Master's Thesis of International Studies

Global Crisis at National Level:
Public Governance Responses to Covid-19 in Italy and South Korea

국가 차원의 글로벌 위기: 이탈리아와 대한민국의 코로나19에 대한 대응전략의 비교분석

August 2021

Graduate School of International Studies
Seoul National University
International Cooperation Major

Sara Ceddia

Global Crisis at National Level:
Public Governance Response to Covid-19 in Italy and South Korea

국가 차원의 글로벌 위기: 이탈리아와 대한민국의 코로나 19 에 대한 대응전략의 비교 분석

Prof. Kim, Taekyoon

Submitting a master's thesis of International Studies

August 2021

Graduate School of International Studies

Seoul National University

International Cooperation Major

Sara Ceddia

Confirming the Master's Thesis written by

Sara Ceddia

August 2021

Chair _Eun, Ki-Soo_____

Vice Chair _Ahn, Jae Bin__

Examiner _Kim, Taekyoon_

Abstract

The year 2020 started with the international community witnessing the outbreak of a major coronavirus infection in China. In just a few weeks, the infection spread out to other countries, strongly hitting in particular Italy and South Korea which have thus become the first two countries to experience a major outbreak outside of China. With similar population ratio and comparable levels of economic development, Italy and South Korea have ranked for several weeks 2nd and 3rd for Covid-19 confirmed cases, becoming the new epicenters in Europe and Asia. However, the different policy implementations endorsed by the two governments to respond to the crisis have determined the two countries to experience very different outcomes, with South Korea slowing down the spread in record time while Italy not only keeps registering high number of daily confirmed cases, but also registers one of the highest mortality rate of the whole OECD area. This paper aims at investigating the degree of effectiveness of the crisis management strategies endorsed by the two countries and to analyze the extent to which such outcomes have been the result of the decision-making process carried out by the two governments and to what extent country-specific factors such as demographic pattern, healthcare system, crisis communication and trust in government have influenced the results.

Keyword : Covid-19; governance; crisis management; crisis response
Student Number : 2019-22785

Abstract in Korean

2020 년은 국제사회가 중국에서의 코로나 바이러스 감염의 발생을 목격하면서 시작되었다. 코로나바이러스가 발생한지 몇 주 만에 다른 나라들로 퍼져나갔고, 특히 이탈리아와 한국에는 강력한 타격을 받으며, 중국 밖에서 발생한 최초의 두 나라가 되었다. 두 나라는 유사한 인구 비율과 경제 규모로 몇 주 동안 코로나 19 확진 환자 수가 2, 3 위를 차지하며 유럽과 아시아의 새로운 서사시가 되었다. 그러나, 두 정부가 이 위기에 대처하기 위해 시행한 다른 정책으로 인해 두 나라는 매우 상반되는 결과를 경험하게 되었다. 한국은 기록적인 시간 내에 확산을 늦추고, 이탈리아는 계속해서 많은 일일 확진자를 기록하고 있을 뿐만 아니라 OECD 전체 지역의 사망률도 가장 높은 나라 중 하나가 되었다. 본 논문은 양국이 시행한 위기 관리 전략의 효과 정도를 조사하고, 이러한 결과가 양국 정부가 수행한 의사결정 과정의 결과인지, 인구통계학적 패턴, 의료제도, 위기 커뮤니케이션 그리고 정부에 대한 신뢰 등 국가별 요인이 어느 정도로 영향을 미쳤는지 분석하는 것을 목적으로 한다.

