

Investigating inclusive risk communication in the context of influenza outbreaks

Insights from South Korea and Vietnam

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Abstract

Outbreaks of novel influenza viruses are continually occurring on many places on our planet, with the ultimate and most extreme consequence being a full-scale pandemic. Modern communication technology is widely used for risk communication regarding recommended change in behavior patterns and other precautions in order to mitigate the transmission. However, the assumption and bias that modern communication technology constitutes the norm causes vulnerable groups to be at possible risk of systematic exclusion to correct and updated information. Through conducting a literature- and case analysis, the aim of this study is to identify insufficient or inadequate risk communication efforts in South Korea and Vietnam during influenza outbreaks, especially with concern of vulnerable groups. Further, to analyze how national influenza preparedness plans observe or ignore these insufficiencies. Results show that vulnerable groups are explicitly recognized in the preparedness plan of Vietnam. However, the South Korean preparedness plan show a more homogenous approach. Both South Korea and Vietnam showed a broad variety of channels used in their risk communication strategies which could be positive in terms of a broad outreach to a heterogenous population, including vulnerable groups. Four key factors that moderate the outcomes of risk communication were identified: Channels, Messages, Transparency and Trust.

Keywords

Information and communication technology, Epidemic, Pandemic, Communication inequalities, Public health emergency preparedness, Digital divide, Risk communication, Preparedness strategies, Communication strategies

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Abbreviations

BCC - Behavior Change Communication
ERMH - Emergency Risk Management for Health
HPAIV's - Highly Pathogenic Avian Influenza Viruses
ICT - Information and Communication Technology
IEC - Information, Education and Communication
IHR - International Health Regulations
IHR NFP - International Health Regulations National Focal Point
KCDC - Korea Centers for Disease Control and Prevention
MARD - Ministry of Agriculture and Rural Development (Vietnam)
MOH - Ministry of Health (Vietnam)
MOHW - Ministry of Health and Welfare (South Korea)
PHEP - Public Health Emergency Preparedness
RRT - Rapid Response Team
SES - Socioeconomic status
SPIDER - The Swedish Program for ICT in Developing Countries
UNAIDS - The Joint United Nations Program on HIV/AIDS
UNDP - United Nations Development Program
WHO - World Health Organization
WVU - Vietnam Women's Union

Introduction

The ultimate job of risk communication is to try to produce a citizenry that has the knowledge, the power, and the will to assess its own risks rationally, decide which ones it wants to tolerate and which ones it wants to reduce or eliminate, and act accordingly.
(Sandman 1993, p.82)

The idea of this thesis arose in the light of the ongoing covid-19 pandemic, as the current events made it very clear how important it is to be reached by the latest information. This in order to adapt our behavior in our everyday lives to prevent further transmission. Globalization causes the problem to grow even bigger, because of the rapid spread of the virus through transnational movement. Our globalized and interconnected world makes today's pandemic not only a public health issue, but also a severe economic issue as trade patterns are profoundly disrupted. In the middle ages, it took 2050 years for smallpox to spread from Egypt to Europe as nations were more isolated from each other and transportation possibilities were more limited (Nye & Welch 2013, p. 256). In comparison, a major advantage for humans today, lacking our ancestors in the past are new technologies such as communication equipment. However, information regarding regulations and guidelines in order to reduce the number of cases do not always reach all members of the population effectively, neither is compliance in alignment with the information equal among the population (Vaughan & Tinker 2009, p.325).

Information inequalities is a development issue caused by different factors and ranges from lack of access to information and communication technology (ICT), also known as digital divide to lack of risk information in diverse languages. Digital divide is recognized as an obstacle towards equal development by the United Nations Development Program (UNDP 2020). According to the international telecommunications union ITU, 4.1 billion people, or 53.6% of the world's population had access to the internet in 2019 (ITU 2020b). This means in turn, that approximately 4 billion people lack access, whereof 90% in the developing world. The aim to bridge the digital divide is part of the Sustainable Development Goal 9 and highlighted as crucial to equal access to information and knowledge (UNDP 2020). These inequalities and inefficient risk communication strategies could hinder individuals to act correctly in order to shield themselves from infection. This increases the risk of transmission among the vulnerable groups, which in turn is an obstacle for the entire community to combat rapid transmission (Vaughan & Tinker 2009, p. 324). In this study and this context, vulnerable groups will be those with low socioeconomic status (SES) and a limited access to technology (Hammond 1996, p.196). To study the gaps and weaknesses of risk communication during an epidemic is important, partly to highlight vulnerable groups in the context but also to highlight inequalities that jeopardize the health of individuals and the society, as well as equal development possibilities.

ICT solutions have tremendous potential to change the way the world works, lives and interacts and thereby accelerate achievement of the Sustainable Development Goals.
(Nethope 2015, p.61)

Communication possibilities for all are a vital part on the path towards sustainable development. Through new technologies, transparency and accountability can be fostered as well as empowering people to engage, interact and stay informed anywhere at any time (Nethope 2015, p.17). Mobile devices are one of the most important technologies to reach

isolated or poor communities with vital information that can improve their quality of life and capacitate them to make informed choices, as well as giving them a voice, access to health care, public services and education (ibid, p.26). A technical revolution has taken place, for example within disaster relief by enabling impacted populations to rapidly communicate their needs and the situation on the ground (ibid, p.41). Trends are showing an increase in global connectivity which looks promising, but there is still a long way to go (ibid, p.29). Challenges such as access to electricity and connectivity, leaving the unconnected behind, government attempts to control anti-government information and quick validation of information in case of emergency (ibid, p.18 & 42). Also, technology solutions need to be adapted to the context, strategic partnerships need to be formed and costs needs to be lower (ibid, p.16). Digital literacy needs to be enhanced and cultural barriers needs to be conquered (for example that women are less likely to own a mobile device than a man) (ibid, p.27). With the great threat to development that pandemics and epidemics poses in relation to the power that can be created through robust and reliable communication possibilities, this field remain a central and necessary process to study to assess its impact and function.

Problem statement, purpose & research questions

Problem statement

Outbreaks of novel influenza viruses are continually occurring on many places on our planet, with the ultimate and most extreme consequence being a full-scale pandemic. This, even though knowledge about transmission patterns often are scientifically well established. Modern communication technology is widely used for risk communication regarding recommended change in behavior patterns and other precautions in order to mitigate the transmission in an event of an outbreak. However, the assumption and bias that modern communication technology constitutes the norm causes vulnerable groups to be at possible risk of systematic exclusion to correct and updated information.

Purpose & Research questions

The aim of this study is to identify insufficient or inadequate risk communication efforts during an influenza outbreak, especially with concern of vulnerable groups. Further, to analyze how national influenza preparedness plans observe or ignore these insufficiencies. Hence, asking the following research questions;

- What strategies on how to reach vulnerable groups by risk communication are included in the national influenza preparedness plans, and ultimately in the national response to an influenza outbreak?
- Which key factors determine the success or failure of risk communication efforts in pandemic influenza preparedness plans?

The Context

Risk communication is one component of many in the establishment of an Emergency Risk Management for Health (ERMH). The World Health Organization (WHO) recommends governments to use these guidelines in their establishment and implementation of national emergency risk strategies (WHO 2017c, p.19). The government has the comprehensive responsibility in coordinating crisis preparedness plans and executing these if needed. Regarding national pandemic influenza risk management, they are the natural leaders for overall pandemic coordination and communication efforts. The efforts included in risk management are supported by WHO and other UN organizations under the law of International Health Regulations (IHR). The purpose the IHR (2005) is “to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade” (WHO 2005a, p.1). Pandemic risk management requires close collaboration between all ministries within the government, not least the ministries of communication (WHO 2017c, p.56-57).

WHO illustrates the importance of correct communication between authorities and the public during an event of an epidemic or pandemic. This was based on the experience of the influenza A(H1N1) 2009 pandemic where several member states experienced challenges related to communication (WHO 2017c, p.8). Well planned communication is crucial in the implementation of non-pharmaceutical interventions, both on a personal and community level such as self-isolation, shut down of schools, etc. (WHO 2018a, p.25-26).

Moreover, WHO emphasizes that populations are not homogeneous, and that risk communication needs to be diversified to reach everyone in society. It is important to develop effective strategies to inform, educate and communicate with vulnerable groups to improve their ability to take appropriate actions before, during and after a pandemic. It could be necessary to identify appropriate spokespeople, identify communication channels and assess their ability to reach all target population groups (WHO 2017c, p.35). If the heterogeneity in society are ignored in the risk communication strategies, current communication gaps for vulnerable populations could result in unequal protection across society during an influenza pandemic. Strategic planning should therefore fully consider how life circumstances, cultural values, and perspectives on risk, influence behavior during an outbreak (Vaughan & Tinker 2009, p.324).

The role of communication and equality

The Swedish Program for Information and Communication Technologies in Developing Regions (SPIDER) concludes that an information gap is causing large problems as well as lack of access to reliable information in local languages. This through working with local organizations and organizing focus groups to curb the HIV/AIDS epidemic in southern Africa in the beginning of the 2000's. The Joint United Nations Program on HIV/AIDS (UNAIDS), leading the global work for the fight against the AIDS epidemic lists access to information as one of the top 10 priorities to mitigate spread of infectious disease (UNAIDS 2006). New information technology presents challenges for stakeholders to structure and evaluate

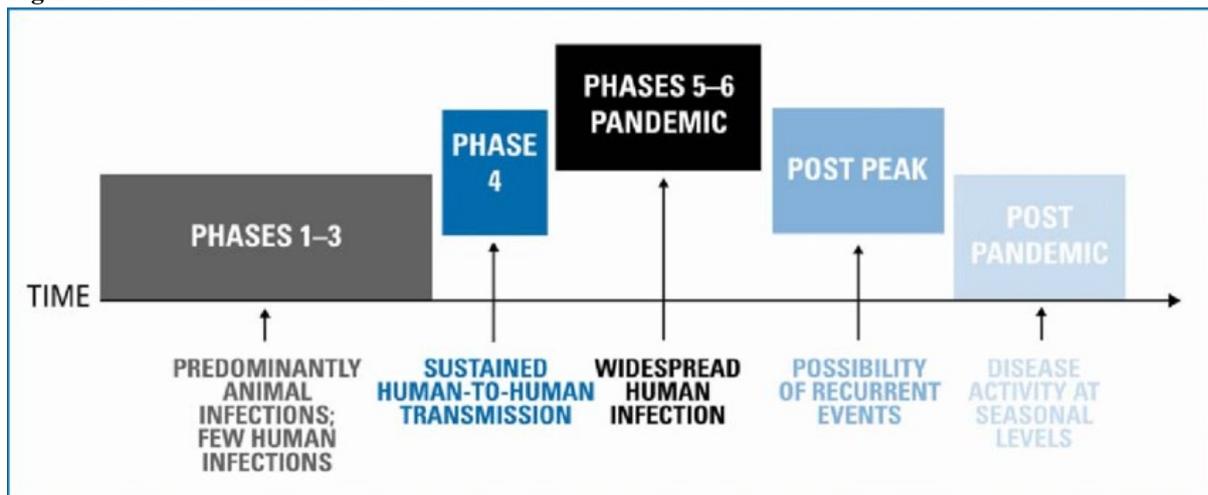
information, as it now is accessible from multiple sources, but also presents a variation of new opportunities (Cairns, de Andrade & MacDonald 2013, p.1551).

Olofsson and Öhman emphasize that communication is essential for risk management, “risk communication can be seen as a collective name for all types of information and communication about potential risks that occur before, during and after a crisis or disaster”. The need for information increases fast during a crisis and lack of information is often what people point out as a major problem when the crisis is over (Olofsson & Öhman 2009, p.70).

Epidemics & pandemics

Novel virus outbreaks can escalate and become epidemics or in the worst-case scenario a pandemic such as the contemporary covid-19. However, from a national point of view a pandemic and an epidemic are very similar and thereby needs similar strategies to overcome. The biggest difference on a national level between an epidemic and a pandemic is the possible lack of humanitarian aid and international cooperation because of depleted stocks of equipment, medicine and resources. The World Health Organization has outlined pandemic influenza phases in order to illustrate and clarify the patterns of transmission, as well as guidance on appropriate actions in order to minimize severe outcomes (WHO 2020e).

Figure 1. Pandemic Influenza Phases



Adapted from: WHO (2020e)

“The Avian Influenza” A/H5N1 outbreaks 2003

Birds are natural hosts to the Highly Pathogenic Avian Influenza Viruses (HPAIV’s). This virus strain was first isolated in Guangdong, China in 1996 and have spread from southern China across Southeast, East and Central Asia, to the Middle East, Europe and Africa with a larger outbreak 2003/2004 in South-East Asia. Millions of domestic and wild birds have either died or been culled because of the outbreaks caused by H5N1 viruses. Transmission of H5N1 HPAIV’s from birds to humans and human-to-human is rare, but if an infection occurs the mortality rate can be as high as 60% (Carrel et al. 2010, p.1). Normally by individuals coming in contact with raw infected poultry, eggs or excrements. It can also be transferred from other domestic animals such as cats, even though not equally common and therefore not considered a large risk in comparison with non-hygienic slaughter or cooking practices and insufficient

distancing of infected animals and humans. Birds in the wild can be unharmed reservoirs of influenza A strains that severely affect domestic poultry. This especially by the Highly Pathogenic Avian Influenza (HPAI) with mortality up to 100% in poultry. Causing rapid spread within the flock, posing a great threat also adding the increasing risk of animal-human transmission in crowded living conditions (WHO 2020c). Avian Influenza have recurred several times since 2003, for example another avian influenza virus strain, H7N9, appeared in 2013-2014 killing 175 people of a total 453 infected (Wallace & Ràfols 2018, p.1977). A risk scenario would be a combination of H5N1 “avian flu” strains and other virus strains, like H1N1 “swine flu”, which could possibly lead to a human-to-human rapidly spreading disease with high mortality (Carrel et al. 2010, p.1). This is the main driver behind large efforts to obstruct infection pathways and to continually monitor outbreaks among poultry populations, the avoidance of mutation and thereby a possible pandemic (WHO 2020c).

“The Swine flu” A/H1N1 pandemic 2009

The first case of infection by the novel A/H1N1 virus in humans occurred in Mexico March 18th, 2009 and increased rapidly (WHO 2009). The influenza was declared as a pandemic June 11th, 2009 (Chan 2009). By August 10th, 2010 WHO Director-General Dr Margaret Chan announced that the A/H1N1 influenza virus has moved into the post-pandemic period (WHO 2010), see *Figure 1*. The pandemic A/H1N1 caused more than 18000 laboratory confirmed deaths in more than 200 countries (Nguyen et al. 2015, p.216) The virus had not been previously detected in pigs or humans (WHO 2009) but are similar to the virus causing the Spanish flu in 1918. The estimated incidence of novel influenza A/H1N1 during the pandemic was 5.68/100 of all reported cases with a higher incidence rate in younger age groups. The virus caused a high morbidity and the mortality rate varied between 0.33-1.31% during the pandemic. Fatal cases were much more likely to occur in elderly, over 60 years of age (Choi et al. 2012, p.1).

The A/H1N1 virus was first referred to as “the swine flu” by health officials but caused many misconceptions about the danger posed by pigs, like eating pork (Lin et al. 2014b). As the A/H1N1 virus from 2009 is now declared as a regular human flu virus and continues to circulate seasonally worldwide. The name of the virus has changed in order to minimize confusion and to differentiate the virus from the old seasonal A(H1N1) viruses circulating in humans before the pandemic (H1N1) 2009. The Advisers to the WHO Consultation on the Composition of Influenza Vaccines for the Southern Hemisphere 2012 advise WHO to use the nomenclature A(H1N1)pdm09 (WHO 2011).

“Middle East Respiratory Syndrome” MERS outbreak 2013 - 2015

The first known case of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) was identified 2012 in Saudi Arabia and caused a big outbreak on the Arabian Peninsula. The largest outbreak outside the Arabian Peninsula occurred 2015 in South Korea (WHO 2018b). Dromedary camels are known to be the natural host to the MERS virus, but it is unknown how easily the virus transmits to humans. The most common way of transmission is human-to-human, through droplets and close contact. The morbidity can vary but the mortality rate is high, approximately 35% (ibid). At the end of January 2020, a total of 2519 laboratory-confirmed cases of MERS, including 866 associated deaths were reported globally (WHO

2020d). Human cases of the virus have been reported in 27 countries since 2012, whereof 80% from Saudi Arabia (WHO 2018b).

“COVID-19” SARS-CoV-2 pandemic 2019 - ongoing

Many facts regarding the novel coronavirus Covid-19 are - at the time of writing - still unknown. What is known is that it is a zoonotic virus, believed to be spread to humans from live animals on a food market in Wuhan, China in December 2019 (Peeri et al. 2020, p.2).

Previously known as the “2019 novel coronavirus” the official name of the disease is now covid-19. The name of the virus causing the disease is severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (WHO 2020a).

The scale and rapid spread of the pandemic until now is partly being attributed to the non-transparent behavior of the Chinese health authorities, the failure of Chinese state media to report the severity of the virus as well as lately imposed travel restrictions to and from affected areas. Also, a more globalized world and the fact that Wuhan is a huge communication hub combined with the spread emerging around the time of the Chinese New Year accelerated the transmission even more. The absence of a vaccination or another effective cure is limiting the possibilities to medically contain the disease leaving all efforts to include isolation and social distancing. Laboratory testing possibilities and protective gear are also scarce (Peeri et al. 2020, p.6).

Preparation can be one of the major differences between a successful and unsuccessful mitigation of transmission of covid-19. Many countries in Asia have experienced epidemics on several occasions and therefore had a quick response when covid-19 started to gain foothold in early 2020. Vietnam that enforced measures that looked like an “overreaction” even before WHO declared Covid-19 a pandemic, has seemingly done very well this far with no reported deaths (as of May 26th, 2020) (Jones 2020; Vu & Tran 2020, Worldometer 2020b). South Korea has a leading position when it comes to mitigating the outbreak, mainly through excessive testing. Drive through testing sites has been set up in combination with urging citizens to report any symptoms to the health authorities through a smartphone application, which makes it possible to monitor new possible cases in real time (Yeung 2020). Gudi and Tiwari points out that the current pandemic is not only a curse, but also a tremendous opportunity for us to improve and refine our healthcare facilities and practices. Also, to learn how to cope with these kinds of situations on a global scale in the future (Gudi & Tiwari 2020, p.111).

Study objects

The selected countries South Korea and Vietnam are both located in Asia and represent different income levels and political systems. Both countries have a history of epidemics related to zoonotic viruses.

South Korea

South Korea is according to ITU and the UN M49 standard regarded a developed country (ITU 2020a). World Bank classifies South Korea as a high-income country (World Bank 2020b). The Human Development Index (HDI) for South Korea is 0.906 which classifies as “very high” (UNDP 2019). The country has 51 million inhabitants (2017), almost exclusively of Koreans but a small Chinese minority. It’s one of the most urbanized and most densely populated countries in the world (Landguiden 2020a).

South Korea is now a republic state but has faced many years of instability since the end of their civil war in 1953 and ruled by military-dominated dictatorship. The country considered to have entered a formal democracy in 1987. However, not receiving their first president without a military background until 1992. Despite this, the country has continued to be characterized by corruption scandals within the government followed by public demonstrations. The domestic politics are polarized with a conservative party grouping and a left-wing liberal, the power has alternated between the two political groups based in each region of the country. The conservative parties have had their stronghold in the industrial areas of south-eastern South Korea, while more left-wing parties have been strongest in the southwest, where incomes are lower (Landguiden 2020a).

The standard of living and social conditions has improved radically for most South Koreans from the 1960s onwards. However, the income gap is growing (Landguiden 2020a). The National Health Insurance Program comprises most of the population and a few percent are supported by Medical Aid, resulting in full access to health care for the whole population (Soong 2009, p.207-209). The society has a strong hierarchical and patriarchal structure. The media can operate freely and are active in the scrutiny of power holders. However, journalists are limited by the security legislation and can be prosecuted for defamation (Landguiden 2020a).

The public trust towards the government and the political parties has been jeopardized though several events and lack of transparency within the state apparatus over the past decades. Data from several international and national surveys between 1981 and 2010 demonstrate a decrease in the level of trust in government in Korea (Korea Development Institute 2006; OECD 2015. In: Kim, Lee & Lee 2018 p.74). Another study presents minimal public trust in the parliament, low level of trust towards their legal system, and in media. In contrast, the public had high trust for the army and the public health system (Tan & Tambyah 2011, p.368-369). In order to restore trust, the Korean government has made considerable efforts to adopt and promote various citizen participation programs at all levels of government in an effort to ensure accountability, improve transparency and trust (Kim, Lee & Lee 2018, p.73).

