This type of post got a good deal of attention from the audience and received even more comments agreeing with the government’s actions. The comment below is a reply to a post by the CNA on July 15th, 2021, when the government sentenced a man to 6 weeks in jail for violating COVID-19 restrictions. It shows an individual’s endorsement of the government’s punishment of people who violated the restrictions.

*“He has been in remand since June 19. Now he was being sentenced to 6 weeks in jail. This is what he deserves. The government did a good job.”* (Facebook, recommendations and measures, 7.15.2021)

## **(2) Disagreeing with the measures and recommendations**

The comments on Facebook posts, however, show that on some occasions the public did not fully agree with the government’s measures and recommendations. Some of these measures, to some extent, were not fully trusted by citizens, and this raised public concern. On June 10th, 2021, The Strait Times posted a question related to the easing of restrictions imposed on restaurants. Singapore was experiencing a high number of infections at that time, which raised concerns from the citizens who consequently left significant negative feedback. One of the examples in the comment below:

*“Better extend another few months. Do not take a great risk...anything wrong, no sorry and no cure. It is for our safety, hygiene, cleanness, talk less outside, prevent from going out often eating out will mostly catch the covid-19 virus. Think before we eat out and ensure we keep safe rather than sorry.”* (Facebook, recommendations and measures, 6.10.2021)

Keyton (2010) points out that people selectively decode information, when information conforms to an individual's own beliefs, values, and needs, they are more likely to perceive it favorably, which aligns with the Facebook comments on a post from CNA on the 9<sup>th</sup> of August 2021, below. Singapore’s government has adopted various measures throughout the pandemic and even though those measures were good, some people were still not satisfied and did not agree with them. CNA published a post, informing that there were currently seven COVID-19

community care facilities in Singapore that could accommodate more than 5,500 people. More than half of the audience agreed and appreciated the government's effort. However, several people disagreed with it. For example, the comment below is a clear example of someone who is clearly against these facilities. It shows how different individual beliefs may lead to perceiving things differently.

*“Government still wants to lock you up if you are positive, they cannot trust people to quarantine at home. So, you see these facilities being ready. This kind of preparations is not sustainable, we have to, one day treat the virus like catching a flu, you take medicine, and rest at home. But people don't bother to stay home pre-pandemic days when given medicine”* (Facebook, recommendations and measures, 8.9.2021)

### **(3) Providing suggestions on measures and recommendations**

The comment also demonstrates suggestions on points that need improvement, as well as new measures that the citizens would like the government to consider, such as travel restrictions, vaccination, and punishment for rule violations. For instance, the following comment is a response to a post by The Strait Times about the government's willingness to relax the restrictions on social gatherings (May 31st, 2021), it also contains a suggestion to make vaccination compulsory (including for vulnerable groups), to gain herd immunity:

*“Vaccine should made compulsory since all are good to vaccine including pregnant women, breastfeeding women, cancer patients, etc.”* (Facebook, recommendations and measures, 5.31.2021)

In addition, the most remarkable comments are citizens' proposals for the government to support frontline workers, poor households, and small businesses that were affected by COVID-19. For example, this response was made on a post from the CNA on the speech given by the prime minister, Lee Hsien Loong. In his speech, he mentioned that Singapore was under control and should be able to ease the restrictions if community cases continued to fall (June 9th, 2021). The comment also clearly suggests that additional measures need to be taken by the government and some concern towards the lift of restrictions:

*“Firstly, give 100% subsidiary for hawkers and business owners. Because of these periods, they are making a loss. Second, please make subsidiaries for all SINGAPOREANS on their water/power bills, also reduce your public transport services fares. Give more benefits to the frontline workers who put themselves at risk. Third, please close the borders for not bringing in from India.”* (Facebook, recommendations and measures, 6.9.2021)

#### **(4) Questioning the measures and recommendations**

Analysis of the comments of Facebook posts on recommendations and measures' themes by the CNA and The Strait Times reveals a lot of confusion and questioning regarding COVID-19 measures and recommendations from the government. When government provides unclear or inaccurate information, it may lead to confusion or undesired reactions. The following comment, posted on The Strait Times Facebook page (June 10, 2021) questions the government's plan to keep COVID-19 under control and expresses various concerns related to vaccination and travel restriction.