Keyword : 코로나바이러스; 거버넌스; 위기 관리; 위기 대응
Student Number : 2019-22785

Table of Contents

List of Tables and Figures

I. Introduction

In January 2020, the international community witnessed the outbreak of a major coronavirus infection generating from Wuhan, China. Between late January and early February 2020, the infection spread out to other countries, hitting hard Italy and South Korea which have thus been the first two countries after China to experience a major outbreak of infection. With a similar population ratio and similar levels of economic development, Italy and South Korea ranked for several weeks 2nd and 3rd for COVID-19 registered cases. Despite similar initial conditions, the different policy implementations endorsed by their respective governments to respond to the crisis have been considered determinant factors that lead the two countries to two very different outcomes – with South Korea slowing down the contagion pace in less than a month while Italy not only keeps struggling with the virus today, but also registers one of the highest mortality rates of the whole OECD area. Although Italy's drastic lockdown measures along the line of the Wuhan model, the process of keeping the infection curve under control has been long and slow, while South Korea has been able in the same amount of time to slow down contagions in record time, being praised from the international community for having implemented aggressive and prompt tracking policies able to isolate positive cases and keep the outbreak under control. As a consequence of the World Health Organization declaring the COVID-19 outbreak a global pandemic, Italy, which back then was already the epicenter of the disease in Europe, decided to impose travel restrictions from China, as well as a soft lockdown in the main hotspot regions of Lombardy and Veneto. Many people living in such regions would not be allowed to enter or leave certain towns for 14 days without a work or health-related special permission and such measures have been accompanied by business, schools and public places shut down, along with recommendation to keep physical distance. Despite the restrictive lockdown measures

and the individuation of the “Patient 1” which back then was supposed to have infected at least 600 more people, the number of confirmed case started to rapidly increase. Consequently, by the end of March, Italy turned into the second worst hit country in the world after China, which lead the Italian government to extend even more restrictive lockdown measures to the whole country, resembling what happened in the Chinese city of Wuhan. On the other side of the world, South Korea was also experiencing a major outbreak of the disease which, similarly with Italy, made it record hundreds of new cases between late February and early March. However, differently with the southern European country, South Korean quick bureaucracy promptly allowed the private sector to start producing test-kits on the same gene model recommended by the WHO and has a result, the country has been able to achieve the goal of testing an average of 20,000 people per day independently from the presence or lack of symptoms. Moreover, South Korea has promptly instituted drive-through testing-centers which have allowed sanitary personnel to conduct tests in safe conditions, avoiding potential positive cases to access hospitals (and consequently infect other people) and managing to identify and isolate also asymptomatic carriers. On the top of that, the South Korean government has been able to effectively track its citizens through apps and geo-localization services to spot possible interactions with infected people and thus proceed to test and isolate. Therefore, with no need to impose specific travel bans and to shut down the whole country, the measures implemented by the Korean government, although remarkably less draconian than the ones adopted in Europe, gave in far shorter time the result that other countries around the world are trying to achieve with immense social, economic and personal sacrifices: keeping the contagion curve under control and drastically reduce the number of fatalities.

Based on these premises, this research aims at performing a qualitative comparison of the strategies adopted by the Italian and South Korean government to respond to the COVID-

19 crisis, using the method of difference to analyze the relation between implemented measures and resulting outcomes and eventually evaluate their overall effectiveness.

What have been the reasons that have led the two countries to adopt such different strategies? And how have internal and external factors influenced their respective outcomes?

In the attempt to provide an answer to the questions above, this paper will analyze the response of the two country's government and will determine, on the basis of their national crisis response frameworks, to what extent they have actually been able to effectively respond to the pandemic and with what degree of efficiency; subsequently, I will proceed to a cross comparison analysis to find out the reasons that determined the evaluation proposed in the previous part; lastly, on the basis of the findings, the conclusion and discussion part will determine what characteristics an effective crisis response should have in order for countries to successfully tackle this and other viruses today and in the future.

The case studies' choice is justified by the fact that Italy and South Korea have been the first two countries to be *majorly* and *significantly* affected by a COVID-19 outbreak after China. While other countries that experienced later outbreaks could take advantage of the experience and information of those who experienced it before, the case of Italy and South Korea guarantees that there is no prior information asymmetry in strict relation to COVID-19. Another main reason to look at these two countries is that although the similar initial circumstances (similar levels of economic development, similar population ratio, similar COVID-19-related initial conditions), they have chosen to adopt very different – to a certain extent opposite – strategies to respond to the crisis and the consequent result has been drastically different, with South Korea keeping the curve under control in record time while Italy still struggles with the virus today.

II. Literature Review

2.1 Covid-19: What do we know so far?

In a globalized era with invisible borders and free movement of people and goods, a new and mysterious virus has started to claim victims worldwide. Governments and international institutions around the world have found themselves to fight a new invisible enemy and their ability to effectively tackle it and neutralize it have been highly dependent on the information available in regards to its nature and spreading modality.