South Korea has been acknowledged in its great capabilities to address emerging and re-emerging infectious disease threats and public health emergencies by analyzing their IHR core capacities. However, possibilities to further improvements has been observed, e.g. continual strengthening of the National IHR Focal Point (IHR NFP) function and the IHR

coordination capacity with other sectors including animal health and environment, as well as improved risk communication with affected communities. Despite that, there is a clear expectation that South Korea will embrace a leadership role at the regional and global level regarding preparedness and management of epidemics and other public health emergencies (WHO 2017a, p.1-2). South Korea's Influenza Pandemic Preparedness and Response Plan (2006) has an operative focus with clear instructions on how to operate during the different phases and levels of an international and domestic pandemic. It addresses the WHO pandemic phases as well as their own four-level color-coded system for different alert levels during a pandemic (Ministry of Health and Welfare (MOHW) & Korean Centers for Disease Control and Prevention (KCDC) 2006, p.8).

Vietnam

Vietnam is according to ITU and the UN M49 standard a developing country (ITU 2020a). World Bank classifies Vietnam as a lower middle-income country (World Bank 2020b). The Human Development Index (HDI) for Vietnam is 0.693 which is also regarded middle (UNDP 2019). Vietnam gained its independence from France in 1954 and was after that ravaged by the civil war between a communist North and a South supported by the West. The war lasted until 1975 when the communist party of Hanoi enjoyed the victory, but at a high cost with millions of lives lost and many more traumatized. Today, Vietnam's official name is the Socialist Republic of Vietnam, it is considered a communist one-party state. The country has over 95 million inhabitants with the majority population consisting of the “Viet” or “Kinh”, almost 90% identifies with this group.

The majority group is in dominance when it comes to economy, politics and culture. Unfortunately, 86% of Vietnam's poor belong to ethnic minorities (World Bank 2020a). Officially, there are 54 ethnic groups in Vietnam recognized by the government. Only one of these, the Chinese (Hoa) are statistically not at greater risk of poverty and living in an inaccessible location (often the mountainous areas). Lower literacy has been detected among students in these areas and local health workers tend to be focused on urban rather than rural regions. The same government that recognized these ethnic minorities also refers to them as underdeveloped and unprogressive while praising the Kinh majority for its advancement. This cultural oppression leads to ethnic minorities adapting and changing their traditional lifestyle as it is associated with poverty and disease (McKinn et al. 2017, p.2; Målqvist et al. 2013, p.2; Fritzen 2007, p.76).

Compared to other countries at the same income level the Vietnamese has relatively good health, housing and a well-developed school system. This mainly due to the lifting of trade restrictions and opening up the economy in the 1980's. The communist party is regardless the driving force in the whole society and its regime can be said to be one of the most authoritarian in Asia (Landguiden 2020b). Liberal economic policies were introduced after the planned economy failed to deliver, culminating in a social crisis. Trust among the citizens declined sharply and the Communist party acted to save its legitimacy and safeguard its domination. Doi Moi (Đổi Mới in Vietnamese), the financial reform of 1986 restored trust in the government and enforced its power monopoly (Nguyen 2016, p.33-34).

In the context of health, the communication structures have been a barrier as they have always been unidirectional. Consequently, a gap between health knowledge and actual health practices has emerged. Many claim that the government of Vietnam has not been sensitive

enough when it comes to differences within the country, and traditional practices among various ethnic groups has been attributed debt for not breaking patterns of harmful health behaviors. Failure to adapt communication to various contexts and cultural approaches as well as exclusion of specific groups has been pointed out as a reason (McKinn et al. 2017, p.8; Målqvist et al. 2013, p.1). Research show that ethnic minorities use the public health services less than the majority population, long distances and financial issues play a role, but also discrimination, both of structural origin and directly from health staff (Målqvist et al. 2013 p.1 & 6). For example, a passive style of information dissemination is common, distributing handbooks and generic information that the receiver is not always susceptible to for various reasons (McKinn et al. 2017, p.8).

Vietnam strives to implement a “One Health Approach” where the focus is shifted from not mainly human health, but equally incorporate the health and welfare of animals and nature as well. Land use changes and their effects on wildlife are recognized as a driver to possible new infection pathways from animals to humans and the strategy aims to reach the source of zoonotic transmission rather than treating human to human spread when it occurs and threatens to escalate to an epidemic or pandemic. The One Health approach also highlights the effects on economic, social, human and environmental processes and hence the total cost of neglecting the health and welfare of nature and animals, this also relates to other hazards such as air pollution and a decrease of ecosystem services (Ministry of Agriculture and Rural Development (MARD) & Ministry of Health (MOH) 2011, p.viii & 11).

A census measuring trust in Vietnam show that the Vietnamese population had the highest level of trust in their public education system. The public health system also enjoyed relatively high levels of trust. Vietnam did not participate in regards of trust towards the political institutions, consisting of central government, local government, the army, parliament, congress and the political party. The media received the highest level of trust in Vietnam (Tan & Tambyah 2011, p.368-369).

Regarding pandemic phases in Vietnam, there are no clear structure found from official sources. The pandemic phases of Vietnam are briefly described as phase one being a smaller external threat with risk of import of the virus from one or a few countries, the second phase being a big risk of importing the virus because its present in many countries and the third phase being a high risk of domestic/community spread (Vu & Tran 2020). All preventative and emergency measures are general and not connected to a specific phase of the epidemic/pandemic. The Vietnamese government addresses this in the pandemic preparedness plan, as they aim to evaluate the need and possible improvement of their response in this matter (MARD & MOH 2011, p.48 & 83).

Theoretical framework

The theoretical framework contributes to support an understanding of the risk communication strategies from a scientific point of view and to evaluate the strategies and their possible success and inclusion of vulnerable groups in the context of an epidemic or pandemic. Theories are including government trust and compliance, risk- and crisis communication and inequality.

Government trust theory

In a communicable disease risk or crisis situation, the trustee's perceptions of the satisfactoriness of the trustor to address the risk or crisis will draw on the trustor's preexisting reputation, his or her past and present relationship experiences, and the credibility of the trustee's advice; this will, in turn, determine the willingness of the trustee to engage in preventive or emergency behaviors proposed by the trustor.

(Cairns, de Andrade & MacDonald 2013, p.1552)

Levi & Stoker points to the "minimal consensus" among scholars when it comes to defining trust. Trust is something relational that needs to be established between two or more entities, involved someone (an individual or group) making itself vulnerable by to another individual, group or institution that can do her harm with ill will (Levi & Stoker 2000, p.476). Many scholars agree that trust in the government is an important part of cooperation and action among the citizens. Trust can normally be related to policy expectations and people being satisfied by policies implemented by the government (Im et al. 2012, p.746-747). Chuang et al. refers to Szreter and Woolcock (2004) that have defined trust as two separate dimensions: the first one based on the relationship between the trusting individual and the other (relational trust), the second dimension is referring to previous behavior (calculative trust) (Chuang et al. 2015, p.7).

What causes the public not to trust its government?

To already have cultivated trust in some sense and be prepared is the key to gaining trust when an epidemic is present among a population (Cairns, de Andrade & MacDonald 2013, p.1554; Chuang et al. 2015, p.7). Planning in advance is also one of five principles set out by the World Health Organization Outbreak Communication Guidelines' following the 2005 SARS outbreak (WHO 2005b). Trust is rather linked to the political life of the people, not their personalities or social characteristics. People who distrust the government are not satisfied with policy choices. Also, political scandals, war, critical media messages conveyed to the public, politicians portrayed as selfish can contribute negatively (Levi & Stoker 2000, p.480-481). The governments responsiveness towards the public is also indispensable, if problems previously pointed out by the public remains unsolved the trust in the government decreases (Levi & Stoker 2000, p.482-483).

Government performance is also central, when it comes to maintaining economic growth and creating stability and prosperity. If the government fail to do this, distrust escalates (Kampen, Van De Walle & Bouckaert 2006, p.387) "political trust has been shown to fluctuate in accordance with government performance". Mostly economic performance is being examined in the literature but social performance (policies related to education, health care, etc.) is also an extremely important factor (Ellinas & Lamprianou 2014, p.232). Schools and

hospitals are a concrete and clear sign of mismanagement if they don't work as expected and the trust will be affected accordingly (ibid, p.248).

Scholars underline the essentiality of transparency, to hide negative development with the motivation to avoid panic is never a good idea (Cairns, de Andrade & MacDonald 2013, p.1558). When an "external threat" is present, such as an influenza epidemic, trust can increase in the short run because the people turn to the government. Correspondingly, with an internal failure present, trust declines (Citrin & Stoker 2018, p.59). Ellinas & Lamprianou points out that "The main expectation is that during extraordinary economic shocks, the economic and social performance of government has a stronger effect on political trust than during normal times." (Ellinas & Lamprianou 2014, p.232).

Compliance connected to trust

Compliance can in many ways be interlinked with trust, as the public tends to respond positively to measures in accordance with the authorities recommendations or regulations if they trust their government. This enables the government to limit or make changes in people's everyday life without coercion (Kampen, Van De Walle & Bouckaert 2006, p.387; Levi & Stoker 2000, p.492).

The relevance of trust in challenging events such as disasters and epidemics lies in the possibility for the government to implement regulations and guide the people through the crisis. For this to be a realistic possibility, it's essential that the public follow recommendations and regulations. If citizens trust their government it is more likely that they obey and follow their directives without coercion (Levi & Stoker 2000, p.492; Kampen, Van De Walle & Bouckaert 2006, p.387) In addition to coercive measures and prohibitions, to avoid panic and misinformation, transparency between government bodies and the public is essential in educating citizens on the risks of transmission (Gudi & Tiwari 2020, p.108). Hence, trustworthiness and credibility of government messages is a powerful moderator for public health system effectiveness (Cairns, de Andrade & MacDonald 2013, p.1550 & 1557).

During the Ebola epidemic in Liberia, the people not trusting the government showed tendencies to not obey to restrictions of social distancing or make changes in their daily lives. Adopting practices recommended by the government such as "safe burials" of infected bodies was not followed in many cases even though people showed no signs of understanding less about symptoms or transmission of Ebola. They simply did not trust the recommendations made by the government to mitigate the transmission. The people who suffered most from the epidemic trusted the government even less (this causes a downward spiral of distrust, suffering, less trust and less compliance which increases the spread of disease even more (Blair, Morse & Tsai 2017, p.89).

Crisis & risk communication theory

Risk communication is defined as an exchange of information regarding risks, resulted by environmental and industrial processes, policies or products form individuals, groups and institutions.

(Glik 2007, p.33)

Risk communication is local, regional or national authorities providing information to the public, preceding a crisis but also during and after the crisis is over. The information must be “understandable, timely, transparent and coordinated” (COMBI 2012, p.xii). To foster a dialogue with the public, where they experience a “two-way communication” with the authorities, is also central (Cairns, de Andrade & MacDonald 2013, p.1555). Not only for recognition that their experience matter, but also to be aware of rumors circulating in communities and to estimate the impact of the current situation from the perspective of locals (COMBI 2012, p.12).

Olofsson and Öhman (2009) explain that risk communication can be seen as a generic term for all type of information and communication regarding potential risks that occurs before, during and after a crisis or disaster (Olofsson & Öhman 2009, p.70). Risk communication is associated with general social and cultural conditions and can be seen as an objective and subjective process as exchange of information occur repeatedly between individuals, groups and authorities. Therefore, risk communication and the conveyed message is a result of different social, cultural and psychological influences (ibid, p.72).

The foundation of risk communication

In their book about risk communication Olofsson and Öhman (2009) address five important factors in a communication process which also applies to risk communication;

- The transmitter/the source - the agency that begins to communicate.
- The message - the information which is conveyed in different forms e.g. verbally, written, in sign language, in pictures or like music.
- The receiver/audience - Could be the public, a specific target group or individual.
- The channel - The communication channel used to mediate the information. The common channels for risk communication are mass media like television, radio and Internet, as well as books and newspapers.
- The effect - The result of the message, represented through the transfer of information, attitude or behavior change, organizational change, reduced anxiety and insecurity both in the long and short term (Olofsson & Öhman 2009, p.71).

Mass media has an important role in communicating and mediate information during a crisis, other actors such as organizations also have a role in risk communication. This can be public, private and voluntary organizations such as municipalities, authorities and aid organizations (ibid p.87). Scientists studying organizational risk communication divides the research into two alignment called form and content. The form focuses on how the organization act and the content deal with what the organization communicates i.e. the message. Furthermore, researchers agree on how organizations should act in a crisis, i.e. the form. Effective risk communication is built up by three factors; quickly convey information about the crisis, correct information as well as an open and objective organization. These modes of action are important

in order to create and convey trust to the audience, which is essential for effective communication. However, researchers disagree regarding the content and the design of the information and message. The strategies vary depending on who the sender is. But there is a trend to adopt the blame, this in order to - once again - preserve credibility and the image of the organization (ibid, p.88-89).

Vulnerable groups & communication inequalities

Risk communication must address the specific needs of multiple populations, including the more vulnerable.

(Hutchins et al. 2009 in: Cairns, de Andrade & MacDonald 2013, p.1554)

People should be given the possibility to make informed choices, but awareness is needed regarding their different prerequisites and that everyone will not have the possibility to act 100% properly on information because of diverse needs and interests (Cairns, de Andrade & MacDonald 2013, p.1556). People with higher socioeconomic position including variables such as race, gender, age, education, employment, income, social networks, etc. are often exposed to more relevant and a larger amount of information, which supports them in shielding themselves from the direct or indirect consequences of a disaster (Viswanath 2006, p.222; Taylor-Clark, Viswanath & Blendon 2010, p.222 & 224). In the direct presence of a disaster, three components are vital: “access”, “understanding/processing” and “utilization”, that is to be informed, to understand the scope of the information and in the last stage to have the possibility to act on it. Research shows that higher SES groups significantly have a higher responsiveness in all three stages, with being exposed to evacuation messages being the most important one (Taylor-Clark, Viswanath & Blendon 2010, p.226-227).

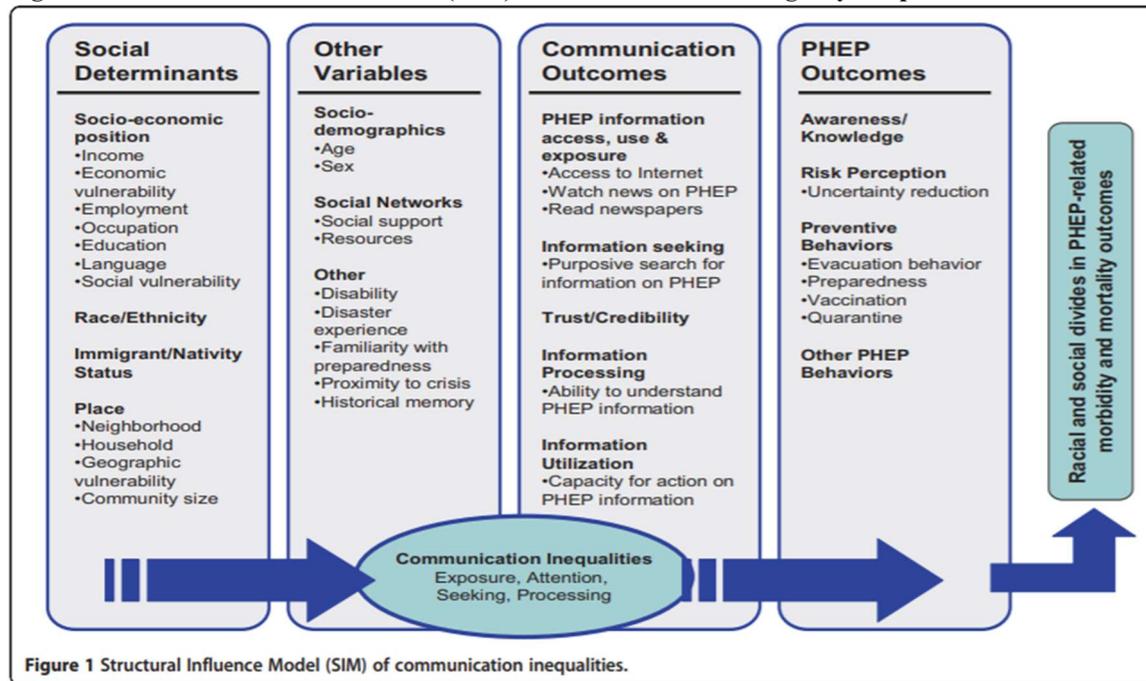
Ulmer, Sellnow & Seeger address the importance to consider the diversity and communication needs of diverse groups and stakeholders in risk communication. Particular audience may have specific communication needs or desires. Furthermore, presenting three options in developing crisis messages for underrepresented populations. i) *Cultural-neutral approach* - imply that all stakeholders and groups act on and access crisis communication information in similar. An example of this approach was the crisis communication during Hurricane Katrina. The construction and the presentation of the crisis communication during this catastrophe did not consider or did not have concern for the socioeconomic background or crisis communication needs of African American and other underrepresented groups in New Orleans. ii) *Culturally-sensitive approach* - imply that crisis communication messages should be adapted by cataloguing cultural characteristics of underrepresented groups to meet their crisis communication needs. Some groups may prefer information provided by members of their own cultural group, others at certain locations, such as churches or community gathering places. Others may want crisis messages to contain certain terms or be written at a particular literacy level. iii) *Culture-centered approach* - develops the culturally-sensitive approach further by including underrepresented populations in preparing for and communicating about crisis. Underrepresented stakeholders would thereby be involved in determining who would present their crisis messages and in what manner. The approach suggests that partnerships with underrepresented populations should be developed prior to a crisis to ensure effective communication with these groups following an event (Ulmer, Sellnow & Seeger 2011, p.47-48).

Scholars findings also suggest that social ties play a crucial role in individual's response and shielding from external threats. According to the research by Chuang et al., social capital is a determinant for "health protective behavior" such as vaccinations, wearing a face mask or washing hand more frequently during a disease outbreak. According to the model by Szreter and Woolcock (2004), social capital consists of; bonding (to have close relationships with neighbors), bridging (member of an association of some kind) and linking (and connectedness to the government and other institutional powers) (in: Chuang et al. 2015, p.2). Chuang et al. comes to the conclusion that bonding social capital (close relationship with neighbors) was elevating all health protecting behaviors through spread of information by trusted individuals. Awareness was created through social networks. Also, peer pressure and feelings of moral responsibility might have played a role here. Increasing community level social capital can prevent spread of infectious disease (ibid, p.7) The authors conclude that: bonding and linking social capital should be promoted by the government to increase the protection among a population (ibid, p.11).

Structural Influence Model (SIM) of Public Health Emergency Preparedness Communication

This model is developed by Viswanath K, Ramanadhan S-R, Kontos E-Z. (2007) and has frequently appeared in studies regarding health communication and information. The model links social determinants (e.g., race/ethnicity and socioeconomic status) with Public Health Emergency Preparedness (PHEP) outcomes mediated through communication, see *Figure 2* (Lin et al. 2014a, p.2). According to SIM, public communications can influence health by raising awareness, providing information, and reinforcing knowledge and behaviors. However, communication inequalities can affect people's attention to, processing of, and acting upon health information and the consequential behavioral outcomes, thereby increase the gap among social groups (Lin et al. 2014b, p.50). In this thesis SIM will be used to investigate and explain the results of countries strategies and plans related to risk communication. Further, to clarify the factors behind succeeded and unsuccessful communication strategies related to an epidemic.

Figure 2. Structural Influence Model (SIM) of Public Health Emergency Preparedness Communications



Adapted from: Lin et al. (2014a, p.5)

The Digital Divide

Already in 1996, when the internet had just seen the light of day, Allan Hammond pointed out that the risk was that many of the less fortunate in society would get left behind in the rapid development of new technologies, these would in the future be essential to take part in society and be reached by public services. For example, poorer or remote cities that would not be able to partake in finance and commerce (Hammond 1996, p.186). Poorer citizens that would not be able to call for help in an emergency (ibid, p.188), or talented students with no literacy for communication devices that would be excluded from education and highly qualified jobs (ibid, p.189). Hammond also pointed out digital tools as the fastest way to inform oneself about politics and as well as the fastest way to spread one's own political message. Lower levels of education and skills is a risk factor for exclusion and infringements to citizens freedom of speech (ibid, p.192). Those who best controlled the technology came out as winners in the US-election in 1994, while minorities were portrayed in an unfair and stereotypical way, which they had little control over due to their almost insignificant representation in media ownership, the same was valid for women (ibid, p.191). Big disparities were also evident between groups of different socioeconomic status (ibid, p.196).