*"May I know what is the plan for those who developed an allergy reaction from the first dose? Will there be taken care of with the new vaccine? How about will there be denied to travel when borders open up?"* (Facebook, recommendations and measures, 6.10.2021)

When there was a high infection rate of COVID-19 in Singapore in May 2021, the government provided some recommendations to the public to protect themselves from catching the virus. Nevertheless, some recommendations were missing essential information which in turn created confusion for the audience. On May 9th, 2021, The Strait Times shared a recommendation from the ministry of health Singapore, advising people to wear masks with high filtration capabilities to protect themselves from COVID-19. There were various comments questioning this recommendation. One of them is as follows:

*"The recent blue color Mask given by the Govt, Is it a high filtration capability mask? The govt also mentions that it need not wash for 7 days continuously wearing. Should I follow?"* (Facebook, recommendations and measures, 5.9.2021)

#### **(5) Trust and appreciation toward the government and the country**

The analysis of the comments reveals strong messages of the public's appreciation toward the Singaporean government, given that the government has established many things in response to the COVID-19 pandemic. Ligo et al. (2021) suggest that to increase individual and community responsibility in preventing the public from the pandemic, public health risk communication in response to COVID-19 should be transparent and address health equality and social justice. A good example is the comment below, made in response to a post on June 10th, 2021, by The Strait Times. The post was about the government's measure to provide a free oximeter to every Singaporean household, to monitor their blood oxygen levels regularly amid the COVID-19 pandemic. The commenter demonstrates an appreciation of living in Singapore and gratitude towards the government:

*“In this pandemic, there's no better place to live in other than Singapore. Our government and ministers have done so well. Salute & respect... Thank you so much!”* (Facebook, recommendations and measures, 6.10.2021)

## **(6) Unappreciation toward the government**

The final theme is about comments that display a lack of appreciation towards the government. As Djalante et al. (2020) pointed out that policy responses compel a reconsideration of society's emotional domains – people's emotions change when policies change. The change in policies has a great influence on people's emotions. Some citizens showed their disappointment and anger through hateful comments. The following comment is a reply to a post (May 10th, 2021) of The Strait Times explaining that both Singaporeans and permanent residents (PRs) would have to take a pre-departure COVID-19 test before returning to or transiting through Singapore starting at 11.59 pm on May 29th, 2021. The comment shows a lot of anger and complete disregard for these measures:

*“Our government has been Sleeping all while. Only now that wake up because Singapore Covid cases getting worse. This shows how stupid the 4G leaders are. Should have done earlier, now is a bit late.”* (Facebook, recommendations and measures, 5.10.2021)

Based on Djalante et al. (2020), governments generally strive to project force and model good governance to their citizens by demonstrating that "the government is taking action." However, when the communication is improper or inaccurate, it can imperil the public and encourage them to engage in undesirable behavior. From the analysis of the comments, during the COVID-19 pandemic in Singapore, the government kept announcing new measures or changing existing ones, which can create confusion, and wrong assumptions, and decrease the general trust of the citizens. The comment below is a reply to a post by The Strait Times (May 16th, 2021) on the government's intention to start home-based learning (virtual classes) for all schools in the country. It displays distrust in government measures since it kept tightening them quite frequently, which made the commenter assume that there was no backup plan in place:

*“If you've noticed, the govt always update us with the tightening measures on the separate days. Here one day tightens a bit, there on another day tightens a bit. Last-minute work. This shows that they didn't set any Plan B in advance, which they always claimed they have.”* (Facebook, recommendations and measures, 5.16.2021)



Overall, through the analyses of the Facebook posts and comments of CNA and The Strait Times from January 1<sup>st</sup> to August 31<sup>st</sup>, 2021, the government of Singapore had a good COVID-19 policy communication. In terms of narrative and messaging, the government provided accurate and sufficient information promptly to the public. The citizens were well informed with information regarding new infectious cases, deaths, measures, and plans regarding COVID-19 responses. For the emotional aspect, the analysis of the Facebook comments on the themes recommendations, and measures demonstrates the public's trust in the governmental responses to COVID-19. It shows through their willingness to cooperate with the measures and recommendations, and their appreciation toward the governments. However, some people still disagreed with the measures, untrusted and unappreciated the government, showing through hateful comments.