After all the extensive research carried out in the past months by the scientific community in regards to Covid-19, today we know that the first cluster of the novel coronavirus was first discovered in December 2019 after the health authorities in Wuhan, China, identified a cluster of pneumonia cases of unknown etiology which seemed to have a connection to the city's local wet market (Lake, 2020). Further analysis and investigations have revealed the connection between the reported cases and a novel type of coronavirus (SARS-CoV-2), identified as the agent of transmission of the disease (ibid). Features of the new disease included pyrexia, acute respiratory distress, reduced or normal white blood cells and resistance to 3-5 days-antibiotic treatment. Thinking about a potential connection with the severe acute respiratory syndrome (SARS), further investigations led to the discovery of a novel coronavirus, globally known today as COVID-19. Early reports based on amino acids and codon sequences analysis have suggested the novel coronavirus to be a zoonotic disease (transmissible from animals to humans) hosted by snakes. However, further researches based on phylogenetic analysis seem to confirm that the SARS-CoV-2 has actually originated from a bat which has played an intermediary role. Such hypothesis seems to be backed by the massive presence of bats, poultry and snakes in the South China Seafood Market where the disease has generated from.

Since then, the outbreak has caught the international community's attention and although the Chinese government has often been blamed for having informed about the virus outbreak with a significant delay - thus inhibiting a more rapid international prevention to its spread in other countries - it has still been possible to see an extraordinarily rapid and effective scientific response with identification of the pathogen, publication of its genome and development of highly specific diagnostic tools, leading the scientific community to start working on a vaccine within a few weeks from the first cases detection.

There are at the moment several vaccines available and being administered around the world. The first mass vaccination program initiated in early December 2020 and millions of vaccine doses have already been delivered in a large number of countries so far. However, despite the quick introduction of vaccines, the short time since the beginning of their usage has brought along many unanswered questions surrounding the matter, animating a fervent debate within the scientific and civil community about vaccines' efficacy and safety. Despite the contrasting information coming from different sources are strongly influencing people's willingness to get vaccinated, the World Health Organization still considers data available so far encouraging and despite the scientific community is still learning in details about the strength and coverage of the vaccine protection, the advice to undergo vaccine is still strongly supported by official institutions (WHO, 2020).

To those who wonder whether the beginning of the vaccine campaign will quickly lead to the restoration of pre-pandemic life conditions, the scientific community does not miss to remind that the effect of such vaccines on the pandemic progression will largely be influenced by other factors, including their effectiveness, approval speed, manufacture and delivery, appearance of new variants, number of people willing to undergo vaccination and other factors that are still unforeseeable at the moment. Moreover,

although the scientific community is currently working hard to ensure that approved vaccines can be as effective as possible, recent tests and trials seem to show that despite the high level of efficacy of the vaccines approved so far, Covid-19 ones, just like other vaccines alone, will not be 100% effective to the whole population, suggesting that even after the completion of vaccine campaigns in different countries, attention will still have to be kept high and precautions currently in place will be likely to be extended for longer than we may think.

2.2 How are other countries tackling the virus worldwide?

After a couple of months monitoring the disease evolution and spreading modalities, countries have started to implement more or less drastic measures to slow down the infection spread as the number of COVID-19 related-deaths started to increase and the WHO declared a global pandemic on March 13th, 2020.

As most countries immediately took measures to promote social distancing and discourage group gatherings, social events have been canceled, business and other non-essential activities have been shut down and national/international travelling has been largely discouraged worldwide (Cohen & Kupderschmidt, 2020).

Widespread confusion about what works best and how to balance necessity and effectiveness of the spread-prevention measures has led different countries to adopt different strategies whose heterogeneity not only symbolizes different phases of the epidemic but can also be seen as an expression of different countries' resources, cultures, governments and laws. Italy, for instance, being the most hardly hit country in Europe, has experienced a sudden rise in number of infections and Italian hospitals' intensive care units (ICUs) have been dramatically overburdened with patients in need of medical care. As the situation got worse, Italy has also been the first European country to implement

drastic lockdown measures, followed by Spain, France, United Kingdom and Germany, with police forces deployed on the streets ensuring lockdown measures would be respected.

On the other side, countries like South Korea, Singapore and Hong Kong seem to hold important lessons as they have managed to flatten the Covid-19 contagion curve in remarkably short time without the need to implement drastic lockdown measures seen in China, Europe and the United States.