Today, significant progress in the fields of biomedical engineering together with new communication technologies gives us the tools to interfere the cycle of many diseases and stop them. But the rich are still getting richer and the poor getting poorer when it comes to health and information (Viswanath 2006, p.249). The recognition of Allan Hammond in 1996 now seems distant in time, but many of these challenges still remain.

The connectivity of the new media was believed to be the start of an electronic democracy (Hammond 1996, p.181). As it was increasing the opportunity for the (American) people to be connected to their friends, increase available services and make it possible for them to do their work from a distance and call for help in case of an emergency. But the expansion of such networks having mainly a commercial aim, lead to leaving those who are

older or with a lower purchasing power behind as these are viewed as “undesirable markets” (ibid, p.182). The new interconnectedness between different mediums should according to Hammond, not be seen as an information highway, but rather as a national nervous system. Where the parts that are not actively used wither away and die - in this case of non-access to information and communication (ibid, p.184).

People who are lacking access to the internet today, can according to the NGO Nethope be divided into four groups; 1) those who either can't afford a subscription even though a connection is available 2) those who don't see a value in their context compared to the cost 3) people who live in an area where there is no infrastructure that can provide them with a connection, and 4) The last and most vulnerable group is living in a remote area with no infrastructure and would not have the economical means to invest in internet access even if it was available (Nethope 2015, p.30). SPIDER concludes, that in their mapping of HIV/AIDS epidemic, many of the rural inhabitants lack the access to information systems that would help them to shield themselves from disease. The problems mainly consist of lack of infrastructure and language barriers (SPIDER 2007, p.34).

There are several dimensions of communication inequality, where the first is access to and use of information channels, the different groups of this dimension are described above with reference to Nethope. The second being attention to and processing of health information. Thirdly there can be disparities in the ability to act on provided information (Viswanath 2006, p.222).

Some disastrous events and their outcomes can be connected to this problematic exclusion. When hurricane Katrina struck New Orleans in 2005, the following discussion in the media was concerning why many of the residents stayed in their homes even though the class 5 hurricane was closing in. Many of them was disregarded as “irrational” (Taylor-Clark, Viswanath & Blendon 2010, p.221). This unfair portrayal of the victims fails to recognize that for example transportation (physical barriers) also play a big role (ibid, p.227). As referred to earlier in this chapter, Lin et al. research communication inequalities and how they were present during the A(H1N1)pdm09 pandemic. They ask how the public could receive, understand and act upon government information, depending on race, education, income, etc. (Lin et al. 2014a, p.1). They conclude that older people, groups of higher income and education levels as well as homeownership was linked with higher knowledge about A(H1N1)pdm09. Also, the tendency to adopt health protective behavior was higher among groups with a higher socioeconomic status (ibid, p.7). They also highlight that people with different education levels have a disposition toward different information sources. As shown in their data, groups with lower education gravitate more towards the television for information while those with higher education more often turned to the internet (ibid, p.8).

The audience (receptors of communication) needs to be carefully identified, defined and characterized (Viswanath 2006, p.237) Psychological characteristics needs to play a big role (Cairns, de Andrade & MacDonald 2013, p.1555; Viswanath 2006, p.238). Cooperation with different strategic partners for support in disseminating information, for credibility and broadening reach (Viswanath 2006, p.241-42). Channels for dissemination needs to be chosen carefully, as different channels complement each other. Reach, control over the message, intensity and cost will determine the choice (ibid, p.242-243). Example of channels are interpersonal (word of mouth), organizational, mass media and social media. Choice should be based on: Demography, race/ethnicity, lifestyle and orientation (ibid, p.249).

The government needs to understand how social relationships and networks operate to adequately respond to the needs of the people. Engagement from the authorities side, with different social networks can help to reach a larger part of the population and to make them understand the risk in an appropriate way (Taylor-Clark, Viswanath & Blendon 2010, p.222) The government also needs to be adaptable to change their routines and their communication practices along the way, setting up a surveillance system with particular focus on disadvantaged groups. Important information such as health information needs, information seeking practices, media use and current knowledge base (Viswanath 2006, p.249).

Two major challenges are underlined: 1) Present information in an understandable way (language, etc.) in appropriate channels, it will be difficult because of the many stakeholders disseminating information. 2) Make sure that information is available to those who need it the most, those with a lower SES (Viswanath 2006, p.217 & 224).

Summary of the theoretical framework

Government trust can be seen as the foundation structure of strengthening a government's ability to implement regulations without coercion. Central to enhancement of trust is government performance, mainly regarding economic policy but also social policies such as the function of welfare systems. The trust needs to be constantly cultivated through transparency, adherence and responsiveness towards the public's opinions and criticism. The circumstances during an epidemic requires this to be executed quickly and precise. With the public trusting that following guidelines will protect them, in combination with correctly comprehension of risks, the response efficiency is significantly bolstered as a flexible approach builds resilience.

Crisis & risk communication theory explains how information during a risk should be effectively communicated with the public in order to achieve requested compliance and mitigate panic among the audience. The communication should be timely, consistent, transparent and flexible to the development of the crisis. There must be a variety of communication channels in mediating the information as well as specifically designed information in order to reach different population groups who hold different communication and compliance needs. People's risk perception will determine their compliance towards the risk communication. Therefore, responsiveness and evaluation of the public risk perception is a priority in order to convey accurate risk information and receive a desirable response.

Vulnerable groups can be subjected to exclusion on various levels and of various kinds, one of them being not having access to networks through which information can be both received and dispatched, this inability to partake through mediated information is also referred to as the Digital Divide. This has its foundation in a weak financial position but also other factors such as language barriers, ethnicity, education level, remote living conditions, occupational hazards and limited possibility to shield oneself from risks. Communication inequalities emerged mainly through the notion that the public consist of a homogenous mass with equal possibilities to access information and also, to act upon that information. The structural influence model (SIM) shows the linkages between social determinants and PHEP, mediated by communication. Access to various mediums as well as amount of exposure, receptivity, trust and information processing and utilization are all influencing how well individuals can successfully shield themselves from disaster threats. To overcome these

barriers, psychological, socioeconomic and culturally sensitive approaches with a special attention to the communication method of choice needs to be executed.

Method

This chapter serves to motivate and explain the methodological approach, collection and analysis of data as well as critically reflecting on these choices. A literature- and case analysis has been conducted. Secondary data through scientific books and articles, grey literature and statistical data has been combined to provide a comprehensive understanding. The topic has been examined through a social scientific point of view and not a medical one.

The search engines SöderScholar, GoogleScholar, Scopus and KCI-Korean Journal Database has been used to find theories and empirical material. The material was limited to the English language. Key search terms: Vietnam, South Korea, risk communication, information inequality, influenza, pandemic, epidemic, Avian influenza, H1N1, MERS, Covid-19, risk communication strategies, government trust, ICT access, ICT4D, digital divide, health inequality, socioeconomic status, vulnerable groups, public health emergency preparedness. Statistics has been collected from: International Telecommunications Union and Worldometer.

The study objects, South Korea and Vietnam, have been selected in accordance with two criteria. i) Historically affected by outbreaks of novel influenza viruses. ii) Have developed a national plan for influenza preparedness and risk management published on the WHO website: WHO Influenza - National Plans for Pandemic Preparedness and Risk Management (WHO 2020b).

The empirical data consisting of risk communication strategies and outcomes of the two study objects South Korea and Vietnam was organized in seven subgroups in order to achieve a systematic structure. The subgroups have partly been adapted from the WHO guideline *Communicating Risk in Public Health Emergencies: A WHO guideline for emergency risk communication (ERC) policy and practice* (WHO 2018c). Alterations and additions have been made in accordance with the nature of the study findings. The empirical results for strategies and outcomes are divided in seven subgroups for both study objects.

Governance & leadership (trust)

How is the governmental organization and management conducted in order to foster legitimacy and trust?

Communication channels

Which media and communication channels are being used to convey risk communication messages?

Messages

What is communicated?

Communicating uncertainty (transparency)

Is transparency apparent in the risk communication strategy? *How* are risk communication messages communicated?

Community engagement (compliance)

How is the public responding to the risk communication messages?

Inequality & access

Are there possible failures in the information flow, that prevents vulnerable groups from receiving or acting on risk communication messages?

Adaption to a diverse public

Is the public as a heterogenous group acknowledged?

After sorting the empirical data under these subgroups, theories were applied to explain the empirical results and their meaning for risk communication efforts in South Korea and Vietnam.

Limitations

Risk communication includes all type of communication during an event of an emergency, for example inter-agency communication and communication between health professionals. This study will be limited to the risk communication from authorities directed towards the population of a country to mitigate the spread of influenza disease.

Only secondary sources of empirical data have been used and hence no data collection has taken place to facilitate the empirical support of this study in particular. We are aware of the many uncertainties related to statistical data that will affect the results. E.g. irregular collection of statistics, different methods of collection, underreported statistics, statistical gaps, etc. Preferably, firsthand data on the risk communication to the national epidemics from the governments of South Korea and Vietnam should be analyzed. Suggestively through surveys within affected populations in different regions. Age, income, education level, ICT access and risk communication messages received from the government should be included. As the covid-19 is a current pandemic the facts and information used in this thesis will be based mainly on news sources and national authorities publications as scientific sources is still scarce.

There are indications that a revised and updated version of the South Korean influenza preparedness plans from 2006 exists, but no published version has been found. Other documents that might be of interest, such as the National Plan for Infectious Disease Control and Prevention 2013 (WHO 2017a, p.7), Risk Communication Standard Operating Procedure for Public Health Emergencies 2017 and Risk Communication Guideline for Public Health Emergencies 2017 are neither public available (WHO 2017a, p.44-47; KCDC, n.d).

The Vietnamese influenza preparedness plan revised is succeeded by several documents, these could possibly give a more detailed view on risk communication efforts. These include; the Mitigation of Zoonotic Diseases for the Period 2016-2020, the National Strategic Framework for Avian and Human Influenza Communications, A risk communication plan (developed in 2013) for the period 2017–2021, as well as a Standard Operating Procedure

for risk communications developed in 2015. However, neither of these documents are publicly available (WHO 2017b). Further, a master plan on health risk communication for 2020-2025 is currently being developed (Park 2019). It is assessed that the empirical data from the documents included in this study is enough to analyze the risk communication strategies for both study objects.

There are countless factors that contribute to a rapid and uncontrollable spread of epidemics and pandemics, sometimes crisis preparedness and communication efforts are fruitless regardless of the resources invested. This thesis lacks the full scope to take all these factors into account and will solely focus on risk communication strategies and mapping its possible outcomes.

Empirical data

The empirical data is structured as followed. Firstly, selected epidemics and ICT access in each study object will be presented shortly. Secondly, the empirical data of both the national influenza preparedness plans and scientific articles on risk communication outcomes in relation to the epidemics will be summarized. This data is presented through grouping the findings relating to the same topics of risk communication in each subgroup, *see Appendixes 1-6*.

South Korea

Selected influenza outbreaks in South Korea

“The Swine flu” A/H1N1 pandemic 2009

The first report of a A(H1N1)pdm09 case in South Korea came on April 28th 2009 (Lee et al. 2013). Between May 2009 and August 2010, 750,000 cases of pandemic influenza A(H1N1)pdm09 were confirmed by laboratory test. The A(H1N1)pdm09-related death toll was estimated to reach 252 individuals, resulting in a case-fatality ratio on 0.03% in South Korea. However, the mortality rate of A(H1N1)pdm09-associated pneumonia was 7.2% (Kim 2016, p.71).

Middle East Respiratory Syndrome (MERS) 2015

The MERS epidemic in South Korea has had a huge impact on their society. There had never been cases of MERS in South Korea before so the rapid transmission in the country was a result inadequate awareness, preparation and quarantine requirements as well as slow diagnostics and delayed information to the public. The outbreak began on May 20th, 2015. The first diagnosed patient got infected on a business trip in the Middle East. This patient is referred to as the “super-spreader” as he infected 91 people due to his many hospital visits before he got diagnosed. A total of 186 cases were confirmed with 38 deaths resulting in a case fatality ratio on 20,4%. Nearly 17 thousand people were quarantined (Asia-Europe Foundation (ASEF) & KCDC 2017, p. 8-10). South Korea had the highest numbers of cases outside the Middle East (Vox 2020).

Covid-19 (SARS-CoV-2) 2020

The first cases in South Korea were reported in late January, and then surged a few weeks later resulting in over 5000 infected in February, one of the highest numbers of infected cases in the world (Vox 2020). Authorities launched a massive contact-tracing and testing regime to identify and then isolate infected people, even setting up drive-through testing centers. On March 18th the country has tested more people per capita than any country in the world — a total of nearly 300,000 people (Zastrow 2020). Due to lessons learned from the previous outbreak of MERS in 2015, South Korea was well prepared to face the pandemic. They implemented fast actions in an early stage and manage to flatten their curve relatively fast. Besides the contact-tracing which means contacting every person an infected person has been close to (human to human transmission), South Korea also uses another strategy to trace and map infected peoples living patterns. During a disease outbreak, the government can collect patient's data and security footage, to log and share them online so other people know what places to avoid in order to prevent infection (Vox 2020). When a person tests positive, their city or district might send out an alert to people living nearby about their movements before being diagnosed. A typical alert can contain the infected person's age and gender, and a detailed log of their movements. This type of surveillance system has got a lot of attention and been questioning whether it is a violation of privacy. A consequence could be that people with symptoms avoid testing due to the fear of getting identified and thereby face stigmatization (Ward 2020). However, a majority support the government's strategies, most people “preferred the public good to individual rights”. Through the extensive tracing, testing and isolation measures — along with campaigns encouraging people to avoid large gatherings, the government has refrained from imposing a lockdown (Zastrow 2020; Vox 2020). As of May 20th, the country had reported 11 110 confirmed cases, 263 deaths and 10 066 recovered cases (Worldometer 2020a).

ICT access in South Korea

South Korea has for long been a technological flagship where information and communication technology has had a rapid development, *see Table 1*. ICT has been a priority and South Korea was the second country in the world to use the internet in 1982 (Kim & Jeong 2010, p.36). Along with the widespread adoption of broadband, the digital divide has been well recognized by the government. In 1984 the government established the Information Technology Training Centre (ITTC) to educate the public in order to reduce the gap. Free computer classes were offered to rural and agricultural areas in 1988, followed by several initiatives to provide ICT access and skills to different target groups. In the white paper “Bridging the Digital Divide” 2003, lack of internet access was identified as a socioeconomic issue along with other social-exclusion parameters, such as income, education and region. In order to improve the social disadvantages, the government provide ubiquitous access to the internet but failed to equip users with appropriate skills and knowledge (Park & Jae Kim 2014, p.72-73).

In June 2007, 80% of the South Korean households owned a computer and 75,5% of the population above 6 years of age used the internet with the main purpose to collect data and research (Kim & Jeong 2010, p.36-38). However, the digital divide was still visible when only 30,8% of the households with a monthly income below 1 million won (~US\$ 100) owned a

computer and the internet usage differed depending on age, gender and education level (ibid, p.44-46).

The broadband access is steadily increasing with 82.3% of South Korean household having access in 2012 and 78% of the population above 3 years of age use the internet, with 85.2% of those using it daily. The same year, 64% of the population used smartphones, where 90.9% used mobile internet (Park & Jae Kim 2014, p.72). The digital divide has been minimized concurrently with the rapid adoption of broadband and the number of people online has increased. Even if the digital divide in its traditional meaning has decreased, the second-level digital divide, meaning the gap in skills and knowledge caused by how people use the internet, persists. The digital divide is still present where people with disabilities, people with low income and elderly are highly represented. However, the gap is currently largest for the agriculture/fishery group, which has always been the most disadvantaged group (ibid, p.77-80).

Table 1. The development over time for ICT access in South Korea

Fixed broadband subscriptions	
2002	10 200 000
2010	17 200 000
2018	(41,6 per 100 inhabitants) 21 200 000
Mobile cellular telephone subscriptions	
2002	32 300 000
2010	50 800 000
2018	(129,7 per 100 inhabitants) 66 400 000
Individuals using the internet	
2002	60%
2010	84%
2018	96%
Fixed telephone subscriptions	
2002	25 700 000
2010	28 500 000
2018	(50,6 per 100 inhabitants) 25 900 000

Source: ITU (2020b)

Key findings South Korea - Pandemic Influenza Preparedness and Response Plan 2006

For complete empirical data, see Appendix 1.

In the preparedness plan, its visible that building trust is a key objective for the South Korean government. They intend to “act with consistency” (for example by choosing one spokesperson) and continuously provide up-to-date information through pre-scheduled briefings to reach this goal. However, they aim to do so among the “general public”. This

indicates a lack of understanding of the public as a heterogeneous group. There is a clear interest to develop risk communication strategies by including a communication specialist in expert groups. The intention is to further develop IT infrastructure, which indicates a bias toward technical solutions for risk communication. The preparedness plan addresses the usage of several communication channels such as, 24 hours operated hotlines (which will ensure two-way communication), phone, cell phone, printed/broadcast, posters and the internet.

Local populations will be reached through local health care facilities. The obligation for the government to inform and give recommendations for health protective behavior even though all information is not yet available is highlighted. Compliance or the case of non-compliance is not addressed. Information accessibility and understandability needs to be ensured, local residents of affected areas should be especially targeted and educated. A Rapid Response Team (RRT) should be dispatched locally to act as a link to the central government. Mapping of various stakeholders and their differences is essential, these should be included in any decision-making processes.

Key findings South Korea - A(H1N1)pdm09 and MERS

For complete empirical data, see Appendix 2.

A study including 3462 participants from two rural and three urban randomly selected communities, shows that 88,5% obtained A(H1N1)pdm09 information through media (TV, radio, newspaper) but the most trusted information came from health care providers. Only 19,9% trusted information coming from the government. Areas of raising awareness, providing sufficient information in a timely manner, and reinforcing public knowledge regarding appropriate protective and preventive behaviors needs to be further developed. It was shown that health protective behavior was practiced more among those who did not support the ruling government. Those reading print newspapers, independently seeking health information (higher education was related to this practice), internet-users and radio-listeners were more likely to get vaccinated than those who didn't. This shows a difference depending on information channel of choice. Lower education showed a greater exposure to entertainment media. Also, people with disabilities had a lower ICT user capacity than those without a disability. Generally, the vaccination compliance was low among groups with low SES. Recommendations for health protective behavior were not communicated on time during the MERS outbreak, resulting in inaccurate rumors and hysteria gaining foothold. Details about which communities were affected was not released, resulting in a lack of trust towards the government. Individuals showed greater compliance if they perceived the epidemic as a severe threat to their health and if they believed that health protective behavior were efficient. Higher education level and information seeking was correlated with more frequent hand washing. Avoidance behavior was correlated with information processing (which is related to higher income), that is to understand health information and act accordingly. The highest incidence rate during A(H1N1)pdm09 outbreak was in Gangwon which is mainly a rural area. Messages needs to be adapted to vulnerable population in greater occurrence, including easier access and appropriate language and form.

Key findings South Korea - Covid-19

For complete empirical data, see Appendix 3.

Many lessons have been learned from the MERS outbreak in 2015 when the government's approach was heavily criticized. KCDC has implemented several changes concerning risk communication, among other things. Communication channels used during the current covid-19 pandemic include; emergency text messages (including targeted text messages), smartphone apps, websites (continuously updated) and twice daily press conferences. Sign language interpreters has been present. The government has also supported public private partnerships, for example a company that has developed a “Global Epidemic Prevention Platform” (GEPP) which is used and also exported, the platform is designed to alert users through an smartphone app if an outbreak is detected in their area. Messages transmitted to the public are warnings regarding infected people being present at a specific location, this made possible to intense surveillance system including contact tracing and collection of personal data such as credit card transactions, GPS location, among others. Extensive campaigns have underlined the importance of avoiding large gatherings, exemplified symptoms to be aware of, location of testing stations and in which pharmacies personal protective equipment is available. Transparency is one of the major priorities for the South Korean government, releasing timely and accurate information regarding for example hospitalizations and general development of the outbreak. A new law has been passed since the MERS outbreak giving the authorities permission to release patient information in an emergent outbreak even though it can be questioned from a viewpoint of individual integrity. The transparent release of information combined with an innovative use of technology and data is pointed out as one of the main strengths of the strategy, as is also minimizes fear and misinformation. The response of the Korean people is characterized by a strong compliance of the government guidelines, this exemplifies with voluntary isolation, social distancing, wearing a face mask, etc. Compliance may have been positively influenced by earlier epidemic experiences.