## Chapter 5

### Conclusion and Recommendation

This paper was an attempt to examine the COVID-19 policy in Singapore, a small country with excellent health policy and is in the first place in the COVID-19 resilience ranking in Southeast Asia. Using a qualitative methodology, thematic analysis, this study is based on Djalante et al. (2020) framework which includes 3 categories for examining the efficacy of governance strategies: a) policy and decision making; b) communication and perceptions; and c) science and learning. This study specifically touched on the communication and perception category, which consists of 2 main elements which are emotions and public policy; and narrative and messaging.

By drawing the data from the Facebook posts of the most used two news organizations, Channel News Asia (CNA) and The Strait Times, from January 1 to August 31, 2021, the analyses identified 7 major themes, (1) Information on infectious cases and deaths, (2) Information on vaccination, (3) Recommendations, (4) Measures, (5) Promoting responsibility and togetherness, (6) Impacts of COVID-19, and (7) Information on other countries. The study furthermore investigated the element of emotions and public policy by exploring the comments on the posts in two themes, recommendations, and measures. The comments analyses resulted in 6 themes: (1) Agreeing with the measures and recommendations, (2) Disagreeing with the measures and recommendations, (3) Providing suggestions on measures and recommendations, (4) Questioning the measures and recommendations, (5) Trust and appreciation toward the government and the country, (6) Unappreciation toward the government.

The seven themes from the posts demonstrated how the COVID-19 policies were communicated through the social media (Facebook) of the two organizations. As a result, the Singaporean government provided effective COVID-19 policy communication. In terms of narrative and messaging, the government presented the public with accurate and adequate information in a timely way. Citizens were properly informed about new infectious cases, deaths, measures, and the plan for COVID-19 responses. The Facebook comments analyze the public's confidence in the governmental responses to COVID-19. It is evident in their willingness to collaborate with the measures and recommendations, as well as their gratitude to the governments. However, some people continued to oppose the measures, expressing their distrust for the government through negative comments.

This study has contributed to the knowledge of how the COVID-19 policies in Singapore were being communicated through social media and highlights the emotions and perceptions of the citizens toward the government. The following are the recommendations for future research:

- 1) This study only studied one social media platform, Facebook. It is recommended to conduct a similar study on other types of popular social media (e.g., Twitter, Instagram), as well as online statements from the government, and newspaper.
- 2) The study carried out the data in a specific timeframe (January to August 2021). It would be good for the future study to conduct in different periods because the circumstance of the disease might be changed throughout the time.
- 3) The government and policymakers should be more concentrated on the public's comments, to improve the policy for the future.