The most remarkable case is with little doubt South Korea, which has seen confirmed infections decrease from 909 cases on February 29th to 74 in mid-March, eventually reaching 0 in early May (despite experiencing a new surge of cases during the second wave). According to a large part of literature, the key for South Korean success seems to be a large, extensive and well-organized testing system which has been able to effectively detect and isolate infected people. This strategy, which has allowed to test more than 270,000 people by March 16th and many more in the successive months, combined with a highly organized system of citizens' tracking, has been able to promptly individuate interactions with positive cases and intervene to testing and isolation. While debate within intellectual circles has often suggested that East Asian societies are generally more open to the idea of having some of their freedoms curbed for the collective good sake compared to Western societies, another part of literature highlights how such result is rather to be attributed to the previous experience that this region had with previous viral infections such as the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003 or the Middle East Respiratory Syndrome (MERS) epidemic in 2015, which hit South Korea. Many scholars also notice how while many countries in the first phases of the pandemic have been debating on the use of masks and their actual effectiveness against the virus, many East Asian countries such as South Korea and Japan were already accustomed to its use in daily life, skipping that part of debate that has been

inflaming many Western countries in the very first phases of the outbreak (Robbin Marks, 2020).

The whole international community, despite the vaccine campaign having started more or less quickly in many countries, is still wondering when this global pandemic will end and what the post-pandemic world will look like. Unfortunately, the answers coming from the scientific community do not seem encouraging: despite the vaccine campaign proceeding, it is still likely to think that it will take a long time for the world to get back to its pre-pandemic shape, even more with the recent appearance of new variants. Even before the introduction of Covid-19 vaccines, due to the dramatic costs to economy, social life and mental health provoked by drastic lockdown measures, some governments have been considering the idea of starting a phase of co-existence with the virus by slowly opening up again and by letting their populations gradually build up immunity through selective infections in groups regarded as low-risk, like children and young adults.

However, the significant economic and human costs that countries will have to pay until the achievement of mass immunity call for a quick understanding of which non-pharmaceutical tools and strategies are better designed to keep the infection under control, and some countries more than other seem to hold important lessons in this regard.

2.3 How are societies responding to the crisis?

Government responses worldwide are posing important challenges for civil society as well. The profound changes introduced by response measures have caused unparalleled disruption in all levels of our social system, with all layers of society being more or less involved in mitigation strategies aimed at minimizing the economic, human and social impacts of the virus. In many western countries, lockdowns and physical distancing

measures have been forcing people inside their homes, determining social distancing measures to hinder people's possibility to meet, organize and advocate.

For this reason, in regards to the pandemic, it has been often said that as much as it heavily impacted healthcare, it has also become a trigger of deep changes for what concerns people's social habits. For instance, in countries such as Italy, where the widespread lockdowns forced a large part of its population at home for several months, internet and social networks have transformed into an alternative answer to social life, determining such online tools to became a new arena of debate on the matter. Therefore, on the social side, social media platforms have become progressively important tools of information sharing and dissemination, with countries' health/political authorities, WHO, journals and other relevant stakeholders providing regular updates and posting guidelines across different platforms. As public demand for information about Covid-19 increased, specific communication teams of experts would be involved in the response process, with SNS becoming the new online arena for debate (Josephson & Lambe, 2020). For instance, social media platforms like Facebook are now using the news feed function to direct users to the WHO website or to websites of other relevant local authorities while Google Scholar has started to highlight authoritative medical journals and other sites. Twitter as well is now using algorithms to redirect people looking for corona-related contents to reliable sources.

However, on the negative side, social media platforms have often become place for a massive spread of deliberate and incorrect information, with many unofficial channels and perpetrators using SNS such as Facebook, Twitter, YouTube to willingly or unwillingly spread unverified and/or inaccurate news, thus generating a widespread sense of panic and confusion. This information mismanagement has created a generalized sense of confusion that has been often defined by WHO as an "*infodemic*", meaning an over-abundance of often contrasting information that hinders people's perception and ability

to find trustworthy sources and reliable guidance (WHO, 2020). This situation has highlighted throughout the whole pandemic management process the necessity for both local governments and international institutions to tackle misinformation at its origins and coordinate efforts promote a clear, reliable and trustworthy crisis communication able to take full advantage of the potential contribution of civil society.