Vietnam

Selected influenza outbreaks in Vietnam

“The Avian Influenza” (A/H5N1) 2003

H5N1 was detected in Vietnam for the first time in 2001 (Carrel et al. 2010, p.1). Around 110 human cases have been reported in Vietnam, whereof 55-56 deaths. resulting in a fatality rate of 50%. 32 of 64 provinces displayed occurrence of cases (Hanvoravongchai et al. 2010, p.5). Example of patients were chicken traders, fish farmers (using poultry excrements to feed fish) and people who had handled, cooked or eaten infected poultry (Kudo et al. 2012, p.142). During the 2003/2004 outbreak close to the entire population of poultry in Vietnam was culled (Carrel et al. 2010, p.1). When analyzing virus strains from poultry in Vietnam many common features with virus strains from southern China was found, indicating that virus spread across the Vietnamese-Chinese border. Also, the areas with a denser human and poultry population were more severely affected, for example the areas around the large cities Ho Chi Minh and Hanoi (Carrel et al. 2010, p.2).

“The Swine flu” A/H1N1 pandemic 2009

The first case of A(H1N1)pdm09 in Vietnam was detected of May 30st in 2009. This was a student returning from North America. The virus spread rapidly in the country during July 2009 and a total of 11 000 laboratory confirmed cases and 50 deaths were detected from June to December 2009 (MARD & MOH 2011, p. 2; Nguyen et al. 2015, p.216). A second wave of the virus submerged between November 2010 and April 2011 with the peak detected in January 2011. Later, another outbreak was identified in January 2013. The A/H1N1 virus strain is now regarded a seasonal virus that has reoccurred several times in Vietnam (Nguyen et al. 2015, p.220). Vietnam has officially stated that lessons from the A(H1N1)pdm09 should be applied to enhance capacity-building and efficiency in response to future pandemics and epidemics (MARD & MOH 2011, p. xii).

Covid-19 (SARS-CoV-2) 2020

Vietnamese officials began their aggressive fight against the virus already before it was declared a pandemic by WHO on March 11th. As soon as they detected their first case the government recognized covid-19 as a major threat, and even before the first case was detected, all medical facilities were notified and prepared with an official message on January 16th. An “overreaction” according to many but when the first case was confirmed January 23rd in Ho Chi Minh the country's response was already set in motion. Even though sharing a long border with China, the strategy is working very well. Vietnam has to date (May 26th, 2020) only detected 327 cases whereof 278 are already recovered. This far Vietnam has not suffered a single deadly case of covid-19 (Le 2020; Vu & Tran 2020; Worldometer 2020b). Enforcing a quarantine from April 1st, banning gatherings, encouraged people to stay home, wearing face masks and closing borders, schools and public facilities are some of the measures implemented this far. The Vietnamese model is a low-cost version of the mass testing executed by its wealthier neighboring countries, even though targeted testing is also executed for patients with symptoms, those with a travel history and close contacts with infected. A main driver behind Vietnam's rather proactive approach is medical expenses as they realized early on that a wide spread of the virus would quickly overwhelm the healthcare system (Jones 2020; Vu & Tran 2020). On April 30th over 260 000 tests had been analyzed (Le 2020). Isolating at home with a covid-infection is not allowed, which means all patients are detained in public facilities, stocks of protective equipment has been secured which has led to donations of personal protective equipment to both Europe and other countries in Asia (Le 2020; Landguiden 2020b). Questions have inevitably been raised whether the official data with its strikingly low numbers is trustworthy. Consensus from independent representatives from both the medical and diplomatic community claims that there is no reason to doubt the fantastic results Vietnam's battle against covid-19 has shown this far (Le 2020). The nationalistic and collectivist mindset of the Vietnamese people has also contributed positively as it has strengthened the sense of coherence and mutual responsibility to fight covid-19. The fight against the common enemy is a rhetoric commonly used by authorities which encourages this mentality even more (Phuong Nguyen 2020).

ICT access in Vietnam

In Vietnam mobile technology is one of the dominant communication and information mediums (Lai, Chib, Ling 2018, p.734). It is also shown that the Vietnamese often use a variety of media channels for updates in disaster related situations and independently search for information (ibid, p.747). On the contrary, findings also suggest that the information literacy among upper secondary school students is not at a sufficient level and also reveal gender differences (Ngo, Pickard & Walton 2019, p.453). Vietnam has had a rapid technical development in the last decade, *see Table 2*. The increasing use of the internet and social media, has led to Vietnamese adopting knowledge and literacy to include the technology in their lives (Duong 2019, p.23). Social media is used mainly to maintain relationships, as well as for shopping and entertainment (ibid, p. 18). The state softened their attitude towards social networks, and Facebook in particular, this because of the major spread and force it constituted among the population. Since then, a Facebook-page for the government and for the Ministry of Health has been launched. The fan page, Bộ Trưởng Bộ Y Tế, was announced on January 15th 2015 to enable it to connect effectively and rapidly with users, to date - they have almost 364 000 followers (ibid, p.27). The Vietnamese government (Thông tin Chính phủ) officially announced the launch of its page on Facebook on 21 October 2015, as of May 20th, 2020 they have 875 000 followers. The page is used for press releases and promotion of activities. Facebook, which was earlier prohibited and discredited by the government was now publicly celebrated as a ‘an essential and unprohibited need’ that constitutes a ‘sharper communication tools than conventional methods’ (ibid, p.27).

Today, more than 70% of Vietnam's population have internet access. With 58 million accounts on Facebook, they make up the seventh largest nationality present on the platform. 62 million Vietnamese have Google-accounts, something which is banned in their political equal communist one-party state China. This is a major difference. In reference to this, for example not being transparent with an outbreak of an infectious disease would only do harm to the legitimacy of the government, as people have the possibility to freely look for information from international media channels as well as contacting peers abroad. This is also the road Prime Minister Phúc has chosen, transparency and proactivity (Phuong Nguyen 2020).

When surveying Vietnamese youth about their media habits many reply that their primary news source is the internet, preferably online news channels. While those aged 35 and older state television to be their main news source (74% of respondents), while only 49% of those aged 15-34 discloses the same, the difference is striking. The growing availability of mobile phones with web browsers is pointed out as a main driver for this development (AIB News 2015). There are several projects serving to broaden access to the internet for a larger part of Vietnam's inhabitants, mainly to connect rural households of which only 1% had internet access in 2008, when the number for the whole country was almost 30%. This is particularly relevant as 70% is Vietnam's population were inhabitants of rural areas in 2008 (Tuan 2011, p.7). The Vietnamese government has established strategies in the aim to develop the country's ICT access. Programs has been executed in order to narrow the digital divide gap between urban and rural areas, and to promote socioeconomic development (ibid, p.24).

Table 2. The development over time for ICT access in Vietnam

Fixed broadband subscriptions	
2002	1 076
2010	3 700 000
2018	(13,6 per 100 inhabitants) 13 000 000
Mobile cellular telephone subscriptions	
2002	1 900 000
2010	111 600 000
2018	(147,2 per 100 inhabitants) 140 600 000
Individuals using the internet	
2002	2%
2010	31%
2018	70%
Fixed telephone subscriptions	
2002	3 900 000
2010	14 400 000
2018	(4,5 per 100 inhabitants) 4 300 000

Source: ITU (2020b)

Key findings Vietnam - The Vietnam Integrated National Operational Program on Avian Influenza, Pandemic Preparedness and Emerging Infectious Diseases (AIPED) 2011-2015

For complete empirical data, see Appendix 4.

In the Vietnamese preparedness plan, substantial progress when it comes to public awareness and behavioral change among the population is expressed. Models to evaluate these practices will be examined to further perfect and develop the most successful approaches, with the main focus being of public awareness through communication and developing a new and revised communication plan. Services and infrastructure will be expanded to better support communication practices. For example, a better system for informing medical staff and the general public about actions during a pandemic has been established, information needs to flow from the central to the local level and the opposite. A variety of stakeholders, public, private and civil society, from all levels, needs to be involved in the process and continually brief and updated on the current situation, including the Ministry of Information and Communication. It is essential to have a transdisciplinary approach to prevent and manage communicable diseases. Relevant information needs to be translated into policies and programs in a flexible manner that adapts to the evolution of the local epidemic and disseminated through communication efforts and social marketing. Responsibilities among the stakeholders involved needs to be clear. It is underlined that risk communication practices during a health emergency needs evaluation and further development.

Channels used for risk communication include; print, electronic and media materials, mass media, targeted text messages, health managers and health workers in local communities,

local dissemination campaigns, annual campaigns during high risk periods and school based educational campaigns. Messages conveyed to the public should include; handwashing practices, food safety, livestock management, information on ongoing outbreak and transmissions patterns. Transparency will be ensured through close collaboration with transnational organizations. A timely risk communication is essential, and an improved coordination and establishment of reliable mechanisms in cooperation with the media will contribute to this cause. Engagement with the local community such as community leaders, local media and workers from key occupations are important to address rumors and misinformation to improve compliance in communities. Social support systems need to be enforced to ensure that it is possible for communities to comply with recommendations. Government communication efforts needs to be evaluated and measured as compliance is corresponding directly with how well developed these are.

Communication efforts needs to consider and target that poverty playing a role in inaccurate livestock management and thereby increased exposure to risk is a driving factor behind increasing infections. RRT should support local communities in their management of an outbreak, especially in poor and isolated areas. There is important to maintain internet networks and provide computers in all areas for accurate surveillance possibilities.

Communication strategies and behavior change campaigns needs to be sensitive to acceptance and risk perception of the public and understanding of the local context in communities, this to enable a bottom up planning approach and to take provincial priorities into consideration. Especially individuals involved in the poultry industry needs to be targeted. Organizations active to reach vulnerable groups should be involved, such as the Vietnam Red Cross and various unions. Target groups with a low risk perception require extra communication efforts.

Key findings Vietnam - H5N1 & A(H1N1)pdm09

For complete empirical data, see Appendix 5.

The Vietnamese government has cooperated and communication closely with strategies with external partners to shape their response to these outbreaks. Also, national organization such as the Vietnam Women's Union and Father Front of Vietnam has been incorporated to disseminate information, such as distributing leaflets and leading workshops to target groups in local communities, in a timely manner. Because of their social capital among communities they became a trusted source and bolster local ownership, this strengthened the public compliance. However, the collaboration between governmental and non-governmental organization has been criticized, for leading to confusion, inconsistent messages and low impact results because of lacking coordination and communication. Evaluation of activities and behavioral surveillance needs to be further strengthened to insure sensitivity in the local context. Other channels used were; local radio stations, local community loudspeakers, flyers, TV, newspapers and meetings. Mass media is an efficient source of communication because of its close relationship with the state and its strong influence on behavioral changes. The weakness of mass media in rural areas, however, demands a different approach and made communication rely more heavily on other mediums such as the local authorities, health care institutions, educational institutions, military units and Father Front of Vietnam and its affiliates. Messages included: safe handling of livestock, basic health hygiene such as hand

washing and cough and sneezing etiquette, with the main focus being on preventive measures. Some evidence that this was adapted among local communities was found in relation to Avian Influenza, this could include using gloves for livestock management or fencing of poultry. Very few messages related directly to pandemic influenza and improvement regarding respiratory health hygiene and when to seek medical care is needed. The 2009 law on Prevention and Control of Infectious Disease require information, education and communication responsibilities to be met from various ministries. Targeted risk communication messages were also implemented. The public were satisfied with the clear and timely communication. Timing, targeting the right audience and generation of emergency messages is essential and a responsibility of MARD and MOH. Regarding the outreach of the communication a study has shown that 75% had good knowledge on pandemic influenza personal prevention, while only 37% had good knowledge on community prevention. Hand washing and wearing a facemask was perceived as the most effective preventive measure among 97%. School education programs is regarded one of the most successful and effective strategy in raising public awareness. However, even if knowledge was high community preventive actions were poor. Even though excessive effort is made for a local outreach, many information materials are not available in local languages. A study mapping response time for implementing measures showed that when cases were identified in the Asian region communications with health officials from the Mekong Basin region was initiated. When domestic cases were identified; A spokesperson were identified and consistent risk communication to general and targeted public continued to avoid panic.

Key findings Vietnam - Covid-19

For complete empirical data, see Appendix 6.

62% of the Vietnamese population find that their government has enforced the right amount of restrictions in its response to covid-19, which is a higher rate than South Korea. The Prime Minister Phúc and other political leaders has enjoyed strong support from the public, the Vietnamese are among the strongest supporters globally of their government's response measures. Even before covid-19 was categorized as a pandemic by WHO, Vietnam launched a smartphone application where users could report their medical condition. The communication channels used during the pandemic; teleconferences with 700 hospitals nationwide, local centers for disease control and prevention, government run media campaign including a viral music video, regular SMS updates, a live chat, social media channels (Facebook-page, Zalo-page, TikTok-site with a dance challenge, YouTube, Instagram), private sector networks, informational videos in sign language, local influencers, websites, smartphone applications which has been used for quick information dissemination and to address rumors, also partly by legal actions against people spreading inaccurate information. State media has constantly followed and reported around the development of severely affected regions. The rhetoric used to distribute information from the government can be categorized as a war rhetoric with lines such as "fighting the epidemic is like fighting against the enemy". Messages distributed to the public includes personal protective measures, do's and don'ts, updates on the progress of hospitalized patients, as well as patient's origin and entrance to Vietnam, reports from other countries progress and reports regarding Vietnam's success in their response.

The communication from the government has been proactive and detailed, this was questioned as some point, but the government responded to this criticism by referring to the close cooperation with external partners such as the Centers for Disease Control and Prevention USA and the open data being shared globally. Engagement and solidarity of citizens has been prevalent during the pandemic. Social distancing, wearing face masks, quarantine has been well adhered to. This can partly be attributed to the experience the Vietnamese people has with similar situation along with the sense of national coherence in fighting a “common enemy”. However, a driver is also the well-established “loyal reporting system” that is being practiced by party members throughout the whole society.

Analysis & interpretation

The theoretical framework has highlighted the risk of vulnerable groups with a lower SES can possibly be subjects to exclusion in disaster situations. This trough a discrepancy in lifestyle, culture, perception and possibilities from those with a higher SES (Viswanath 2006, p.222; Taylor-Clark, Viswanath & Blendon 2010, p.222 & 224). The importance of highlighting the situation for vulnerable population in this context is apparent. Firstly, because a novel influenza outbreak is to be considered as a disaster in terms of the threat it poses. Secondly, the importance of compliance to non-pharmaceutical interventions from the population, imposed or recommended by the state, are essential for mitigating further transmission of the virus. Compliance depends on exposure and responsiveness to such information (Taylor-Clark, Viswanath & Blendon 2010, p.226-227; Levi & Stoker 2000, p.492; Kampen, Van De Walle & Bouckaert 2006, p.387).

ICT Access of the South Korean people

Both the Digital Divide theory and the Structural Influence Model (SIM) points out how SES, access and literacy concerning communication technology correlates. Already in the mid 80's South Korea had a clear approach regarding citizen's access to the internet that coincides with both the Digital Divide theory and SIM, by educating rural households and agricultural workers in an attempt to bridge the divide (Park & Jae Kim 2014, p.72-73). However, by being a technological pioneer and a high-income country with a widespread access of fixed broadband, mobile cellular telephone prescriptions and individuals using the internet, *see Table 1*, patterns of exclusion can be reinforced. The Digital Divide theory emphasizes the bias of assuming general access to technology. Other modes of communications could be neglected in striving mainly for the development of modern communication solutions and thereby neglect the minority of individuals without access or with low skills or quality of usage in a greater disadvantage. In the influenza preparedness plan of South Korea from 2006 development of new infrastructure is a main goal, suggesting a bias towards technical solutions for risk communication. In the case of South Korea, 96% of the population had access to the internet in 2018 which means that 4% or 2 million people lack access and thereby risk exclusion (ITU 2020b).

Park and Jae Kim emphasize that the traditional digital gap in access has minimized but the second-level digital divide which refers to technological illiteracy has not followed accordingly. The groups exposed to the second-level digital divide is mainly represented by

people with disabilities, low income and the elderly, the largest gap currently affecting fishery- and agricultural workers. Meaning that the South Korean government's effort to narrow the digital divide gap from the 80's onwards has only partly been successful. However, some groups remain excluded and the problem has rather shifted to the second level digital divide, meaning lack of skills and quality of use despite technological access (Park & Jae Kim 2014, p.77-80).

In June 2007, it was noted that only 31% of South Korean households with an income below 1 million won (~US\$ 100) owned a computer, there was also differences based on education level, age and gender (Kim & Jeong 2010, p. 44-46). During the A(H1N1)pdm09 outbreak differences was visible regarding the spread of the virus. People connected to the Medical Aid Program (low SES) became more severely ill than those with National Health Insurance, the reason to this could be insufficient hygiene, low access to- and late medical treatment. Also, rural areas and provinces had a higher incidence of A(H1N1)pdm09, for both younger and older patients, even though the infection was on average impacting young people at a higher rate and the rural areas have mainly elderly residents (Choi et al. p.1-4 & 8). Hence, the combination of these findings suggests a connection between people affected by second level digital divide being lower income, elderly, fishery- and agricultural workers. In addition 70% of low income households did not own a computer in 2007, people supported by the Medical Aid program (low SES) had a higher incidence and severity during the A(H1N1)pdm09 outbreak as well as a higher incidence in rural areas. SIM connects communication inequalities with a lower practice of preventive behavior as a result of lower risk perception and awareness. This in turn deriving from a lowered access or comprehension of risk communication messages. The explanation can according to the Digital Divide theory be attributed to information inequality due to the lower SES of this group in South Korea. This indicates a structural problem which increases health risks for vulnerable groups.

ICT Access of the Vietnamese people

The digital divide gap in Vietnam has been and is still a challenge, in 2008 70% of the population lived in rural areas and only 1% of the rural households had internet access, the total access of the whole country was 30% (Tuan 2011, p.7). However, Vietnam as a lower middle-income country has had a tremendously rapid technological development the past decade, *see Table 2*. One of the reasons to this development being the government initiated digital divide projects (*ibid*, p.24). This indicates awareness of the risk of exclusion of lower SES groups. With mobile technology being dominant today but a rapid upscaling of social media usage stands out in Vietnam's communication technology landscape. This also means that risk communication messages are increasingly conveyed through social media channels even if 31% or 29 million of the Vietnamese population still lacked access to the internet in 2018 (ITU 2020b). Digital Divide theory would propose the same risk here as in South Korea, expansion and bias towards newer technology will possibly widen the gap even more. Also, SIM proposes that these 29 million people could have disadvantages in PHEP due to their SES and thereby be more vulnerable to influenza transmission.

During the outbreak of Avian Influenza in 2003 a connection was found between infected cases and handling of poultry (Kudo et al. 2012, p.142) With preventative actions with attention to socioeconomic and rural determinants in focus, the preparedness plan of Vietnam

acknowledges that poultry workers are at a greater risk of being infected with Avian Influenza. The response from the government being vaccination of poultry and campaigns on safe handling of livestock as well as targeted behavior changing communication programs. This group of risk often live in poor and remote areas, including many of 54 ethnic minority groups (MARD & MOH 2011, p.7, 23 & 45; McKinn et al. 2017, p.2; Målqvist et al. 2013 p.2; Fritzen 2007, p.76). SIM correlates well with this strategy and in theory this should lead to a better protection and safeguarding of vulnerable groups. What is also understood as central in accordance with SIM is to tackle low risk perception among different key target groups, which otherwise could lead to lowered PHEP (MARD & MOH 2011, p.60-61).

Risk communication strategy and outcomes

Messages

The preparedness plan of South Korea states that the public and outbound travelers should be educated on preventive measures and protective behavior such as hand washing and cough etiquette (MOHW & KCDC 2006, p.83, 88 & 109). Information regarding domestic and foreign influenza outbreaks should be communicated to foster awareness (ibid, p.80, 84 & 100) During the A(H1N1)pdm09 outbreak and MERS outbreak in South Korea no empirical data could be found that shows what messages was actually communicated. During the covid-19 outbreak however, messages included warning messages on movements of infected individuals combined with their age and gender, which rooms of a building they visited and if they were wearing a face mask or not. Information to avoid large gatherings, what symptoms to be attentive to, what pharmacies had protective in stock and where to go for testing (Zastrow 2020; Klingebiel 2020).

In Vietnam, the preparedness plan highlights that hand washing, hygiene promotion and food safety information needs to be communicated (MARD & MOH 2011, p.23). Also, seasonal risks connected to livestock management along with safe practices on cooking and handling dead and live poultry as well as knowledge on disease transmission patterns (ibid, p.45 & 60). The goal for communicated messages is ultimately long lasting behavioral changes that result in improved shielding from disease (ibid, p.7 & 85). Messages conveyed during the Avian Influenza and A(H1N1)pdm09 in Vietnam were corresponding to the strategy in conveying messages on handling of livestock (for example fencing poultry and quarantining new poultry), health hygiene and protection when sneezing/coughing. (Hanvoravongchai et al. 2010, p.7; Waisbord, Michaelides & Rasmuson 2008, p.203). However, with the not fully functioning cooperation between involved stakeholders led to mixed and partly inaccurate messages that created confusion and wasted resources (Hai 2009, p.55-56).