## Reference

- Abdullah, A. Z. & Salamat, H. (2020). Singapore confirms first case of Wuhan virus. Channel News Asia. Retrieved February 28, 2022, from <https://www.channelnewsasia.com/singapore/wuhan-virus-pneumonia-singapore-confirms-first-case-786446>
- Anand, S. V., Shuy, Y. K., Lee, P., & Lee, E. S. (2021). One Year on: An Overview of Singapore's Response to COVID-19-What We Did, How We Fared, How We Can Move Forward. *International journal of environmental research and public health*, 18(17), 9125. Retrieved from <https://doi.org/10.3390/ijerph18179125>
- ASEAN. (2011). ASEAN Declaration of Commitment: Getting to zero new HIV infections, zero discrimination, zero AIDS-related deaths. Human rights in ASEAN. <https://humanrightsinasean.info/wp-content/uploads/files/documents/ASEAN%20Declaration%20HIV%20AIDS%202011.pdf>
- ASEAN. (2016). ASEAN Declaration of Commitment on HIV and AIDS: Fast-Tracking and Sustaining HIV and AIDS Responses To End the AIDS Epidemic by 2030. Retrieved from [https://asean.org/wp-content/uploads/2021/10/Final-Endorsed\\_ASEAN-Declaration-on-Ending-AIDS\\_2016.pdf](https://asean.org/wp-content/uploads/2021/10/Final-Endorsed_ASEAN-Declaration-on-Ending-AIDS_2016.pdf)
- ASEAN. (2020). ASEAN Comprehensive Recovery Framework, November 2020. Retrieved from ASEAN: [https://asean.org/wp-content/uploads/2021/08/ACRF-Implementation-Plan\\_Pub-2020.pdf](https://asean.org/wp-content/uploads/2021/08/ACRF-Implementation-Plan_Pub-2020.pdf)
- ASEAN Secretariat. (2019). ASEAN Statistical Yearbook 2018. ASEAN Secretariat: Jakarta 2019.
- Baker, J. A. (2020). DORSCON: What you need to know about the framework that guides Singapore's pandemic response. CNA. <https://www.channelnewsasia.com/singapore/dorscon-coronavirus-singapore-pandemic-response-need-to-know-787811>
- Basic concepts of perception and communication. (2009). In: Franz, HW., Sarcina, R. (eds) Building Leadership in Project and Network Management. Springer, Berlin, Heidelberg. [https://doi.org/10.1007/978-3-540-93956-6\\_5](https://doi.org/10.1007/978-3-540-93956-6_5)

- Bloomberg. (2021). The Covid Resilience Ranking: The best and worst places to be as Covid travel curbs fall away. Retrieved February 28, 2022, from <https://www.bloomberg.com/graphics/covid-resilience-ranking/>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Britannica. (2017). The Straits Times | Singaporean newspaper. Encyclopedia Britannica. <https://www.britannica.com/topic/The-Straits-Times>
- BroadbandSearch. (n.d.). History of Social Media (It's Younger Than You Think). BroadbandSearch.Net. Retrieved February 28, 2022, from <https://www.broadbandsearch.net/blog/complete-history-social-media>
- Chia, P. Y., Ong, S. W. X., Chiew, C. J., Ang, L. W., Chavatte, J. M., Mak, T. M., Cui, L., Kalimuddin, S., Chia, W. N., Tan, C. W., Chai, L. Y. A., Tan, S. Y., Zheng, S., Lin, R. T. P., Wang, L., Leo, Y. S., Lee, V. J., Lye, D. C., & Young, B. E. (2022). Virological and serological kinetics of SARS-CoV-2 Delta variant vaccine breakthrough infections: a multicentre cohort study. *Clinical Microbiology and Infection*, 28(4), 612.e1-612.e7. <https://doi.org/10.1016/j.cmi.2021.11.010>
- CNA. (2022). Channel news Asia (CNA). Facebook. <https://www.facebook.com/ChannelNewsAsia>
- Coltart, C. E. M., Lindsey, B., Ghinai, I., Johnson, A. M., & Heymann, D. L. (2017). The Ebola outbreak, 2013–2016: Old lessons for new epidemics. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 372(1721), 20160297. <https://doi.org/10.1098/rstb.2016.0297>
- CPI. (2016). The WHO's ebola virus disease outbreak response plan. Centre For Public Impact (CPI). <https://bit.ly/3OGboP2>
- CPIGH. (2020). Myanmar's Policy Response to COVID-19. The Center for Policy Impact in Global Health.
- Cucinotta, D., & Vanelli, M. (2020). WHO Declares COVID-19 a Pandemic. *Acta bio-medica : Atenei Parmensis*, 91(1), 157–160. <https://doi.org/10.23750/abm.v91i1.9397>
- Deurenberg-Yap, M., Foo, L. L., Low, Y. Y., Chan, S. P., Vijaya, K., & Lee, M. (2005). The Singaporean response to the SARS outbreak: Knowledge sufficiency versus public trust. *Health Promotion International*, 20(4), 320–326. <https://doi.org/10.1093/heapro/dai010>
- Djalante, R., Nurhidayah, L., van Minh, H., Phuong, N. T. N., Mahendradhata, Y., Trias, A., Lassa, J., & Miller, M. A. (2020). COVID-19 and ASEAN responses: Comparative