As highlighted by a large part of literature, a virtuous example to look at could be represented by South Korea: in fact, South Korea not only has been able to use ICTs solutions to spread coherent and reliable information on the pandemic progression and improve its crisis communication, but it has also been able to involve its civil society's actors into a collective crisis response strategy based on cooperation and collaboration (Paek & Hove, 2021). While in some countries the focus was on government and political leadership capacity in containing the Covid-19 pandemic, other countries such as South Korea have been treating civil society as an important partner, creating a comprehensive government-civil society collaboration and tackling the virus on a double dimension which promotes civil society involvement at the stage of governance (Jeong & Kim, 2021). The case of South Korea challenges the common view that sees countries mainly responding to the crisis through government's action, and rather shows an alternative model of various single social actors belonging to the civil society playing along with the government in shaping the country's response to the pandemic.

Civil society in South Korea has taken an important role by serving the community and the vulnerable layers of its population, with nonprofit and community organizations providing support for emergency living expenses and funding areas with high rates of confirmed cases. In the process of providing services to vulnerable people, civil society organizations also became important stakeholders able to raise their voice to ask for structural changes in public policy and socio-economic system, calling for a more sustainable and inclusive system (The Hope Institute, 2020). For instance, civil society

organizations such as the Rotary International of Busan Metropolitan City and Live Right Movement Busan Metropolitan City contributed to donations which were later used to provide urgent quarantine supplies in the early part of the pandemic (Busan Metropolitan Government, 2020).

Hence, while an effective Covid-19 response at the country level is made up of a whole set of actions performed by different actors and sectors, South Korea among many other countries has proved how important the role that civil society plays during the pandemic is, with many scholars believing that a fourth –T – standing for Teamwork – should be added to the South Korean '3T' slogan which originally stands for *Test, Trace and Treat* (Jeong & Kim, 2021).

Despite more than one year has passed since the outbreak of the pandemic, there is still a widespread uncertainty about what measures are more effective to contrast the virus' spread and despite the vaccine campaign having started in large part of the developed world, the possibility to go back to a full pre-virus normality is still not visible in the near future. Moreover, the continuing discovery of new variants and the risk that they might be resistant to vaccine require countries' attention to stay high. While both countries keep using their own way, with Italy implementing full or local lockdowns from time to time and South Korea continuing with its massive testing and aggressive contract tracing, one would wonder which model is so far giving the best results. The next sections will try to analyze the results with the help of the frameworks respectively used by the two countries.

III. Research Design

3.1 Research Questions

The analysis starts from the assumption that South Korea has been overall more successful in dealing with the Covid-19 crisis than Italy, reaching quicker results in the same amount of time and showing higher levels of effectiveness. Based on these premises, the analysis will try to answer two main research questions:

1) *What factors have determined such a different outcome in the way Italy and South Korea dealt with Covid-19?*

2) *Which of the two strategies has more potential to become a model that other countries can successfully look at in dealing with current and future pandemics?*

3.2 Dependent and Independent Variables

Anti-COVID-19 measures will be set as independent variables while the curve-flattening speed, decrease in number of cases and deaths, as well as economic recovery – interpreted as a sign of effectiveness of such measures - will be set as dependent variables.

This research has two main goals. The first one is to investigate the causes that have led the two governments to adopt such different approaches which eventually led to such drastically different results, trying at the same time to identify factors directly depending on the governments' decision-making process and other factors that worked as "facilitators" as deriving from pre-existing conditions strictly embedded in each reality.

For example, factors directly deriving from governments' decision could be the choice of implementing lockdowns rather than relying on contact tracing, while the so-called facilitators could include population's age, information asymmetry, government adaptability, legal constraints and so on.

The second and last stage at the end of the analysis is to evaluate, on the basis of their effectiveness, whether one between the two strategies can be more widely generalizable and thus represent a model that other countries could potentially look at to develop their own strategies in further fighting Covid-19 or any other virus that might appear in the future.

3.3 Theoretical Framework

As mentioned above, the research starts from the assumption that the tackling strategy implemented by the South Korean government has been generally more effective in dealing with the Covid-19 crisis. In order to confirm or deny this hypothesis, the research will look at the risk frameworks adopted by the two governments to respond to crisis and will proceed to evaluate to what extent they successfully managed to implement them.

Before moving onto the two government's frameworks, I will borrow some concepts from other relevant international frameworks such as the WHO International Health Regulations (2005), OECD Strategic Crisis Management Framework (2012) and Sendai Framework for Disaster Risk Reduction (2015-2030) in order to better define the concepts this research is based on and provide a clearer background.