During the covid-19 pandemic, the Vietnamese government have used war rhetoric to describe the virus battle with expressions such as “fighting the virus is like fighting an enemy” (Vu & Tran 2020; Jones 2020). The number of and detailed status on every covid-19 patient has been disclosed, underlining the few cases present in the country and also the success of treatment (Phuong Nguyen 2020; Thông tin Chính phủ 2020a). Facebook is a way for the government to present information in a timely manner (La et al. 2020, p.13). Postings on Facebook underline the foreign origin of the transmission and it also highlights news on the virus spread in other countries as well as tributes to the Vietnamese pandemic response from

foreign news media (Thông tin Chính phủ 2020a; Thông tin Chính phủ 2020b; Thông tin Chính phủ 2020c).

According to Olofsson and Öhman, there is no consensus around what type of information risk communication messages should entail to foster trust other than the correctness of information (Olofsson & Öhman 2009, p.88-89). The sources of this study show that in relation to the covid-pandemic there is no reason to doubt the information communicated by either Vietnam or South Korea, only the fact that the pandemic is ongoing and evidence and reports are being published at a higher speed may be leading to information insecurities (Le 2020). South Korea learned the hard way that messages need to include the right information during the MERS-outbreak in 2015 (Yang & Lee 2020). The Vietnamese rhetoric and focus on foreign transmission being the main reason for covid-19 cases as well as explicitly stating the status of patients may be connected to creating the sense of solidarity and confidence among the population. The theory points out this as a successful strategy to enhance trust, ensure transparency and thereby also strengthen compliance, this can have a tremendous impact in the function of the public health system and response to an influenza outbreak (Citrin & Stoker 2018, p.59; Ellinas & Lamprianou 2014, p.248; Gudi & Tiwari 2020, p.108; Cairns, de Andrade & MacDonald 2013, p.1550 & 1557).

Channels

Television, radio and internet, as well as books and newspapers are the common channels for risk communication (Olofsson & Öhman 2009, p.71). Risk communication during a crisis needs to be “understandable, timely, transparent and coordinated” as well as foster a dialogue with the public (COMBI 2012, p.xii; Cairns, de Andrade & MacDonald 2013, p.1555). The risk communication theory further emphasizes the importance of being aware of people's different needs and desires in receiving and complying to information. This should be taken into account when designing the risk communication message and in the choice of communication channels. Both studied countries has utilized multiple channels for conveying risk communication messages, for example during the A(H1N1)pdm09 outbreak in Vietnam, 88% stated that they received information through flyers, radio, TV spots, newspaper, and meetings (Ngan et al. 2011, p.1). During the ongoing covid-19 pandemic many modern communication tools has been used in Vietnam. For example, Tiktok and YouTube has been used to widely promote handwashing in an appealing way, mainly aimed for children and teenagers, but a wide spread of this more lighthearted messages has been noticeable worldwide. Sign language stop motion videos has been distributed through various online platforms including the official website of the government (Flowers 2020). In Hanoi, a smart app has been launched to inform about preventive measures and live updates on virus transmission. Also, text messages have been distributed regularly to promote personal protective measures as well as a live chat to respond to questions from the public (Jones 2020; La et al. 2020, p. 9). A diverse public and also vulnerable subgroups, such as disabled, are identified through this wide spread of channels and content. No empirical data of the earlier visible strategy to reach out locally through local actors has been found, this may be a result of the ongoing status of the pandemic and that such risk communication methods have not yet been noticed. Viral social media content on the other hand is visible and has a quick and easy outreach because of its form. However, vulnerable groups in the sense of lower SES and possibly a limited ICT access

will not benefit from this more modern approach that is appearing to shift in Vietnam's risk communication strategy over time.

The risk communication strategy and empirical data regarding South Korea suggests that they use a wide range of communication channels with two-way-communication possibilities through operated hotlines, but do not identify vulnerable subgroups among the population. It is mentioned that information should be easy to comprehend and that local authorities should be a source of information, but how this is ensured to reach lower SES groups or vulnerable populations is not further explained (MOHW & KCDC 2006, p.28 & 85). The empirical data shows that groups with a lower education level consume entertainment media to a larger extent in South Korea (Oh, Paek & Hove 2015, p.26). 89% claimed to have obtained information from the TV, radio, and newspapers during A(H1N1)pdm09 outbreak in South Korea (Kim et al. 2014, p.18). Except for news briefings being sign language interpreted (Arirang News 2020). The empirical data included in this study shows merely a request for efforts with special consideration for vulnerable groups which risk communication theory supports as an essential priority in order to achieve desired public compliance and literacy (Lee, Ju & You 2019, p.9; Ulmer, Sellnow & Seeger 2011, p.47-48). However, during the covid-19 pandemic targeted text messages has been conveyed, even though the major risk communication channel has been mobile application notifications based on people's GPS position (Klingebiel 2020; Zastrow 2020; Chung & Soh 2020). This means a wide dissemination reach in relation the ICT access in South Korea, *see Table 1*.

In comparison, the strategy of Vietnam identifies drivers to increased outbreak and transmission risks as poverty and occupational hazards. Measures such as using local networks for information dissemination and education certain vulnerable groups are performed (MARD & MOH 2011, p.85; Waisbord, Michaelides & Rasmuson 2008, p.203). Considering 86% of the population living in poverty belong to ethnic minority groups in Vietnam it's vital that the government recognizes this in their risk communication strategies. Also, targeted campaigns through text messages for specific subgroups is regarded having a good coverage as mobile subscription rate in Vietnam is very high, *see Table 2* (MARD & MOH 2011, p.60). Other infrastructure such as internet network capacity for local facilities is also observed and it is described in detail what type of equipment is needed to enhance network access (*ibid*, p.137). The preparedness plan also recognizes other levels of SES, gender related inequalities can constitute differences in livelihood practices, access to information and access to local networks (*ibid*, p.61) The essentiality of social capital, which local networks possess is used as a resource in Vietnam's influenza response. This is highlighted by Chuang et al. with emphasize on health protective behavior being mediated through social capital (Chuang et al. 2015, p.2). The empirical data from the covid-19 outbreak shows that private sector networks were utilized, for example companies for both white- and blue-collar workers (Flowers 2020).

During the Avian Influenza and the A(H1N1)pdm09 outbreak, a low percentage of the Vietnamese population had internet access. Mass media coverage and outreach was very weak in rural areas (Hai 2009, p.56). This made the government use other risk communication strategies. The effort of risk communication from the state were targeted risk communication messages conveyed and conducted partly through the Vietnam Women's Union during the Avian Influenza outbreak to reach all provinces and to overcome communication barriers (Waisbord, Michaelides & Rasmuson 2008, p.203; Moore & Dausey 2011, p.5). The use of communal loudspeakers during the Avian influenza, was also helping to overcome the fact that

many rural inhabitants lack modern communication equipment (Waisbord, Michaelides & Rasmuson 2008, p.204). In relation to SIM this means that the possibility for PHEP for the people increased by outreach through this channel but does not respond to weather SES was taken in consideration and thereby reaching the most vulnerable. In the context of the Avian Influenza a survey disclosed that among 304 respondents, 75% had good knowledge about personal protective measures and that only 37% had good knowledge on community prevention (Ngan et al. 2011, p.1). Målqvist et al. underlines the importance of information in local languages being available, but if this was a barrier in the context of Avian Influenza is not clear (Målqvist et al. 2013, p.16). Language discrepancies is one of the main barriers for exposure and response to risk communication messages (Viswanath 2006, p.224).

The need to understand and adapt to the local context, as highlighted by Ulmer, Sellnow & Seeger as a *culturally-sensitive approach* is recognized in the preparedness plan of Vietnam (Ulmer, Sellnow & Seeger 2011 p.47-48), its explicitly stated that communication efforts needs to move beyond uniform messages to a homogenous population and instead be targeted messages towards certain exposed groups, before and during the outbreak (MARD & MOH 2011, p.21 & 85). A *culturally-centered approach* can also be identified, as a 'bottom up-approach' in regard to planning for risk communication and executing projects on local level. In combination with assessing the success of risk communication messages, regarding the mode of delivery and their impact on behavioral change (ibid, p.23 & 59). Ulmer, Sellnow & Seeger further emphasize the importance to establish these relationships prior to an outbreak to ensure effective communication during a crisis (Ulmer, Sellnow & Seeger 2011, p.47-48). It is underlined the importance of adapting messages to the local context and using cooperation partners such as the Vietnam Red Cross to convey risk communication messages (MARD & MOH 2011, p.85). These efforts can according to the empirical material have been a key to creating trust among the local populations, because the risk communication messages were conveyed by known individuals with local cultural knowledge. Empirical support was found in that behavior changes in livestock management was successfully changed to a safer practices that prevented spread and/or outbreaks of disease (Waisbord, Michaelides & Rasmuson 2008, p.209). This is essential to point out as some empirical findings suggest ethnic minorities during normal circumstances are being discriminated in the health context in various ways and that generic information and handbooks been distributed although they are not always possible for the recipient to interpret. Communication between health staff and ethnic minorities has in some cases been difficult because of language barriers and ethnic minorities has also been less frequent users of healthcare services (McKinn et al. 2017, p.8; Målqvist et al. 2013 p.1 & 6). No empirical findings have confirmed this in an influenza outbreak context but there is a possibility that the same discrimination is present in this context as well.

Trust and Transparency

“Compliance can in many ways be interlinked with trust, as the public tends to respond positively to measures in accordance with the authorities recommendations or regulations if they trust their government. This enables the government to limit or make changes in people's everyday life without coercion” (Kampen, Van De Walle & Bouckaert 2006, p.387; Levi & Stoker 2000, p.492). Thereof, governmental trust is vital in the context of risk communication and is a result of governmental transparency (Cairns, de Andrade & MacDonald 2013, p.1558; Olofsson & Öhman 2009, p.88-89). The compliance toward the governmental restrictions

during a novel virus outbreak will be even more effective if the public trust is high before an outbreak (Chuang et al. 2015, p.7). The public trust is linked to people's political life. People who distrust the government are not satisfied with policy choices. Also, political scandals, war, critical media messages conveyed to the public, politicians portrayed as selfish can contribute negatively (Levi & Stoker 2000, p.480-481).

This can be seen in the case of South Korea when the public trust towards the government in general are low due to the many corruption scandals within the state apparatus, the public have higher trust in the public health system (Tan & Tambyah 2011, p.368-369). However, the Government Trust theory emphasizes that trust can increase during an event of an “external threat”, such as an influenza epidemic, because of people turning to the government for guidance and support (Citrin & Stoker 2018, p.59). Statistics during the covid-19 pandemic show trust among the citizens towards the governmental management of the pandemic (Dalia Research 2020). It's clear that the South Korean government has embraced the critics from the MERS outbreak (Zastrow 2020) when they failed to disclose important information to the public which caused trust to decline and hysteria arose, which also contributed to the spread of the epidemic (Choi et al. 2015 p.487; Kim & Jung 2017, p.1; Jang et al. 2019, p.2).

In their influenza preparedness plan the South Korean government points out that the main goal is to build trust through acting with consistency, using one spokesperson and to rapidly provide the general public with updated information, which goes along with both the Government trust and Risk Communication theory (MOHW & KCDC 2006, p.23). Despite the promising approach in the preparedness plan evidence from the MERS outbreak show another side of the coin. The government are aware of the unstable public trust and has implemented efforts to restore it (Kim, Lee & Lee 2018, p. 73). The successful management of the covid-19 is one clear evidence of the governmental efforts which also corresponds better to the objectives of their influenza preparedness plan. This has resulted in desired public compliance and a better control of the transmission (Zastrow 2020).

As Vietnam is considered a communist-one-party state the reliability of general public trust towards the government tolerates to be questioned. In a survey measuring trust within the state apparatus the Vietnamese public did not participate in the questions regarding trust towards the political institutions. They did, however, show high trust in the education system, public health system and in the media (Tan & Tambyah 2011, p. 368-369). Moreover, 84% of the participants in a survey expressed trust and satisfaction regarding government risk communication during the A(H1N1)pdm09 outbreak (Ngan et al. 2011, p.1). In a survey regarding the public opinion on the governmental response during the covid-19 pandemic, 64% of the Vietnamese participants thought the government is doing “the right amount” which is a higher rate than South Korea and the highest among all 45 surveyed countries (Dalia Research 2020). If these optimistic numbers are a result of strong nationalism and general trust towards the government or a result of fear or obligation towards the state is difficult to determine. According to the government trust theory, trust is developed through policy expectations and people being satisfied by policies implemented by the government (Im et al. 2012, p.746-747). The general trust has increased since the Đổi Mới reform in 1986 when the economy in the country opened up and the public welfare increased (Nguyen 2016, p.33-34).

In their pandemic preparedness plan the government states that timely communication of accurate information, public awareness and behavioral change are the primary objectives.

They show awareness on the importance of flexibility in their response to an outbreak with focus on the local context in the development of the communication models (MARD & MOH 2011 p.21 & 83). They also point out their close cooperation with transnational organizations in order to ensure transparency (ibid, p. viii, 78). During the A(H1N1)pdm09 pandemic Vietnam began with communication collaboration with nearby countries and other external partners when the virus reached the Asian region. With detection of the first domestic case, a spokesperson was appointed, conveyed consistent public risk communication in general and to targeted populations with the aim to avoid public panic (Moore & Dausey 2011, p.5).

The influenza preparedness plan has a holistic, multisectoral and transdisciplinary approach with a clear focus on preventative actions to mitigate the occurrence of an outbreak. The plan also includes clear evaluations on lessons learned and achieved goals regarding risk communication from the previous influenza preparedness plan as well as future challenges to be aware of and weak points that need further development, *see Appendix 4*. According to both the Government Trust theory and the Risk communication the government show efforts to be transparent in their management and communication. By actively work with preventative initiatives the government show responsiveness and protectiveness towards the public which could engage a better public trust.

The Vietnamese government show evidence of having a *culturally-sensitive approach* when they point out that public risk perceptions of the protective measures vary among the public and is important to refine during pandemic communications (MARD & MOH 2011, p.23). Chuang et al. further explains how social ties plays a crucial role in peoples response and shielding from external threats, which the government also pay close attention too when they highlight the difficulties regarding behavioral change and how this is influenced of local perceptions. Meaning that information and education communication (IEC) and behavior change communication (BCC) need to be adapted to the local context (ibid, p.85). This awareness can further result in development of a greater public trust in general but also among the ethnic minorities if the locally adapted incitements are successful. The theory of Risk Communication explains that to foster a dialogue between stakeholders and the public is central to show empathy to the public experiences. Empirical materials from the Avian Influenza confirms that some locally adapted communication initiative by the government in collaboration with local stakeholders, organizations and unions resulting in good compliance among target groups (Waisbord, Michaelides & Rasmuson 2009, p.203-204 & 209-210). However, other empirical evidence states an unsuccessful communication initiative due to inadequate cooperation between the government and NGO's which among other things led to confusion among the public and low-impact results. This is calling for improved monitoring and evaluation of activities and behavioral surveillance (Hai 2009, p.55-56).

During the covid-19 pandemic, Vietnam has continued to initiate proactive and transparent communication. The governmental management has received great support from the public who compared to other countries show the greatest trust towards their government (Vu & Tran 2020; Phuong Nguyen 2020; Le et al. 2020, p.17). The key to Vietnam's success in combating covid-19 can to a large part be attributed to the effective governmental leadership along with the engagement and solidarity of citizens (Le 2020). Seen by Governmental trust theory and the Risk Communication theory point of view Vietnam has acted correctly in order to engage and maintain trust in their risk communication efforts.

Compliance

The effect of the messages is according to Olofsson and Öhman an explicit in information transfer, attitude and/or behavior change and decreasing fear in the long and short term. In regard to risk communication hopefully leading to compliance (Olofsson & Öhman 2009, p.71). The South Korean government did not address how they need to act to foster compliance in their preparedness plan. What is more clearly addressed in the preparedness plan is the cultivation of trust, see the importance of trust explained above under *Trust & Transparency*. Apparent during the A(H1N1)pdm09 outbreak and MERS outbreak is, that the public took correct measures in accordance with recommendations such as self-isolating (voluntarily) at home and wearing a face mask. Even though, communication on MERS initially failed in 2015, empirical data show that today during the covid-19 pandemic, the South Korean people might show increasing levels of compliance because of their earlier experiences with disease outbreak and governmental guidelines and restrictions (Choi et al. 2015 p.487; Kim & Jung 2017, p.1; Jang et al. 2019, p.2; Chung & Soh 2020).

According to SIM, public communications can influence health by raising awareness, providing information, and reinforcing knowledge and behaviors. However, communication inequalities can affect people's attention to, processing of, and acting upon health information and the consequential behavioral outcomes, thereby increase the gap among social groups (Lin et al. 2014b, p.50). Higher education level, independence in seeking information and information processing had a direct link to protective measures such as hand hygiene and avoidance of high-risk areas such as hospitals during the MERS outbreak in South Korea (Lee, Ju & You 2019, p.5, 6 & 9). However, the empirical results do not disclose that particular campaigns to increase these behavior among vulnerable groups was made, as this group may not have the same ability to search for and process health information (Viswanath 2006, p.249).

Higher levels of fear and concern for infections along with reduced transmission behavior increased compliance during both A(H1N1)pdm09 and MERS (Kim et al. 2014, p.19; Jang et al. 2019, p.4). Related to the theory on risk perception, 'access' to the right type in information is required, followed by 'understanding/processing' and 'utilization' to increase possibility of shielding, higher SES groups has a higher ability in this matter (Taylor-Clark, Viswanath & Blendon 2010, p.226-227). Empirical data supports that rural areas and a low individual economic status in South Korea experienced a higher incidence of disease as well as increased disease severity (Choi et al. 2012, p.1-4 & 8). Also, unemployed and blue-collar workers had lower compliance rates of health protective practices recommended (Jang et al. 2019, p.4). This is an indication, but to clearly draw a conclusion on lower compliance mediated through failure to accommodate needs in terms of risk communication would require a wider empirical data set.

The preparedness plan of Vietnam addresses that it is important to evaluate the compliance of the people to improve and learn from earlier experiences, not assuming that compliance will be at a sufficient level. Compliance should be assured through strategic partners reporting unusual occurrences and actively engaging in rumor surveillance (MARD & MOH 2011, p.51) The state being a one party socialist state makes the balance between compliance as informed choice and compliance because of not risking being labeled an "unusual occurrence" is fine. The political situation may influence compliance levels in this matter. As a network of "loyal party members" is constantly contributing to informing the government (Jones 2020).

Compliance has been showed as mediated through local networks such as the VWU, because of the local knowledge they possess. This can be attributed a *culturally-sensitive approach* (Waisbord, Michaelides & Rasmuson 2008, p.209; Ulmer, Sellnow & Seeger 2011 p.47-48). It was shown that women participating in workshops held by VWU adapted measures such as fencing poultry and using protective equipment when handling dead or sick poultry during the Avian Influenza (Waisbord, Michaelides & Rasmuson 2008, p.203-204). Although during A(H1N1)pdm09 a good knowledge regarding community prevention, practices of these preventional methods was low. Education programs was proven successful, but the compliance still lacked. More empirical data would be needed to understand the processes behind this “gap” in knowledge and practice in the context of this outbreak (Ngan et al. 2011, p.1).