- policy analysis. *Progress in Disaster Science*, 8, 100129.  
<https://doi.org/10.1016/j.pdisas.2020.100129>
- Elvis E. Tarkang, & Francis B. Zotor. (2015). Application of the Health Belief Model (HBM) in HIV Prevention: A Literature Review. *Central African Journal of Public Health*. Vol. 1, No. 1, 2015, pp. 1-8. doi: 10.11648/j.cajph.20150101.11
- Gavi. (2021). COVAX explained. Gavi, the Vaccine Alliance.  
<https://www.gavi.org/vaccineswork/covax-explained>
- Girvan, G. (2022). Singapore: #12 in the 2021 World Index of Healthcare Innovation. Medium.  
<https://freopp.org/singapore-freopp-world-index-of-healthcare-innovation-dde24a28b8cc>
- Hall, P. M., & McGinty, P. J. W. (1997). Policy as the transformation of intentions: Producing program from statute. *The Sociological Quarterly*, 38(3), 439–467.  
<https://doi.org/10.1111/j.1533-8525.1997.tb00487.x>
- Hamra, R., Siddiqi, S., Carmel, E., & Ammar, W. (2020). Assessing the governance of the health policy-making process using a new governance tool: the case of Lebanon. *Health Research Policy and Systems*, 18(1). <https://doi.org/10.1186/s12961-020-00557-1>
- Han, C. (2007). History education and ‘Asian’ values for an ‘Asian’ democracy: The case of Singapore. *Compare: A Journal of Comparative and International Education*, 37(3), 383–398. <https://doi.org/10.1080/03057920701330271>
- Healthy People. (2013). Healthy People 2010: Final Review. U.S. Department of Health and Human Services. Retrieved from  
[https://www.cdc.gov/nchs/data/hpdata2010/hp2010\\_final\\_review.pdf](https://www.cdc.gov/nchs/data/hpdata2010/hp2010_final_review.pdf)
- Hirschmann, R. (2021). Most popular sources for news in Singapore 2021. Statista.  
<https://www.statista.com/statistics/982760/singapore-top-news-sources/>
- IMF. (2021). Policy responses to COVID19. IMF. <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#top>
- Lam, N. M. K. (2000). Government intervention in the economy: a comparative analysis of Singapore and Hong Kong. *Public Administration and Development*, 20(5), 397–421.  
<https://doi.org/10.1002/pad.136>
- Lee, Y., & Li, J. Q. (2021). The role of communication transparency and organizational trust in publics’ perceptions, attitudes and social distancing behaviour: A case study of the COVID-19 outbreak. *Journal of Contingencies and Crisis Management*, 29(4), 368–384.  
<https://doi.org/10.1111/1468-5973.12354>