The Strategic Crisis Management Framework, presented at the OECD High Level Risk Forum (2012) highlights how governments are nowadays confronted with an increasing number of crises which often involve novel and unexperienced threats spreading beyond national borders with the potential to create significant economic knock-on effects and threats to social cohesion, political stability and interconnected global economies. As governance quality and citizens' trust in governments are directly impacted by how swiftly and efficiently governments perform in this essential responsibility, a good crisis management strategy is an essential factor to evaluate governments. Examples of such

crisis include the 9/11 attacks, the SARS and N1H1 pandemic outbreak, Hurricane Katrina, and other natural disasters and, here *I personally add the Covid-19 pandemic.* Such crises are all very different from one another but they all share some common characteristics:

- Unexpectedly large scale
- New or unprecedented nature – at least in human or crisis managers' memories (D. Leonard);
- Trans-boundary nature (Ansell, Boin, Keller, 2010) – by trans-boundary we mean that such crisis spreads across geographic borders (nations, States and local authorities) and policy boundaries (public-private sector, administration, etc.).

To be more specific, I here catalogue Covid-19 as a "*public health risk*", meaning "*a likelihood of an event that may affect adversely the health of human populations, with an emphasis on one which may spread internationally or may present a serious and direct danger*" (International Health Regulations, 2005).

Still according to the OECD High Level Risk Forum, while crisis management approach traditionally includes three main phases consisting in (1) preparedness before crisis, (2) response to limit damages during the crisis and (3) feedback after the crisis to improve the overall process, each government, depending on its institutional structure, history, exposure to hazards and threats has developed specific institutions and governance mechanisms to deal with emergency and crisis management (ibid).

Another fundamental factor to consider is that while traditional crisis usually offer ground to develop capacities and tools based on crisis that happened in the past, dealing with novelty and trans-boundary crisis call for a more holistic approach which need to address the following changes:

- Developing a broader and shared view on risks at national level through a multi-hazard approach and include new and emerging potential threats through updates and horizon time-scale.
- Sharing the risk assessment widely to all stakeholders that can be involved or play a role in emergency response. In other words, coordinate and strengthen cooperation among different disciplines and stakeholders setting common criteria to assess impacts. This is particularly significant in the case of unprecedented crisis that cannot be tackled with pre-existing plans and that thus require inter-agency cooperation and large network interaction to be able to innovate and improvise.

3.3.1. Italian Civil Protection Health Emergency Framework. When it comes to disaster management, the Italian institution in charge is the Civil Protection Body whose legal framework defining role, tasks and composition is known as the *Decreto Legislativo 2/1/2018, n. 1* (entered into force on 6 February 2018 after being amended from a previous version). As also described by the *European Commission Humanitarian Aid & Civil Protection Vademecum* (2017), Civil Protection in Italy is an integrated system allowing the coordinated use of all available public and private resources with an operational structure set-up that takes into account the administrative organization of the country. Hence, the general mission of national Civil Protection is to *protect lives, goods, properties and environment from damage or threats* caused by natural and technological disasters and other calamities, both at the local and central level.

The final goal of the Civil Protection is to implement coordinated measures to remove obstacles and coordinate measures to *protect lives, get back to normal living and working conditions*, to restore essential services, to reduce the residual risks in the areas affected by the calamitous events, to reinstate public and private structures and infrastructures, *as*

well as businesses and cultural goods, in order to plan consequent measures for the recovery (*Decreto Legislativo 2/1/2018.* Art. 2.7; 4).

3.3.2. South Korea: Framework Act on the Management of Disasters and Safety. Analogously with the Italian one, the South Korean Framework Act on the Management of Disasters and Safety declares that the State and the local governments shall be responsible for *protecting lives, bodies, property of people from disaster or various other accidents*, by preventing disasters and other accidents from happening and mitigating damage therefrom, formulating and implementing plans in order to promptly deal with potential crisis and relative damages.

Moreover, with a special attention to infectious diseases, the Framework Act was complemented in 2010 by the *Infectious Disease Control and Prevention Act*, in the attempt to better reflect the 2005 International Health Regulation adopted by the WHO and the lessons learnt from the H1N1 influenza pandemic. The Act requests the Ministry of Health and Welfare to prepare a Master Plan for preventing and controlling infectious disease every 5 years and it also clarifies the different responsibilities of various levels of governments and health institutions for an effective infectious disease surveillance, detection system, vaccination programme, infection control measures, stockpiling policy for medical countermeasures as well a system of financing and compensation regulations.