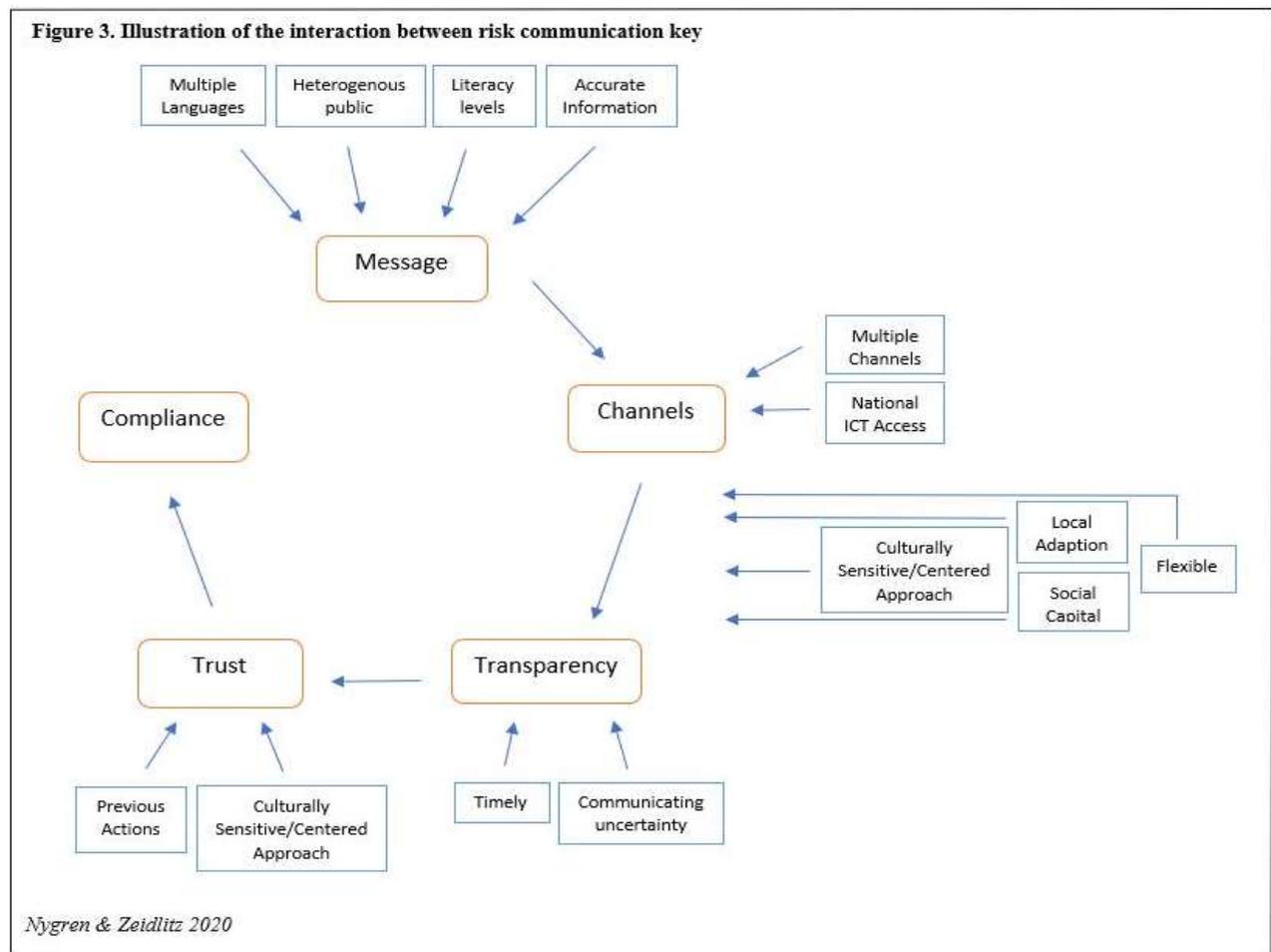
It is acknowledged in Vietnam's preparedness plan that social support needs to be in place for people to be better able to comply with measures such as home isolation (MARD & MOH 2011, p.57). This indicates awareness in accordance with the risk communication theory, that physical barriers or limited options may be the reason why people don't comply with recommendations (Viswanath 2006, p.222). However, the unidirectional communicational structure has been appointed some blame regarding the absence of behavior changes. Approaches not being diverse enough to accommodate the needs of a homogenous populations, especially those of ethnic minority groups. (McKinn et al. 2017, p.8; Målqvist et al. 2013, p.1). The empirical data on compliance during the covid-19 pandemic in Vietnam shows another image. It found that compliance is high with measures such as social distancing and wearing face masks (Le 2020). One reason being appointed, as well as for South Korea, that the population is very used to handling infectious disease outbreaks. Also, the feeling of “beating the enemy (the virus) together” is making the public more compliant (Jones 2020). As mentioned earlier, the reporting system that makes every neighbor a possible informant of ignored recommendations is also a possible driver (ibid).

Risk communication key factors of success or failure

For an inclusive and comprehensive risk communication, four key factors have been identified in this study; *Messages*, *Channels*, *Transparency* and *Trust*. These key factors are all affected by elements that will be described below, see *Figure 3* for an illustration.

- The conveyed *messages* should be adapted to a heterogeneous public, flexible in literacy and generous in languages.
- The choice of *channels*, which is the key to outreach, should be dependent on national ICT Access.
 - *Channels and messages* should together have a culturally-sensitive/centered approach, be adapted to the local context, be aware of the social capital, health literacy and how risk perception determines risk preventive behaviors.
- *Transparency* from the government, in disclosing all known information.
 - The information should be accurate and conveyed in a timely manner.
- *Trust* is a result from the level of transparency.
 - The public trust during an outbreak is also a result of governmental actions previous to the outbreak. An indirect effect to trust is also the locally adapted initiatives and culturally-sensitive/centered approach mentioned above.

The extent of consideration regarding these key factors plays a part in determining the level of public compliance which can lead to a successful or failing risk communication strategy. The outcome of the risk communication could be a crucial factor for mitigating virus transmission.



Conclusion

The aim of this study has been to identify insufficient or inadequate risk communication efforts in terms of reaching vulnerable groups among a population during an influenza outbreak. Further, to analyze how national influenza preparedness plans and outbreak responses observe or ignore these insufficiencies.

The following research questions were asked:

- What strategies on how to reach vulnerable groups by risk communication are included in the national influenza preparedness plans, and ultimately in the national response to an influenza outbreak?

Vietnam show awareness regarding a heterogeneous population in their influenza preparedness plan were vulnerable groups, in form of rural populations, low SES and certain occupations are addressed. This could include people with low ICT access. It's further proven by the empirical material that locally adapted actions were initiated reaching some vulnerable groups. In the light of the ongoing covid-19 pandemic Vietnam widely use the internet as a communication channel. Specially designed messages are conducted to reach different groups in the society

who hold different needs and demands e.g. sign language videos. Whether vulnerable groups in the context of low ICT access are considered is too early to say.

South Korea has a more homogenous approach and do not specifically address vulnerable groups in their influenza preparedness plan. The empirical findings show that low SES groups has been more exposed to influenza transmission and also experienced more severe infections. Empirical findings have presented targeted text messages and sign language interpretation as the only adapted initiatives from the government regarding special consideration to vulnerable population groups. South Korea do as well widely use technology and the internet when conveying risk messages during the current covid-19 pandemic. However, this still does not include the most vulnerable groups who lack ICT access or experiences a second-level digital divide.

Both South Korea and Vietnam showed a broad variety of channels used, where targeted text messages particularly could contribute to reaching a substantial part of the population, including vulnerable groups. The coverage of mobile subscriptions in both countries are large with more than one subscription per person, which likely also include lower SES groups.

- Which key factors determine the success or failure of risk communication efforts in pandemic influenza preparedness plans?

Four key factors were identified: Channels, Messages, Transparency and Trust. These key factors could be connected as the key to broader compliance among the population which was established to be the key to transmission mitigation. This requires that the public is receiving, understanding and trusting the information as well as acting on the information.

A general concluding remark is that whether the insufficiencies of risk communication strategies in this study were causing outbreaks not to be mitigated is unclear. The task to isolate risk communication efforts would not be feasible as too many other factors also play a vital role for the pathways and escalation virus of transmission. To pinpoint how insufficiencies particularly connected to vulnerable groups are present is not feasible for the same reason. However, the results of this study indicate that inequalities exist, and therefore it is also reasonable to believe that more efforts that particularly increase possibilities of these groups are important and possibly vital for oppressing novel virus outbreaks and mitigating these when they occur.

Discussion

Ellinas & Lamprianou points out that “The main expectation is that during extraordinary economic shocks, the economic and social performance of government has a stronger effect on political trust than during normal times.”. A critical situation for a country, as for example an influenza epidemic as studied in this thesis, constitutes an opportunity for a government to show its capacity to protect its citizens and thereby reinforces structures of trust between the government and its population. It's also a time when trust can easily decrease as result of unfavorable decisions and actions by the government further reinforcing inequality (Ellinas & Lamprianou 2014, p.232). This highlights the importance of this topic as a development issue, where the possibility to develop a just, equal and strong society may have its foundation.

ICT inclusion strengthens the possibility for individuals to independently access and assess information. A multiple set of sources are made available, especially through internet access. However, this may also lead to questions on reliability of information and critical scrutiny. Rumors may as easily arise as they are responded to, through vast information networks that rapidly connects individuals to each other and to institutions. The need for digital literacy including a critical eye on information distributed widely through information networks is vital (Choi et al. 2012, p.1-4 & 8; Park & Jae Kim 2014, p.77-80). Compliance has been argued to be essential in the context of an influenza outbreak in order to mitigate the transmission. In relation to enhanced ICT structures that include larger parts of the population, compliance should in theory be enhanced (Levi & Stoker 2000, p.492; Kampen, Van De Walle & Bouckaert 2006, p.387; Taylor-Clark, Viswanath & Blendon 2010, 226-227). However, the independent search of information may also be a driver to critical voices and opposition to government strategies which may work in a counterproductive manner. This might also be of positive character to oppose unjust or biased decisions. The possibility to such dialogue is fundamental to foster a multifaceted debate. Lack of ICT access on the other hand, may foster dependency and a “blind” compliance toward governmental restrictions during an outbreak. Due to the lack of possibilities to search for other sources of information to widen one’s knowledge and thereby question the decisions. Because of rapid action being essential during an outbreak and an inclusive discussion may interfere with a timely response. In the best-case scenario, guidelines should be presented prior to an outbreak to foster dialogue and be responsive to public opinions. This to avoid unnecessary obstacles to an efficient transmission mitigation during the outbreak itself, but still reassure responsiveness. In the aim for a better compliance, trust and understanding in the event of an outbreak would be an advantageous course of action as it would profit to all actors involved (Chuang et al. 2015, p.7; Ulmer, Sellnow & Seeger 2011, p.47-48).

Not to forget that despite a hypothetical universal ICT access, modern technology may still not be the most adequate communication channel. As people have different needs and demands to receive and process information, communication strategies still need to be culturally and locally adapted in order to reach the desired compliance. A trusted community leader might be a better and more efficient source for outreach to some audiences. The possibility to be exposed by widely disseminated risk communication messages might not fill the same function as a trusted source with deep roots in the cultural and emotional realm of an individual or a community.

Suggestions for further research

We suggest to further research on the impact of ICT, as it opens up a variety of other possibilities for development such as transparency and accountability, remote clinical assessments, easy collection and storage of data, banking services to rural areas, etc. In agreement with Peeri et al. we highly suggest further mapping and researching on this topic to find new, innovative and extended ways to make ICT valuable for development causes such as IoT (Internet of Things) technologies for mapping the spread of infection (Peeri et al. 2020, p.2). In the search for relevant empirical data it was noted that some topics, for example the digital divide in Vietnam and identification of vulnerable groups in South Korea, is scarce. Further research is needed, particularly with firsthand collected data through field studies. This

would better support the understanding of the impact, processes and structures regarding digital divide. Mapping of ICT access should especially be conducted in countries with a rapid development including a rapid development of communication infrastructures, where the risk for a digital divide could be increased (Hammond 1996, p.186).

Appendix 1

South Korea Pandemic Influenza Preparedness and Response Plan 2006

Governance & leadership (trust)

- Proper charging of information is needed to minimize overblown, unnecessary fear and social panic (MOHW & KCDC 2006, p.23).
- Delayed communication can cause a sector to fall into a state of disorder, possibly leading to a society-wide state of lawlessness (ibid, p.23).
- Each pandemic phase requires a specific communication plan and corresponding action guideline for the general public (ibid, p.23).
- The government must gain the confidence of the general public. Policy-makers, spokesperson, and officials in charge must speak and act with consistency in order to maintain mutual trust among the three parties (ibid, p.24).
- During emergency situations, the government must hold pre-scheduled briefings to continuously provide up-to-date information (ibid, p.27).
- Publicize the expert group's opinion, and if possible, include a communications specialist in the expert group (ibid, p.28).
- Strengthen coordination with international organizations and neighboring countries (ibid, p.101).
- Mobilization of the Rapid Response Team - During the pandemic alert period, once a sign of a suspect case is detected, immediately dispatch the Team by the order of the Director of Korean Centers for Disease Control and prevention (KCDC) (ibid, p.183).

Communication channels

- There must also be a plan to develop an IT infrastructure which enables rapid dissemination of information (ibid, p.23).
- Establish a briefing network and schedule - Identify and select media outlets and organizations requiring information (ibid, p.27).
- Appoint a spokesperson to deliver consistent and unified information to the media (ibid, p.27).
- During emergency situations, establish a 24-hour information dissemination scheme (ibid, p.28)
 - Operate hot-lines (ibid, p.28) Continually train call responders to provide effective information and counseling services (ibid, p. 90).
 - Provide the latest information through the internet. (ibid, p.28) Continually update contents on websites (ibid, p.90).
- In order to limit person-to-person contact during a pandemic, utilize various media such as the internet, phone, cell phone, printed/broadcast and others will be the primary means for risk communication. Therefore, these media channels must be further enhanced (ibid, p.28, 85).
- Educate travelers destined to and arriving from high-risk regions on how to prevent infection (p.83) prohibiting or recommending against when applicable (ibid, p.94 & 104).
- Hold regular and ad-hoc media briefings on the overseas pandemic (ibid, p.90 & 106).

- Post visual notices (poster) regarding influenza at a visible place, such as hospital entrances (ibid, p.126).
- A hospital communication plan has been developed to inform patients and visitors about the level of pandemic influenza activity. Collaboration with local healthcare facilities should be established for a mutual communication strategy (ibid, p.162).

Messages

- Inform public and media on foreign/domestic influenza cases (ibid, p.80, 84 &,100).
- Educate the public and healthcare workers on various preventive measures against infection (ibid, p.105).
- Conduct public education campaigns and communication for infection prevention (e.g., promote hand washing, cough etiquette, etc.) (ibid, p.83).
- Educate outbound travelers on actions to take when symptoms occur (ibid, p.88).
- Guidelines for Home Care and Home Nursing of Pandemic Influenza Patients (ibid, p.139).

Communicating uncertainty (transparency)

- To the extent possible, problems should be announced at its initial stage. - Announcements should not be delayed even if the epidemic is small in scale, or if there is a lack of information (ibid, p.24).
- The government has the responsibility to disclose information to the public in a transparent manner. There must be a balance between individual civil rights and the public's right and need to know for its own benefit. The government must also clarify any limitation in the information it provides to the public at the time of disclosure, and must inform that new upcoming information could possibly alter the situation (ibid, p.24).
- Continually provide relevant and updated information to the public and media (ibid, p.28 & 85).
- Monitor/disclose information on how the situation is evolving and being managed in affected countries and domestically. Share information and make an official announcement (ibid, p.90, 101 & 106).
- Update public messages, such as public action guidelines (ibid, p.90 & 101).
- Share information on current state and epidemiologic characteristics of domestic influenza cases to central & local governments, other related authorities, medical, academic or other professional groups/organizations, specialist networks the public and media as well as international organizations and neighboring countries (ibid, p.95 & 106).

Community engagement (compliance)

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Inequality & access

- The information should be easy to access, and the format should make the information easy to comprehend (ibid, p.28).
- Inform the human health and veterinary authorities, and local residents of affected area on the evolving situation of infection, as well as information on ways to prevent infection (ibid, p.85).
- Strengthen education of the local residents of affected communities on ways to prevent and respond to infection (ibid, p.88).

- Rapid communications with local governments/authorities of the affected communities on the evolving situation and response measures (ibid, p.95).
- Reinforce public education and outreach programs in affected areas (e.g., promote hand washing, cough etiquette, etc.) (ibid, p.99).
- Rapid Response Team (team on site) shall:
 - enable collaboration with the local community
 - hold consultative meetings with relevant agencies and organizations such as city/province/ward governments, Office of Education, police stations, fire stations, military units, and local medical associations and request for their participation and cooperation (ibid, p.185).
 - Strengthen public outreach programs on infectious disease prevention and appropriate community response through local media (e.g., TV or newspapers) (ibid, p.185).

Adaption to a diverse public

- Have a good understanding of the stakeholders requiring information (e.g., the public, members of the press, etc.) and establish a strategy for effective provision and sharing of information (ibid, p.24).
- Involve the stakeholders in the policy decision-making process, and inform the public of personal preventive measures (ibid, p.24).

Appendix 2

Risk communication outcomes South Korea - A(H1N1)pdm09 and MERS

Governance & leadership (trust)

- A cross-sectional study was conducted in three urban and two rural communities, randomly selected in South Korea. Among our participants, 37.7% placed the most amount of trust in information from health care providers, 29.9% in broadcasters, and 19.9% in the government, which demonstrates the need for interventions from these groups (Kim et al. 2014, p.10 & 18).
- One of the causes (for failure to prevent deaths during the MERS outbreak) was lack of a national system or effective coordination between experts in managing risk communication at that time (Kim, Andrew & Jung 2017, p.1).
- The recurrence (during several epidemics from 2003 and forward) reveals that, despite governmental efforts, Public Health Emergency Preparedness (PHEP) and risk communication strategies have not been sufficiently established or improved in Korea (ibid, p. 2).
- In particular, two key PHEP players, public health authorities and the public, demonstrated insufficient preparedness. Reinforcement of and improvements to health communication are necessary, such as raising awareness, providing sufficient information in a timely manner, and reinforcing public knowledge regarding appropriate protective/ preventive behaviors. Finally, greater efforts to build and maintain trust for public health authorities and the government is critical, especially in situations of uncertainty and high stress (Lee, Ju & You 2019, p. 9).
- the Korean government responded to the MERS outbreak in an overly optimistic manner (Jang et al. 2019, p. 2).
- Meanwhile, practice rates of reducing transmission behaviors were high in the groups that did not support the president. Those who did not stand by the ruling party practiced more reducing transmission measures than those who did (ibid, p. 2).
- the paper underlines the need for systematic risk communication measures, endorsed by effective collaboration among political leadership, media and the public (Yang & Lee 2020, p.1).
- The outbreak was entirely nosocomial, and was largely attributable to infection management and policy failures, rather than biomedical factors (Kim et al. 2016, p.207).

Communication channels

- A cross-sectional study was conducted in three urban and two rural communities, randomly selected in South Korea. We had similar findings, in that most of our participants (88.5%) said that they obtained information from the TV, radio, and newspapers (Kim et al. 2014, p.10 & 18).
- Regarding media use, those that spent more time listening to the radio are 13.9% more likely to be vaccinated than those that did not listen to the radio. Those that spent more time reading print newspapers are 31.9% more likely to be vaccinated than those that do not read print newspapers. However, those that spent more time using the internet

are 17.7% less likely to be vaccinated. Those that more actively engaged in health information seeking are 22.7% more likely to be vaccinated (Kim & Jung 2017 p. 5-6).

Messages

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Communicating uncertainty (transparency)

- MERS prevention measures were not transmitted in a timely manner through official channels. Instead, inaccurate health-related information proliferated, leading to disease phobia and hysteria among the population (Kim & Jung 2017, p.1).
- With South Korean government not releasing the hospital information, the nation could not obtain geographical information on the viral spread (Lee, Ju & You 2019, p.1).
- However, some inappropriate actions of the government in the early stages of the MERS outbreak contributed to the spread of this epidemic. The government did not disclose which hospitals were managing MERS patients in the early stages of the outbreak, which not only increased the fear of the public regarding MERS but also increased the incidence of secondary infections by super-spreaders—who transmit an infection to a significantly greater number of other individuals than average (Jang et al. 2019, p. 2).
- Due to increased public anxiety about MERS-CoV, the trust in the Korean government had fallen and the image of the Korean president as a leader had been damaged (ibid, p. 1-2).
- There was an alarming level of public fear during the disease outbreak due to an information crisis, resulted by the government's hold-back of vital information and the widespread MERS rumours on social media (Yang & Lee 2020, p.1).
- Public agencies had several challenges in seeking risk information to prevent the further transmission during the outbreak response. The national public health authority disclosed information about hospitals with MERS cases two weeks after the first patient was identified and was blamed for the further transmission [61]. Residents who had not known about the hospitals and visited the facilities became infected (Kim, Andrew & Jung 2017, p.6).
- It was highlighted that public risk communication was delayed because the South Korean Government prioritized the determination of all details of the outbreak rather than information disclosure (Kim et al. 2016, p.212).
- This paper aims to identify the key factors in the amplified spread of MERS-CoV in South Korea. The first is the initial failure to confirm diagnosis promptly and to isolate the index case after confirmation of MERS in hospital and the lack of detail in tracking potential exposures in the community of the index case before isolation. The second is the early inadequate measures the Korea Centers for Disease Control and Prevention took in categorizing close contacts. Due to inconsistencies in defining what constitutes close contact, a number of cases were neglected from quarantine and were not subjected to investigation (Choi et al. 2015 p.487).

Community engagement (compliance)

- Individuals show higher behavioral compliance when the perceived effectiveness of these measures and H1N1-related anxiety levels are higher (Kim et al. 2014, p.19).
- Education and information seeking had a direct significant influence on the increased practice of hand hygiene (Lee, Ju & You 2019, p.5-6).