- Li, S., Liu, Z., & Li, Y. (2020). Temporal and spatial evolution of online public sentiment on emergencies. *Information Processing & Management, Volume 57, Issue 2, 2020, 102177*. Retrieved from <https://doi.org/10.1016/j.ipm.2019.102177>
- Ligo, V.A.C., Chang, C.M. & Yi, H. (2021). Contested solidarity and vulnerability in social media-based public responses to COVID-19 policies of mobility restrictions in Singapore: a qualitative analysis of temporal evolution. *BMC Public Health 21, 2232* (2021). Retrieved from <https://doi.org/10.1186/s12889-021-12316-0>
- Lin, C. (2021). Singapore to start gradual easing of COVID-19 border restrictions. Reuters. <https://www.reuters.com/world/asia-pacific/singapore-start-gradual-easing-border-restrictions-2021-08-19/>
- Kaur, A. (2020). The process of communication and its barriers. Akal College Of Physical Education. Retrieved from [https://www.researchgate.net/publication/343362516\\_the\\_process\\_of\\_communication\\_and\\_its\\_barriers#fullTextFileContent](https://www.researchgate.net/publication/343362516_the_process_of_communication_and_its_barriers#fullTextFileContent)
- Kemp, S. (2022). Digital 2022: Singapore. DataReportal – Global Digital Insights. Retrieved February 28, 2022, from <https://datareportal.com/reports/digital-2022-singapore?rq=digital%202022%20Singapore>
- Kethryn, R., & Salonga, B. (2021). Alternative Comparison of Government Strategies of ASEAN Countries in Addressing Public Welfare Problems During COVID-19. *Journal of Asian Multicultural Research for Social Sciences Study, 2(2), 28–33*. <https://doi.org/10.47616/jamrsss.v2i2.127>
- Keyton, J. (2010). *Communication and organizational culture: a key to understanding work experiences*. North Carolina State University, USA.
- Manning, J. (2014.) Social media, definition and classes of. In K. Harvey (Ed.), *Encyclopedia of social media and politics* (pp. 1158-1162). Thousand Oaks, CA: Sage. Retrieved from: [https://www.researchgate.net/publication/290514612\\_Definition\\_and\\_Classes\\_of\\_Social\\_Media](https://www.researchgate.net/publication/290514612_Definition_and_Classes_of_Social_Media)
- McDonald, S. M. (2012). Perception: A concept analysis. *International Journal of Nursing Knowledge, 23(1), 2–9*. <https://doi.org/10.1111/j.2047-3095.2011.01198.x>
- Meta for Business. (2015). Four key trends about Singaporeans on Facebook. Retrieved from <https://www.facebook.com/business/news/four-key-trends-about-Singaporeans-on-Facebook>

- Ministry of Health. (2021). Updates on covid-19 (coronavirus disease 2019) local situation. Ministry of Health. Accessed 30<sup>th</sup> May 2022. <https://www.moh.gov.sg/covid-19/past-updates>
- Mitchell, K. (2012). A Social Tool: Why and How ESOL Students Use Facebook. *CALICO Journal*, 29(3), 471–493. <https://doi.org/10.11139/cj.29.3.471-493>
- MOH. (2020). Statement by Mr Gan Kim Yong, Minister of Health, at parliament, on the update on the whole-of-government response to COVID-19. Retrieved from <https://www.moh.gov.sg/news-highlights/details/statement-by-mr-gan-kim-yong-minister-for-health-at-parliament-on-the-update-on-whole-of-government-response-to-covid-19>
- NCCHPP. (2013). *Public Policy Models and Their Usefulness in Public Health: The Stages Model*. The National Collaboration Center for Healthy Public Policy, Quebec City, Canada.
- Newman, N., Fletcher, R., Schulz, A., Andi, S., Robertson, C. T., & Nielsen, R. K. (2021). The Reuters institute digital news report 2021. Reuters Institute for the Study of Journalism. [https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2021-06/Digital\\_News\\_Report\\_2021\\_FINAL.pdf](https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2021-06/Digital_News_Report_2021_FINAL.pdf)
- Ong, C., & Lim, J. J. (2021). Individual Differences in the Perception of the COVID-19 Vaccine in Singapore. . URECA National technology university of Singapore.
- Peitersen, L. E., Levin, C. S. & Jones, A. G. (2011). Biological Threat Responses to the 2009-2010, H1N1 Influenza Outbreak. Air University Maxwell Air Force Base, Alabama 36116-6427. <https://media.defense.gov/2019/Apr/11/2002115515/-1/-1/0/51DODBIOTHREAT.PDF>
- Purnomo, E. P., Agustiyara, Nurmandi, A., Dewi, A., Rosa, E. M., Bayu, A. H., and Erviana, R. (2022). ASEAN policy responses to COVID-19 pandemic: Adaptation and experimentation policy: A study of ASEAN countries policy volatility for COVID-19 pandemic. *SAGE Open*, 12(1), 215824402210821. <https://doi.org/10.1177/21582440221082145>
- Qiong, OU. (2017). A Brief Introduction to Perception. *Studies in Literature and Language*, 15(4), 18-28. <http://dx.doi.org/10.3968/10055>