One of the flaws is that the Act does not specify in detail the coordination mechanism between the various levels of government but on the positive note it has been recently updated to incorporate lessons from the 2015 MERS-CoV outbreak. Such updates addressed some of the most pressing needs identified during the previous disasters which include lack of coordination between emergency response agencies, need to strengthen the infectious disease control system, need to reinforce hospital regulation and increase public health workforce (OECD 2019).

3.4 Limitations

The research is not exempt from limitations. First of all, the existing lack of consensus that still exists for what concerns the virus, its effective lethality, methods of transmission and cure still represent an obstacle in finding coherent information that scholars and experts jointly agree on. Moreover, the novelty of the topic also determines the available material to be limited in quantity. Secondly, despite the attempt of this research to take into account as many factors as possible to explain the two countries' performances, there might still be other factors that it fails to consider in explaining the outcome. Lastly, despite the last part of this research tries to identify a strategy that is more likely to work and that thus has more potential to become a model that other countries can feel inspired from and look at while building their own response, it does not take into account all the infinite pre-conditions and local factors that belong to each single reality and which would influence the ability to effectively reproduce and implement such model elsewhere.

3.5 Data Source

This research will rely on information obtained through various channels which include the KCDC website, Italian Ministry of Health Website, Italian government official website and database, Korean government website and database, WHO database, academic papers, journal articles and many more.

IV. The Case of Italy

4.1 Background

Along with the rest of the world, Italy was first informed about Covid-19 in December 2019 and it became the very first European country to experience a significant outbreak after China (Rezoagli E. et al., 2020). After the appearance of the first cases in China, the subsequent formalization by WHO on January 7th, 2020, followed by the lockdown in Wuhan and other neighboring areas within the Hubei province, along with the growing level of alert by the WHO on January 26th, 2020, started to increasingly catch the Italian government and public opinion's attention.

One of the first points that needs to be unfolded before moving onto the main discussion is to understand why some countries like Italy decided to respond to the spread of cases by implementing partial or total lockdowns while some other countries like South Korea decided instead to avoid drastic closures and preserve as much as possible the image of a pre-Covid-19 daily life.

When Covid-19 first started to spread outside of China, the Chinese experience was the only one other countries could look at. China has been the first country to implement local lockdowns, starting from the Hubei region and shutting down business, imposing travel restrictions for residents, totally or partially suspending public transportation and implementing all those restrictions that would help reducing social contact along the line of what became famous as the "Wuhan model".

In the case of an emergency generating from a mysterious virus whose characteristics and spreading methods are not still clear, the first instinctive reaction would be to enforce restrictions aimed at limiting social contact and physical interaction as much as possible. In this context, lockdown is a measure able to guarantee social distancing by restricting

physical interactions among individuals. Italy therefore, with no previous experience in its recent history of infectious disease management, decided to follow the Wuhan model hoping to slowing down the contagion pace, limit the infections and deaths and relieve the sudden and extreme burden on the national health system (Briscese et al., 2020).

Italy reported its first confirmed cases on January 30th, 2020, when a couple of Chinese tourists arrived in Rome (after having visited Milan on the 23rd) and started to show suspect symptoms for Covid-19. The couple was then admitted to the *"Lazzaro Spallanzani" National Institute for Infectious Diseases* in Rome where they tested positive to the virus. On the same day, WHO officially declared the outbreak of Covid-19 as a "*public health emergency of international concern*" (Giovannetti M. et al., 2020). A few days later, on February 6th, 2020, an Italian man just returning from China tested positive to the virus, representing the very first Italian patient and being named "*patient zero*". After him, it was reported that the first Italian *to contract* the virus *within the Italian territory* was a 38-years old man from Codogno (Lombardy region), on February 20th, 2020. In the next 24 hours, 15 more people were found to be infected in the same area as authorities discovered a new cluster of infection in the nearby town of Vo', in the Veneto region. In the same day, the nearby city of Padua, reported the first Covid-19 casualty for a 78 years old man. In this situation, Lombardy region (original hotspot of cases) promoted a structured logistic response and an increase in ICU bed capacity, determining what some people described as a prompt and coordinated response.