- Information processing was significantly related to the avoidance behavior. Those who felt it was easier to process the health information were more likely to show hospital avoidance (ibid, p.6 & 9).
- The group concerned about MERS infection showed high practice rates of reducing transmission behaviors. People in this group were 3 times more likely to wear face masks and twice as likely to wash their hands compared with the group that was not worried about infection (Jang et al. 2019, p.4).
- Practice rates of reducing transmission behaviors were high in areas affected by MERS and in metropolitan areas (ibid, p.4).
- The higher the education level, the higher the practice rate was. Housewives and white-collar workers had high practice rates; while unemployed, blue-collar and self-employed workers had low practice rates. There was no definitive trend observed with respect to perceived household economic status. There were no differences in reducing transmission measures between MERS-affected areas and non-affected areas, as well as between metropolitan and non-metropolitan areas. The group that did not indicate support for the president and the ruling party had high practice rates of risk avoidance behaviors. In addition, perception of MERS led to different risk avoidance behaviors. Risk avoidance behaviors were more commonly practiced among those who were worried about MERS infection as compared with the non-worried group, worried people were also twice as likely to practice all reducing transmission measures. The group more likely to predict that MERS would spread also had high rates of risk avoidance behaviors (ibid, p.4).
- groups that were worried about MERS infection were 4.5 times more likely to practice reducing transmission behaviors and 9.6 times more likely to practice risk avoidance behaviors (ibid, p.7).

Inequality & access

- Vaccination compliance was generally low among groups with low socioeconomic status (Kim, Andrew & Jung 2017, p.7).
- Socioeconomic determinants included: Gender, age, education level and income. Age and higher education were related to higher frequency of information seeking during the MERS outbreak (Lee, Ju & You 2019, p.6).
- Socioeconomic determinants included: Gender, age, education level and income. Only higher income was related to higher level of information processing (ibid, p.6).
- We found that individual economic status influenced infection severity (Choi et al. 2012, p.5).
- National Health Insurance, NHI (96,3% of the total Korean population, p.2) beneficiaries were less likely to experience severe illness than patients in the Medical Aid program (low income group, p.2) (ICU; OR, 0.460; 95% CI, 0.387–0.548) (ibid, p.5).
- One social issue in Korea is that the average age of the population in rural areas is increasing; thus, it is assumed that age specific immunity and mortality were the cause of the observed variations in incidence in the regions, together with differences in the transmission potential according to population density (ibid, p.8).
- After classifying the region by city and province, the incidence of influenza A (H1N1) was higher in provinces where the proportions of 0–19 yr patients (24.30%) and those

>60 yr (15.99%) were greater than those in the city (22.73% and 13.57% respectively) (ibid, p.8).

- After classifying the region into two groups such as city and province, the incidence of influenza A (H1N1) and the risk of severe outcomes were higher in provinces. The proportion of working people aged in their 20 s to 50 s among residents, the lower risk groups for influenza A (H1N1), was greater in the city (ibid, p.8).
- Accessibility to medical treatment and hygiene could differ according to individual economic conditions. This may have caused a delay in seeking medical care after symptom onset. The length of time from symptom onset to treatment is associated with illness severity (ibid, p.8).
- Severe pandemic H1N1 influenza was associated with [...] lower economic status (ibid, p.1).
- The number of patients exposed to novel influenza A (H1N1) was highest in and around the capital area, but the incidence per 100 people was also high in Gwangju (6.67) and Chungbuk (6.38) (both provinces). The highest incidence rate of severe outcomes was in Gangwon (4.89 ICU (intensive care unit) admissions/100,000), where most of the districts are rural areas. (ibid, p.4).
- Our results indicate that education is negatively related to exposure to entertainment media. The lower the education level, the more likely people are exposed to entertainment media (Oh, Paek & Hove 2015, p.26).
- This result implies that people with disabilities have lower ICT usage capacity than people without disabilities because disabled people cannot develop their ICT usage capacity without auxiliary facilities (Doh & Stough 2010, p.66).

Adaption to a diverse public

- Moreover, additional support for vulnerable populations should be made by providing free and easy access to targeted, tailored messages with the appropriate literacy to enhance health communication ability (Lee, Ju & You 2019, p. 9).

Appendix 3

Risk communication outcomes South Korea - Covid-19

Governance & leadership (trust)

- Applying lessons learned from the MERS outbreak in 2015, Korea has been strengthening its infectious disease surveillance and response capacity. [...] The Korea Centers for Disease Control and Prevention (KCDC) has also been upgraded [...] Specialized divisions have been established for risk assessment, emergency operations, crisis communication, and partner coordination (Chung & Soh 2020).
- Dalia Research survey of 45 countries: Government's Covid-19 response is rated by 800 Korean people as: “Far too little”: 12%, “A bit too little”: 20%, “Right amount”: 45% “A bit too much”: 6%, “Far too much”:7%, “don't know”: 13% (Dalia Research 2020).

Communication channels

- Hidden hero of COVID-19 pandemic: Life of a sign language interpreter [YouTube] (Arirang News 2020).
- For the past month, South Korean residents have been receiving flurries of emergency text messages from authorities, alerting them to the movements of local people with COVID-19 (Zastrow 2020).
- When I returned from Germany at the end of March, there was a well-functioning protocol in place. Before I left Frankfurt Airport, I was asked to download an app from the Korean Ministry of Health and Welfare, and a second, from the Ministry of Interior and Safety, once I landed (Klingebiel 2020).
- We all knew very clearly, thanks to the daily government news briefings, emergency alerts, web and mobile-based apps, and GPS trackers, what symptoms to be wary of, etc. [...] (ibid).
- Transparency and communication have helped allay fear and prevent panic. The government rolled out a massive public information campaign on personal hygiene and social distancing. It has conducted twice-daily press briefings, updated its online information continuously, and sent out targeted text messages (Chung & Soh 2020).
- Korea has also encouraged public-private partnerships to leverage technology for better health outcomes. For example, KT, a major Korean ICT company, has developed its Global Epidemic Prevention Platform (GEPP), an infectious disease prevention platform that it is piloting in Ghana and Kenya, with plans for expansion in East Asia. A smartphone app alerts mobile phone users of nearby outbreaks and lets them communicate their health conditions to authorities (ibid).

Messages

- When a person tests positive, their city or district might send out an alert to people living nearby about their movements before being diagnosed. A typical alert can contain the infected person's age and gender, and a detailed log of their movements down to the minute — in some cases traced using closed-circuit television and credit-card transactions, with the time and names of businesses they visited. In some districts, public information includes which rooms of a building the person was in, when they

visited a toilet and whether or not they wore a mask. Even overnight stays at ‘love motels’ have been noted (Zastrow 2020).

- Campaigns encouraging people to avoid large gatherings — have helped to reduce the virus’s spread (ibid).
- We all knew very clearly, [...] what symptoms to be wary of, what to do and where to go for testing, which neighbourhood pharmacy carried masks that day, and which “infection locations” to avoid visiting (Klingebiel 2020).

Communicating uncertainty (transparency)

- The South Korean government says the public is more likely to trust it if it releases transparent and accurate information about the virus, including travel histories of confirmed patients. Laws passed since the country's last major disease outbreak, of Middle East respiratory syndrome (MERS) in 2015, now specifically allow authorities to publish this information (Zastrow 2020).
- South Korea’s data transparency during this outbreak has its origins in how the government handled the 2015 outbreak of MERS, which reportedly infected 186 people in South Korea and killed 36. The government at the time initially refused to identify the hospitals in which infected people were being treated, but a software programmer made a map of cases based on crowdsourced reports and anonymous tips from hospital staff. Eventually, the government relented and named the affected hospitals (ibid).
- This inundation of real-time public information is what has really helped South Korea throughout this crisis (Klingebiel 2020).
- Korea is managing the COVID-19 crisis by emphasizing transparency and open communication, public-private partnerships, evidence-based deployment of public health measures, and innovative use of technology and data (Chung & Soh 2020).
- Transparency and communication have helped allay fear and prevent panic. [...] Combined with a massive rollout of testing and information on the results, fear and misinformation have been minimized (ibid 2020).

Community engagement (compliance)

- [...] many people are self-disciplined, staying at home, even if this is based on a voluntary basis and wearing masks all the time (Klingebiel 2020).
- Experience with the MERS may also have made Koreans better prepared to follow public health communication on COVID-19 (Chung & Soh 2020).

Inequality & access

-

Adaption to a diverse public

-

Appendix 4

The Vietnam Integrated National Operational Program on Avian Influenza, Pandemic Preparedness and Emerging Infectious Diseases (AIPED) 2011-2015

Governance & leadership (trust)

- [Progress has been made considering] promotion of public awareness and behavioural change (MARD & MOH 2011, vii).
- Communications, public awareness and behavioural change will continue to evolve from a primary focus on public awareness raising to implementing behaviour change communications and assessing which approaches and models are most successful in Vietnam. The AHI Behaviour Change Working Group will review the existing strategic framework for AHI communications and develop a new detailed communications strategy in support of the plan for 2011-2015 (ibid, viii).
- National preparedness for a new strain of influenza or another novel infectious disease is an important national task that covers both the health sector and other sectors, taking into account potential impacts on both human health as well as many other important aspects including ensuring the continuity of essential services and infrastructure, effective public communications, etc. (ibid, xi).
- Achieved 2006-2010: Communications plans to inform the general public and health personnel of requirements during different pandemic phases have been established (ibid, p.7).
- Both internal and external (international) reporting are contingent on the timely flow of information from localities to central level (ibid p.78).
- Lessons learned 2006-2010: Effective collaborations - which may consist of formal linkages with other national coordination and regulatory authorities - need to also be expanded to include other relevant sectors such as environment, wildlife, and essential services (energy, telecommunications, finance and banking, law and public security, public utilities, transportation). This is important for a truly transdisciplinary approach to preventing and managing communicable diseases, and for the development of comprehensive emergency response plans for pandemics (and other hazards)(ibid, p.79). Relevant public sectors would include: [...] Ministry of Information and Communication [...] (ibid, p.79).
- Lessons learned 2006-2010: There remains a large volume of information to be validated, synthesized and translated into policies and programs - [...] communications and social marketing (ibid, p.83).
- Lessons learned 2006-2010: Flexibility has also been important in the national response to influenza A/H1N1 - responses must be adapted to the evolution of the local epidemic in a timely fashion. This includes consideration of the severity of the disease and the impact of public health actions (ibid, p.83).
- The national Avian Influenza and emerging diseases plan must be clearly and carefully communicated to all stakeholders so that all parties are fully committed to its coordinated implementation. As discussed in the section on coordination, this means sound communications within the health sector, as well as reliable information

exchanges to the party level, other government agencies, civil society organisations, private businesses and the media (ibid, p.85).

- The mobilization and participation of the whole of government, social and civil society organizations, the mass media and the whole of society at all levels with technical guidance of the agriculture and health sectors was a key factor in the success of public awareness-raising and communication activities particularly during high-risk periods (ibid, p.85).
- Communication with the public is a key prevention and control strategy for all emerging diseases (ibid, p.10).
- Consideration of how the prevention and control of high-risk emerging infectious diseases can effectively be ‘socialized’ through the involvement of a wide set of stakeholders at different levels, including mass organizations, commercial and professional associations, and social and civil groups (ibid, p.23).
- Livestock management: Experiences with Avian Influenza over the last five years have demonstrated the importance of involving communication experts, technical experts and end users in the design and implementation of behavioural change and communication campaigns (ibid, p.45).
- The wide variety of private professionals practicing in Vietnam can add value across the range of pandemic responses including surveillance, implementing infection control measures, supporting government directives such as social distancing measures and risk communications, and providing curative and supportive (e.g. psychological) services (ibid, p.57).
- IHR (2005) Indicator 6: Are public health emergency response mechanisms established?
 - Detailed plans are limited to the health sector although the pandemic action plan does outline communications, roles and responsibilities of other key coordinating ministries, unions and the Vietnam Red Cross (ibid, p.144).
- IHR (2005) Indicator 10: Are mechanisms for effective risk communication during a public health emergency established?
 - Partly. Need evaluation and further development (ibid, p.144).

Communication channels

- Risk communication messages from government to the public during outbreaks can be partly designed and tested in advance to ensure rapid implementation when required. This includes print, electronic and media materials, as well as fostering relationships with key disseminators of information such as the media (ibid, p.85).
- Novel models of communication such as use of mobile phones (SMS) will be considered for selected subpopulations as part of behavioural change projects and for risk communications during outbreaks (ibid, p.60).
- Health managers from the central to local level require further training to improve risk communications during public health emergencies (ibid, p.60).
- Improving the knowledge and communication skills of health workers in hospitals and preventive health units (63 provinces x \$10,000/ 5 years) (ibid, p.125).
- Conducting community Avian Influenza communication campaigns (63 provinces x \$20,000/year x 2 turns/ 5 years). IEC (Information, Education & Communication)

printing and distribution (630,000 materials/turn x \$30,000/turn x 10 turns) (ibid, p.125).

- Annual publicity campaigns during high risk periods and in areas where vaccination campaigns are being modified (ibid, p.135).
- Review of BCC (behavioural change communication) campaigns and programs including school based programs to determine which methods warrant replication (ibid, p.135).
- Improve communication activities through central and local agricultural extension system (ibid, p.135).

Messages

- Some specific opportunities for mainstreaming and integration of behaviour change communications in the coming period include food safety and hygiene promotion activities such as the Vietnam Handwashing Initiative and food safety communication initiatives of MOH and the Livestock Competitiveness and Food Safety Project (LIFSAP) of MARD (ibid, p.23).
- Livestock management: Communications on ongoing and seasonal risks of outbreaks of HPAI. These communications could also be extended to other diseases in livestock and wildlife depending on the actual situation and risk analysis (ibid, p.45).
- Communications on the dangers of handling, butchering, preparing and consuming sick or dead poultry, and the need to report diseases in poultry and other livestock on wildlife (ibid, p.45).
- Livestock management: Annual publicity campaigns during high risk periods and in areas where vaccination campaigns are being modified (ibid, p.46).
- Consideration should be given to the need for communications to both agriculture sector and health sector officials and workers and the general public on the ongoing risks of disease transmission within and between different livestock and wildlife species and humans and behaviours that can reduce these risks, applying a One Health approach (ibid, p.60).
- Challenges: Lessons should not be limited to responding to influenza and emerging communicable diseases, but should be considered for a wide range of health communications. Similarly, opportunities should be looked for to integrate health messages relevant to influenza in non-influenza activities (ibid, p.61).
- Development of appropriate communication package to discourage butchering of dead or sick poultry (ibid, p.135).

Communicating uncertainty (transparency)

- Lessons learned 2006-2010: Vietnam has worked closely with WHO, OIE and other partners to ensure transparency and to fulfil its obligations under international agreements (ibid, p.78).
- Timely communication of accurate information to the public, the media, health workers, and decision makers within health and other government ministries is a core operational objective. This applies for health emergency communications during a pandemic or the emergence of a new infectious disease, behaviour change communications that are of particular relevance in addressing HPAI and other diseases in animals, including wildlife, and their risk to humans, and operations communications

to ensure the smooth working of multiple organisations in responding to threats (ibid, p. 21).

- Continuing to strengthen coordination with media to maintain reliable mechanisms and capacity for timely, accurate dissemination of information to the general public (ibid, p.23).

Community engagement (compliance)

- Rumour surveillance is also of importance in areas considered at high risk for emerging diseases. Engaging the general public, community leaders, workers from key occupations and the local media can expedite reporting of unusual occurrences in strategic locations (ibid, p.51).
- Social supports that enable people to comply with public health interventions such as home isolation will need to be identified and included within local pandemic plans. The success of such measures is intimately linked to how well government communicates these measures and ultimately how compliant people are (ibid, p.57).

Inequality & access

- A number of human cases of influenza A(H5N1) in Vietnam and elsewhere still appear to result from handling and consuming of sick and dead poultry. Therefore the public health messages related to these practices need to be refined. Communication programs must acknowledge that poverty is one of the drivers of these practices and be aligned with activities designed to reduce poverty (ibid, p.85).
- Facilitating rapid investigation and containment activities through the development of rapid response teams. New standard short course epidemiological training Package that include follow up monitoring and support have been developed by the NIHE (National Institute for Hygiene and Epidemiology) for provincial and district preventive health staff to bolster their ability to analyse data, conduct outbreak investigations and institute control measures (ibid, p.52).
- Training needs to be scaled up so that all local public health workers are equipped with basic epidemiological, information technology, communications, and management and leadership skills (ibid, p.52).
- The preventive health system down to the local level is a key element for the delivery of health sector messages to the general public and key target groups. The availability of sufficient human resources is still constrained, particularly in poor and isolated areas within the country (ibid, p.60).
- Challenges: Socioeconomic analyses should pay particular attention to gender-related dimensions, taking into account differences in the roles of women and men in livelihood activities, decision making, caregiving, access to information and economic resources, participation in local networks, exposure to risk and other related aspects (ibid, p.61).
- Maintaining internet network for regional, provincial, district levels (750 units x \$2,000). Providing computers and maintaining the internet network for surveillance at commune level 11,000 communes x \$1,000/set 11,000 communes x \$200 to maintain internet network (ibid, p.137).

Adaption to a diverse public

- For instance, public perception of social distancing measures and views on risk messages are important to refine pandemic communications (ibid, p.23).

- Achieved 2006-2010: Behaviour change communications programs targeted at people involved in poultry production have been conducted (ibid, p.7).
- This notion of an active learning system should be extended beyond the health sector to include all stakeholders listed in the national action plan for pandemic influenza such as other Ministries, the Vietnam Red Cross and various unions (ibid, p.83).
- Lessons learn 2006-2010: Communication with the public is a key prevention and control strategy for all emerging diseases. Communication strategies need to move beyond provision of information and awareness-raising for the general public to more targeted, proven measures for behaviour change based on an understanding of what works locally (ibid, p.85).
- Knowledge of disease can be improved through IEC (Information, Education & Communication) campaigns but behavioural change is more difficult to achieve especially if the public sees little reason or incentive to change long-standing behaviours and practices. BCC (Behavioural change communication) activities need to be based on sound analysis of local perceptions and rational expectations around drivers and incentives for proposed changes in behaviours. Campaigns must also be of sufficient duration to ensure lasting behavioural changes (ibid, p.85).
- During the previous five-year period, the response to avian and pandemic influenza has moved from a primary focus on public awareness raising to implementing behaviour change communications and assessing which approaches and models are most successful in Vietnam (ibid, p.21).
- The National Strategic Framework for Avian and Human Influenza Communications (*document not publicly available*) analyzes communication priorities for key target groups in the agriculture and health sectors in terms of technical validity and practical feasibility for adoption (ibid, p.21).
- Detailed plan for behavioural changes promoted for key target groups before and during an outbreak (ibid, p.21).
- The current context of low risk perception and competition of other important issues amongst key target groups including authorities at different levels, health care workers, poultry sector workers, the media and the general public and the need to identify an effective rationale and incentives for target groups to change their behaviours (ibid, p.22).
- The availability of tested models and approaches for different types of communications at the community level (ibid, p.23).
- The results of detailed reviews and evaluations of the effectiveness of different types of communication activities, including identifying strengths and weaknesses, overall progress and remaining tasks, as well as detailed reviews carried out at the local level in order to build a 'bottom-up' planning approach (ibid, p.23).
- The need to ensure that public health communications, agricultural extension and other supportive communications are planned, resourced and carried out in step with changes in the agricultural sector's control plans, particularly for changes to poultry vaccination that may alter the risk to human populations and that require the awareness and cooperation of different groups within the population (ibid, p.23).

- Livestock management: Particular attention to communications on the dangers of handling of sick or dead animals in remote and poor areas is required based on lessons learned in the previous period (ibid, p.45).
- Livestock management: A range of communication approaches should be considered, depending on the specific contents and targeted populations (ibid, p.46).
- Regular (annual or biennial) reviews of the national action plan are required to adapt to shifting local circumstances (ibid, p.49).
- It is particularly important to develop coordinated multi-sectoral action at provincial levels given the ongoing decentralisation process, rather than just a series of parallel vertical plans. Ultimately, however, these planning efforts require direction and coordination from national leaders. Adequate budgets are required to develop and maintain operational pandemic plans. These plans must reflect realities with regard to human resources and relevance to provincial priorities (ibid, p.57).
- During the initial period of the new plan, the health sector will review the behavioural change communications work undertaken during 2006-2010 for HPAI to determine what worked, where, when and why. In addition to assessing the messages delivered and the mode of delivery, this review will also look at structural and environmental aspects that positively or negatively influenced behaviour change (ibid, p.59).
- Challenges: The strategy for communications in the health sector needs to be prepared with recognition of the current context of low-risk perception amongst different key target groups. Behaviour change communications need to be based on a clear rationale and incentives for target populations to change their behaviours and should identify and address factors that inhibit or encourage populations to change their behaviours (ibid, p.60).
- Challenges: The current low risk perception of the public and key target groups is a key challenge for communication efforts. The impact of public awareness and behaviour change campaigns need to be evaluated (ibid, p.61).
- Development of appropriate extension and training Package for slaughterhouse and market workers on disease control and prevention and hygiene measures (ibid, p.135).