- Quah, D. (2021). Singapore's policy response to COVID-19. Impact of COVID-19 on Asian Economies and Policy Responses, 79–88. [https://doi.org/10.1142/9789811229381\\_0012](https://doi.org/10.1142/9789811229381_0012)
- Rimal, R. (2009). Why health communication is important in public health. Bulletin of the World Health Organization, 87(4), 247. <https://doi.org/10.2471/blt.08.056713>
- Sabate, F., Berbegal-Mirabent, J., Cañabate, A., & Lebherz, P. R. (2014). Factors influencing popularity of branded content in Facebook fan pages. European Management Journal, 32(6), 1001–1011. <https://doi.org/10.1016/j.emj.2014.05.001>
- Savoia, E., Lin, L., & Viswanath, K. (2013). Communications in public health emergency preparedness: A systematic review of the literature. Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science, 11(3), 170–184. <https://doi.org/10.1089/bsp.2013.0038>
- Sciortino, R., Saini, F. (2020). Towards a comprehensive narrative and response to COVID-19 in Southeast Asia, Social Sciences & Humanities Open, Volume 2, Issue 1, 2020, 100058. Retrieved from <https://doi.org/10.1016/j.ssaho.2020.100058>
- Sly, T. (2000). The perception and communication of risk: A guide for the local health agency. Canadian Journal of Public Health, 91(2), 153–156. <https://doi.org/10.1007/bf03404933>
- Smith, R. D. (2006). Responding to global infectious disease outbreaks: Lessons from SARS on the role of risk perception, communication and management. Social Science & Medicine, 63(12), 3113–3123. <https://doi.org/10.1016/j.socscimed.2006.08.004>
- Statista. (2022). Number of global social network users 2017–2025. <https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/>
- SteelFisher, G. K., Blendon, R. J., Bekheit, M. M., & Lubell, K. (2010). The public's response to the 2009 H1N1 influenza pandemic. New England Journal of Medicine, 362(22), e65. <https://doi.org/10.1056/nejmp1005102>
- Stevens, H., & Haines, M. B. (2020). TraceTogether: pandemic response, democracy, and technology. East Asian Science, Technology and Society, 14(3), 523-532. doi:10.1215/18752160-8698301
- Teter, W. (2020). Fostering problem driven collaboration in a development context: The ASEAN study of health workforce governance. Asia Pacific Journal of Public Administration, 42(2), 89–110. <https://doi.org/10.1080/23276665.2020.1753222>

- Thaiprayoon, S. & Wibulpolprasert, S. (2017). Political and Policy Lessons from Thailand's UHC Experience. ORF Issue Brief, 174. [https://www.orfonline.org/wp-content/uploads/2017/04/ORF\\_IssueBrief\\_174\\_ThailandUHC.pdf](https://www.orfonline.org/wp-content/uploads/2017/04/ORF_IssueBrief_174_ThailandUHC.pdf)
- The ASEAN Secretariat. (2016). HIV in the ASEAN Region Second Regional Report on HIV & AIDS 2011 - 2015. The ASEAN Secretariat. Jakarta. Retrieved from <https://asean.org/wp-content/uploads/2021/01/08ASEAN-Regional-Report-on-HIV-AIDS-1dec.pdf>
- The White House. (2022). National COVID-19 Preparedness Plan. The White House. Washington, D.C. <https://www.whitehouse.gov/wp-content/uploads/2022/03/NAT-COVID-19-PREPAREDNESS-PLAN.pdf>
- Tran, T. M. O., Nguyen, K. P., and Khuong, A. T. (2021). Sustainability and Resilience in the Vietnamese Health System. The London School of Economics and Political Science.
- Villota, E. J., & Yoo, S. G. (2018). An experiment of influences of Facebook posts in other users. 2018 International Conference on eDemocracy & eGovernment (ICEDEG). <https://doi.org/10.1109/icedeg.2018.8372319>
- Wang, X., Shi, L., Zhang, Y., Chen, H., & Sun, G. (2021). Policy disparities in response to COVID-19 between Singapore and China. International Journal for Equity in Health, 20(1). <https://doi.org/10.1186/s12939-021-01525-z>
- Weible, C. M., Nohrstedt, D., Cairney, P., Carter, D. P., Crow, D. A., Durnová, A. P., Heikkila, T., Ingold, K., McConnell, A., & Stone, D. (2020). COVID-19 and the policy sciences: Initial reactions and perspectives. Policy Sciences, 53(2), 225–241. <https://doi.org/10.1007/s11077-020-09381-4>
- WHO. (2018). Mental health: strengthening our response. World Health Organization. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>
- WHO. (2020a). Coronavirus disease (COVID-19). World Health Organization. Retrieved February 28, 2022, from [https://www.who.int/health-topics/coronavirus#tab=tab\\_1](https://www.who.int/health-topics/coronavirus#tab=tab_1)
- WHO. (2020b). COVID-19 Global risk communication and community engagement strategy - interim guidance. Retrieved from <https://www.who.int/publications/i/item/covid-19-global-risk-communication-and-community-engagement-strategy>