Appendix 5

Risk communication outcomes Vietnam - Avian Influenza (H5N1) and A(H1N1)pdm09

Governance & leadership (trust)

- Implemented measures when cases were identified in the Asian region:
 - Communications with any MBDS (Mekong Basin Disease Surveillance) country
 - Communications with MBDS Coordinator
 - Communications with any external partner (Moore & Dausey 2011, p.5).
- The experience of three programmes in the Mekong Region that used BCC to prevent and control outbreaks of Avian Influenza bore out this finding. These programmes worked with the Vietnam Women's Union to mobilize local women as conduits for education (Waisbord, Michaelides & Rasmuson 2008, p.197).
- A key component of the discussions was to encourage women farmers to express anxieties about, and obstacles to, biosecurity-related changes. These discussions gave the trained VWU staff, and others, an opportunity to problem solve collectively, and made the desired changes more attainable (ibid, p.203-204).
- Local organizations' social standing makes them trusted sources of information (ibid, p.209).
- Tapping into the social capital of rural communities can promote participatory communication and local ownership. Associations are not simply dissemination conduits for print materials. Involving communities through local institutions activates institutional and informal networks of interpersonal communication, and ensures that populations lead the communicative process. (ibid, p.210).
- We intended to build on the activities of existing local associations that were trusted and had legitimacy, thereby tapping into existing communication capital, rather than forging new associations with questionable continuity and community trust (ibid, p.210).
- In Vietnam, many government and non-governmental organizations have been involved in HPAI public awareness and behavioural change and communication since the first HPAI outbreaks occurred in late 2003. However, although some degree of collaboration exists, there is not yet a formal coordination and communication mechanism between ministries or among various agencies. This has led to some overlaps and a waste of resources, as well as confusion among the audience receiving inconsistent messages, unnecessary competition for the audience's time and attention, and the potential for low-impact results due to technically incorrect information (Hai 2009, p.55-56).
- In addition, monitoring and evaluation of activities and behavioural surveillance need to be improved, and the capacity of government agencies [...] needs to be further strengthened (ibid, p.56).
- The recently passed Law on Prevention and Control of Infectious Diseases has clear stipulations on information, education and communication regarding the prevention and control of pandemics, as well as the responsibilities of the Ministries of Health,

Information and Communication, Education and Training, Labour, Invalid and Social Affairs, the local authorities and mass media (ibid, p.56).

Communication channels

- This cadre (Vietnam Women's Union) was entrusted with imparting reliable information against a backdrop of conflicting national, regional, and global media reports, on a rapidly-evolving avian influenza outbreak situation. They were used to disseminate information quickly when new outbreaks were reported, as well as to reinforce information between outbreaks (Waisbord, Michaelides & Rasmuson 2008, p.203).
- The workshops (conducted by Vietnam's Women's Union) featured sessions on poultry health, human health, communication skills, and group discussion facilitation skills (ibid, p.203).
- The district women's unions were also responsible for distributing information, education, and communication (IEC) materials, including leaflets and posters on Avian Influenza prevention and control (ibid, p.203).
- Some provinces plan to collaborate with local government culture and information units, to disseminate AI messages through local radio stations and commune loudspeakers, and others plan to identify model farms that practice positive biosecurity behaviours (ibid, p.204).
- 87.5% have received the pandemic information through flyers, radio, TV spots, newspaper, and meetings (Ngan et al. 2011, p.1).
- The capacity of [...] the mass media needs to be further strengthened (Hai 2009, p.56).
- A nation-wide IEC campaign focused on key messages to prevent transmission from poultry to humans, using the mass media, civil society organizations, and communication officers and health facilities as the main communication vehicles (ibid, p.56).
- In Vietnam, thanks to effective public administration, the mass media can be easily mobilized for the dissemination and broadcasting of information related to diseases and pandemics (ibid, p.56).

Messages

- There were active public health education efforts in all countries. In the countries with AHI cases, most of the messages and materials were related to the handling of livestock and basic health hygiene such as hand washing, protection when sneezing/coughing. The main strategy of public health education was to focus on the prevention of Avian Influenza transmission (e.g. use chicken as a mascot, etc). Very few messages were on pandemic influenza (Hanvoravongchai et al. 2010, p.7).
- Ministry of Agriculture and Rural Development, the Ministry of Health and the Ministry of Culture and Information will work within the National Steering Committee to coordinate IEC strategies, messages, [...] (Hai 2009, p.56).
- The IEC materials included a leaflet called 'Preventing Bird Flu in Poultry and Humans', developed by AED, a poster on the importance of fencing poultry, and another poster on quarantining new poultry for 2 weeks. AED also developed an avian influenza booklet for communicators that was distributed to VWU staff in 24 provinces. An estimated 8,300 fencing posters, 8,300 poultry separation posters, and 1.9 million

bird flu prevention leaflets were disseminated through the VWU members (Waisbord, Michaelides & Rasmuson 2008, p.203).

Communicating uncertainty (transparency)

- Implemented measures when cases were identified in Vietnam:
 - Public risk communications - everywhere
 - Consistency in messages for the public
 - Messages aimed to avoid public panic
 - Spokesperson identified (Moore & Dausey 2011, p.5).
- 83.9% of respondents felt that the pandemic responses by the government were essential and timely (Ngan et al. 2011, p.1).
- MARD, the MOH and the Ministry of Culture and Information will work within the National Steering Committee to coordinate IEC strategies, [...] timing of campaigns (Hai 2009, p.56).

Community engagement (compliance)

- Local women's unions in Vietnam, could tailor information to be more palatable and reflective of their neighbours' realities and, thus, more likely to be followed. They could discuss these realities with their communities on a case-by-case basis, and help them devise solutions to reduce their risk of avian influenza infection, while reflecting the limitations of their situation (Waisbord, Michaelides & Rasmuson 2008, p.209).
- Of the 280 women who attended the discussion in the town of Kim Bai, an estimated 150 immediately began to adapt measures to prevent AI in their poultry (ibid, p.209).
- For example, in a group discussion held by the Kim Bai Town Women's Union in Ha Tay Province, many farmers expressed concern about separating their backyard chickens and ducks because they did not have enough space in their small yards. Through discussion, they determined that it would be easier to raise one or two kinds of poultry rather than many different types that would have to be kept separate. Other alternatives were using lime powder if they could not afford chemical disinfectants, and using plastic bags to touch sick or dead poultry if they did not have protective gloves (ibid, p.203-204).
- A cross sectional survey was conducted in Cu Chi district of Ho Chi Minh City and Ninh Kieu district of Can Tho City. Among 304 individuals (32% male and 68% female) who were selected systematic randomly and representing for risk population as workers, students who living in the boarding houses, boarding schools. Respondents rated face-mask and hand-washing as the most effective preventive measures (97%). The percentage of people who have good knowledge on pandemic influenza personal prevention (i.e. wash hands plus avoid close contact with sick people) was 74.7%, while only 36.8% had good knowledge on community prevention (cover nose and mouth when coughing or sneezing, stay home from work or school if sick, cleaning house) (Ngan et al. 2011, p.1).
- Implementing education programs were successful and effective in raising public awareness about influenza pandemic. This proven that education measurement is one of important keys of pandemic containment strategies. Although the percentage of people having good knowledge and acceptable attitude were high, practice on community prevention among local people was still poor. Therefore, in the future

education programs should focus on improving good practice for containing community transmission of influenza pandemic (ibid, p.1).

Inequality & access

- The Vietnam Women's Union (VWU) [...] With 11 million members, this national organization can reach every community in the country through village-level representation. Although controlled by the Communist Party of Vietnam, and historically used by the Government of Vietnam as a key avenue of communication to women, the VWU has a broad agenda to promote women's rights and well-being, and has worked successfully with many international NGOs. A civil society organization within the socialist model, it was created by the state, but its grassroots members are mobilized for development activities in the same way as civic groups in non-communist states (Waisbord, Michaelides & Rasmuson 2008, p.199).
- The first two planning workshops, in Ho Chi Minh City and Hanoi, in April 2006, were attended by VWU representatives from all 64 provinces. This was followed by training of trainers (ToT) workshops for VWU officers in 24 provinces, who, in turn, trained over 3,840 district and commune women's union officers (ibid, p.202-203).
- the trained women would be responsible for conveying key messages in their villages.1 (ibid, p.203).
- This is further illustrated by the fact that many services and related information are not made available in the local language (Målqvist et al. 2013, p.16).
- Article 7 of the Law on Prevention and Control of Infectious Diseases stipulates that the Father Front of Vietnam—an umbrella organization which has a strong base in all localities of the country with mass participation and popular mobilization—is responsible for informing and persuading the people to prevent and control infectious diseases, and for supervising implementation of the law (Hai 2009, p.56).

Adaption to a diverse public

- Implemented measures when cases were identified in Vietnam:
 - Public risk communications - targeted (Moore & Dausey 2011, p.5).
- The relative weakness of large-scale media in rural areas in the Mekong Delta region required a different approach to reach populations in a short time: tapping into existing public assets to articulate and mobilize complex information (Waisbord, Michaelides & Rasmuson 2008, p.199).
- Local ownership ensures the cultural relevance and appropriateness of activities and messages (ibid, p.210).
- The challenge for health ministries relates both to strategy and instrumentation. Ministries must adjust their strategies and interventions to avoid the twin dangers of bureaucratic standardization (resulting in reduced relevance in local conditions) and micromanagement (which is neither effective nor feasible) (Fritzen 2007, p.75).
- MARD, the MOH and the Ministry of Culture and Information will work within the National Steering Committee to coordinate IEC strategies, [...], target audiences [...] (Hai 2009, p.56).
- Recent events around the fight against pandemic influenza have shown that the mass media plays a vital role in influencing behavioural changes that may be necessary in order to curb a pandemic in urban areas. In the rural areas, where mass media was less

able to be utilized, the local authorities, health care institutions, educational institutions, military units and Father Front of Vietnam and its affiliates can be effective (ibid, p.56).

Appendix 6

Risk communication outcomes - Covid-19

Governance & leadership (trust)

- In a Dalia Research survey of 45 countries asking about public opinion of government responses to the pandemic, 62 percent of Vietnamese participants said that the government is doing the “right amount,” topping the survey’s average with a higher rate than other “model” countries such as Singapore and South Korea (Vu & Tran 2020).
- Dalia Research survey of 45 countries: Government's Covid-19 response is rated by 800 Vietnamese people as: “Far too little”: 5%, “A bit too little”: 8%, “Right amount”: 62% “A bit too much”: 7%, “Far too much”:5%, “Don't know”: 13% (Dalia Research 2020).
- On March 10, the Ministry of Health launched the health declaration mobile application NCOVI to help the public report their medical conditions and follow the contact tracing operation, just before the WHO declared a global pandemic on March 11 (Vu & Tran 2020).
- [Prime Minister] Phúc has met with strong approval from the Vietnamese public. Vietnam’s people appear to be among the most confident globally in how their government has handled the pandemic (Phuong Nguyen 2020).
- In the later periods, the emergence of strong political leaders such as Deputy Prime Minister Vu Duc Dam had a significant and positive influence on public perception of the Vietnamese government as well as the consensus and trust in Vietnam’s efforts to fight against the pandemic (Le et al. 2020, p. 17).
- For example, the government has pooled all available resources and expertise from hospitals across Vietnam to carry out life-saving measures for the three most serious cases of COVID-19 patients (Phuong Nguyen 2020).

Communication channels

- On February 9, the Ministry of Health held a teleconference with the WHO and 700 hospitals at all levels nationwide to disseminate information on nCoV prevention and launched a website to disseminate information to the wider public (Vu & Tran 2020).
- The Ministry of Health took the initiative to launch a website and a mobile application not only to ease the medical process but also to disseminate accurate information quickly. The digital apparatus helped stem the spread of rumors and fake news, in addition to legal enforcement against people who spread inaccurate information or engage in profiteering. State media have also constantly covered the hotspots of the pandemic like China, Italy, Spain, and the United States to raise public awareness about the seriousness of COVID-19 and to demonstrate the essential of robust government intervention (ibid).
- Since late January, the government has required all people arriving from China to submit a health declaration and undertake quarantine in government-controlled facilities for 14 days. These requirements were gradually expanded to those arriving from the Republic of Korea, the United States, and EU countries. Quarantine is largely in military facilities and is free of charge (WHO, 2020b).

- Localized centers for disease control and preventive health facilities are closely collaborating with hospitals in case detection, isolation and treatment (Le, 2020).
- The public is well-informed of personal protective measures. The Ministry of Health informs the public of positive cases and potential exposures, and has provided guidelines for disease prevention on its websites. A government-run media campaign, including a viral music video, has promoted personal protective behaviors, while public and private telecom companies have collectively sent 3 billion messages on COVID-19 prevention to mobile phone users (ibid).
- Regular SMS messages sent to all phones from the very early stages told people what they could do to protect themselves (Jones 2020).
- [...] live chat for questions related to COVID-19 (La et al. 2020, p. 9).
- Hanoi Smart City app was also activated to provide a risk assessment tool, consultation on prevention measurements, contact reports and live updates for Hanoi citizens (ibid, p.12).
- These social media channels (Facebook and Zalo) provide additional room for the government, particularly the Ministry of Health, to communicate coronavirus-related information to its citizens in a timely manner (ibid, p.13).
- Long and short versions of Vietnamese sign language stop-motion videos on the do's and don'ts for children produced and distributed over 30 online media, through UNICEF and official Government social media channels (Flowers 2020).
- More than 30 online assets including videos, images with prevention and public health messages, and infographics widely disseminated through online and social media channels, including mummy bloggers and Kidsonline (a cloud-based Nursery and Kindergarten management system in Viet Nam) (ibid).
- Launched a national TikTok site Happyathome (challenge #ONhaVanVui) with more than 380 million views, 38,471 videos and 35 million likes (ibid).
- Produced a handwashing dance video with a Vietnamese celebrity dancer and kids and disseminated on social media (ibid).
- UNICEF posts on social media (Facebook, YouTube, Instagram, etc.) related on COVID19 have more than 2 million reaches (ibid).
- Dissemination of communication materials relating to COVID-19 through private sector networks – Vietnam Chamber of Commerce and Industry (VCCI), International Business associations, business consultancies, companies (employing white-collar and blue-collar employees) (ibid).
- Development of a 2-pager on family-friendly workplace in the context of COVID-19 (adapted from the regional guidance) which was disseminated through private sector networks (ibid).
- First episodes of “At home during pandemic” were on air from April 1 with UNICEF’s expert blog. The development of the expert blog is ongoing (ibid).

Messages

- Since “day one,” the Communist Party of Vietnam (CPV) and the state have led the fight with the motto “fighting the epidemic is like fighting against the enemy.” (Vu & Tran 2020).

- Vietnam made use of its ever-present propaganda machine to run a vigorous awareness campaign, drawing on wartime imagery and rhetoric to unite the public in the fight against a common enemy (Jones 2020).
- [...] COVID-19 patients; the progress (or lack thereof) of these patients has been communicated daily with the public (Phuong Nguyen 2020).
- Facebook posts on the government's official Facebook page (translated from Vietnamese with the Facebook translation tool):
 - 4 MORE NEW COVID INQUESTIONS-19 (FROM FOREIGN) (May 16th 2020):
 - BN315: Male, 39 years old, from Cambodia to country and illegal entry through the trail at 15 pm on 2/5, 2/5, to the aunt's house in Tan Dong, Tan Thanh commune, Tan district Chau (Tay Ninh).
 - BN316: Male, 19 years old, address in Da Nang city. On July 14/5, 14/5 from Philippines to the country on QH9352, shortly after entry at Can Tho International Airport, was taken to quarantine right at Dong Thap Military School.
 - BN317: Male, 29 years old, with address in Dien Khanh, Khanh Hoa. On July 13/5, 13/5, from Russian Federation to the country on VN00062, after entry at Van Don Airport was taken to quarantine right at Thai Binh Province Military School base 1.
 - BN318: Female, 41 years old, with address in Thanh Hoa city, Thanh Hoa province. On July 13/5, 13/5, from Russian Federation to the country on VN00062, after entry of Van Don airport was taken to quarantine right at Thai Binh Provincial Military School base 1 (Thông tin Chính phủ 2020a).
 - Reports from other countries (May 17th 2020):
 - India overcomes China on COVID-19 cases
 - Day 16/5 is the highest number of deaths in Russia since this country noted the first person to die of COVID-19 July 19/3.
 - To ensure that all Italian people can buy a medical mask for 50 cent, Special Commissioner on Italy's emergency, Domenico Arcuri says it will increase supply up to 30 million masks and distribute to pharmacies nationwide.
 - Spanish Prime Minister Pedro Sanchez on 16/5 says, this country government will seek new extension regarding emergency orders, according to this order will last "about 1 months" until the transition period unloading blockade is completed.
 - In NYC, Mayor Bill de Blasio says beaches here will not be able to reopen by the end of May. NYC is even trying to alleviate crowds in parks, especially in Central Park.
 - Korean Disease Prevention and Control Center announced that this country has recorded 19 SARS-CoV-2 virus infections, the lowest increase in the last week, when the last week Infection related to the outbreak in Itaewon night entertainment district, Seoul capital, has subsided (Thông tin Chính phủ 2020b).

- Examples of Vietnam being celebrated for its pandemic response (May 18th 2020):
 - The well-known Australia-based 7NEWS Australia channel has recently taken over five minutes during its daily latest headlines to praise Viet Nam's efforts on COVID-19 fight.
 - The news is opened up by a question: "Do you know which countries have been the most successful in protecting its citizens from coronavirus...?" by the 7NEWS broadcaster.
 - " Do you know which country is most successful in preventing COVID-19 pandemic in the world?"-female MC leads the news of Australian famous TV channel-7 NEWS asking questions (Thông tin Chính phủ 2020c).

Communicating uncertainty (transparency)

- Vietnamese Deputy Prime Minister and Minister of Foreign Affairs Pham Binh Minh proposed pursuing a balanced approach in fighting the epidemic and maintaining open economic policies, while ensuring regular updates were made available to the public (Vu & Tran 2020).
- The government has positioned itself as an effective source of leadership during the pandemic by providing information with transparency (ibid).
- By being transparent and proactive in communicating with the public, the government was able to gain and maintain public confidence (Vu & Tran 2020).
- Dr Pollack says the government did "a really good job of communicating to the public" why what it was doing was necessary (Jones 2020).
- In the social domain, during the early days after the first infected case, there had been rumors that the Vietnamese government was hiding information about the novel coronavirus, which caused some confusion and insecurity for the public. To respond to this information, the authorities and mainstream media promptly reassured the citizens that transparency is the fundamental principle of the country in preventing the spread of the virus. Government officials further explained that data and information from four Public Health Emergency Operation Centers of Vietnam were directly connected to the Centers for Disease Control and Prevention USA and, therefore, shared openly to the global database (La et al. 2020, p.17).
- Early, decisive and transparent actions by the country's leadership, along with the engagement and solidarity of citizens, have been key to Vietnam's success in combating COVID-19 to date (Le, 2020).

Community engagement (compliance)

- Public compliance with precaution measures, including social distancing, is high. Wearing face masks is mandated in public places, and alcohol-based hand sanitizers are widely available (Le 2020).
- The government and population are very, very used to dealing with infectious diseases and are respectful of them, probably far more so than wealthier countries. They know how to respond to these things (Jones 2020).
- It gave the sense of "society working together to defeat the enemy", says Dr Pollack (ibid).

- While Vietnam's authoritarian government is well used to demanding compliance, Dr Pollack says the public largely rallied behind the government because they "saw that they were doing everything they could do and having success, and doing whatever it cost to protect the population" (ibid).
- Enforcing social distancing and quarantine relied on its entrenched system of "loyal neighbourhood party cadres spying on area residents and reporting to superiors", says Phil Robertson of Human Rights Watch (ibid).
- On social media, images and quotes of Deputy PM Dam appeared extensively on citizen's posts, which created a sense of solidarity and the belief in government's efforts. Recently, the call from Prime Minister Nguyen Xuan Phuc on the whole nation's joint efforts in COVID-19 combat attracted public attention and support from individual citizens (Le et al. 2020, p. 17).

Inequality & access

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Adaption to a diverse public

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