- WHO. (2020c). 2019 Novel Coronavirus (2019-nCoV) strategic preparedness and responses plan for the South-east Asia region. Retrieved from <https://www.who.int/docs/default-source/searo/whe/coronavirus19/covid-19-sprp-whe-searo-feb-2020.pdf>
- WHO. (2021a). COVID-19 Exercise Programme - Drills for Vaccine Deployment. Country Health Emergency Preparedness & IHR, WHO Headquarters (HQ). Retrieved from <https://www.who.int/publications/m/item/covid-19-exercise-programme---drills-for-vaccine-deployment>
- WHO. (2021b). Digital Documentation of COVID-19 Certificates: Vaccination Status - Technical Specification and Implementation Guidance. WHO Headquarters (HQ). Retrieved from [https://www.who.int/publications/i/item/WHO-2019-nCoV-Digital\\_certificates-vaccination-2021.1](https://www.who.int/publications/i/item/WHO-2019-nCoV-Digital_certificates-vaccination-2021.1)
- WHO. (2022). WHO Coronavirus (COVID-19) Dashboard. WHO Coronavirus (COVID-19) Dashboard. Retrieved February 28, 2022, from <https://covid19.who.int/>
- WHO. (n.d.). COVID-19 Simulation Exercises Packages. World Health Organization. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/training>
- Willoughby, E. (2022). An ideal public health model? Vietnam's state-led, preventative, low-cost response to COVID-19. Brookings. Retrieved from <https://rb.gy/5piqxn>
- Winstedt, R. Olof , Ho, . Robert , Kennard, Annajane and Leinbach, . Thomas R. (2022). Singapore. Encyclopedia Britannica. <https://www.britannica.com/place/Singapore>
- Wirtz, J., & Chung, L. M. (2015). Singapore: Macro trends and their implications for consumer marketing. *Developments in Marketing Science: Proceedings of the Academy of Marketing Science*, 441–443. [https://doi.org/10.1007/978-3-319-17320-7\\_118](https://doi.org/10.1007/978-3-319-17320-7_118)
- World Bank. (2022). Singapore | Data. The World Bank. Retrieved from <https://data.worldbank.org/country/singapore>
- Worldometer. (2022). Worldometers: COVID Live - Coronavirus Statistics. Retrieved February 28, 2022, from <https://www.worldometers.info/coronavirus/>
- World Population Review. (2022). Singapore Population 2022 (Demographics, Maps, Graphs). Retrieved February 28, 2022, from <https://worldpopulationreview.com/countries/singapore-population>
- Yadav, M. (2017). Structure and Functions of the World Health Organization. *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)*, 22(9), 15-41. [https://www.researchgate.net/publication/319480566\\_Structure\\_and\\_Functions\\_of\\_the\\_World\\_Health\\_Organization](https://www.researchgate.net/publication/319480566_Structure_and_Functions_of_the_World_Health_Organization)