Moreover, starting from February 23rd, the Italian Government started to implement its first measures to contain the outbreak. More specifically, 10 municipalities of Lodi province and the nearby town of Vo' were declared "red zones" and become subject to a ban on exiting and entering the area without special permission, with penalties and fines for those who would violate the regulations. In addition, school trips within and outside of Italy were interrupted, schools, shops and museums were closed. The number of people

testing positive kept increasing in the next days and on March 4th, 2020, when casualties caused by Covid-19 surpassed 100 deaths, the Italian Government decided to close schools across the whole country. The government developed new health recommendations in the attempt to support clinicians in taking decisions in matter of resource allocation. Further programs concerning the humanitarian and educational sphere were designed and distributed to promote awareness within the population.

Despite the measures taken, the numbers of deaths and confirmed cases continued to rise and between March 7th and 8th, the news leak of a not yet approved governmental decree aiming at prohibiting movement in and out the main hotspot regions of Lombardy, Emilia Romagna, Piedmont, Marche and other fourteen provinces in Veneto, determined a widespread panic within the country resulting in thousands of people "escaping" from the Northern Italian regions comprised in the decree towards the south. More specifically, hundreds of Italian students living and working in the north but having families in the south reached Milan train station after the decree leak to go back to their families in the south before the decree's validity period would start. This exodus has been described by many prominent Italian newspapers as the "*escape to the south*", which, according to the Italian virologist Roberto Burioni, "*has caused many people to try to escape, causing the opposite effect of what the decree is trying to achieve*" (Giuffrida, 2020).

Immediately after this episode, on March 9th, the Prime Minister Giuseppe Conte declared a state of emergency across the whole country through the emanation of a governmental degree called "#IoRestoaCasa" (#IStayHome), allowing people to go out only for necessary working purposes, such as to purchase basic necessities or for other health-related purposes. Moreover, in collaboration with the Civil Protection Department and the Italian Higher Institute of Health, the government proclaimed the adoption of additional safety measures which included the definition of an interpersonal distance of minimum one meter and compulsory use of masks when going out.

Despite the general lockdown and the measures adopted, Italy kept witnessing a surge in the number of confirmed cases and causalities, as shown in Figure 1 below. The graph shows the cumulative trend confirmed cases (■) and deaths (●) in (**a**) Italy as a whole and in (**b**) the most hit areas while the dashed line describes the 0.1% of the whole population. Data for this graph were retrieved from the Italian Civil Protection Department which would communicate the toll of new cases every day at 18:00. In a first moment, by March 20th, 2020, the amount of confirmed cases was lower than 0.1% while lethality, expressed as ratio between casualties and positive cases, was in a range of 7.3%-8.3% (Motta Zanin G. et al., 2020).

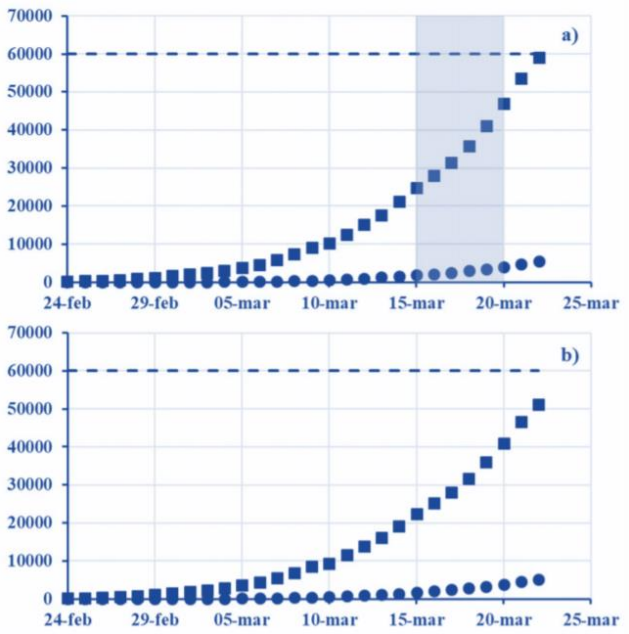


Figure 1 – Cumulative trend of infected people and deaths in Italy and in the most affected Italian regions. (Source: Italian Civil Protection Department, Accessed on April 27, 2020; author's calculations)

In the following days the Civil Protection started to spot and report new deaths and an increasing number of cases also in the regions bordering with the initial epicenter and by March 15th, 2020 the number of deaths would be in a ratio of 10 people per million inhabitants, determining Lombardy, Veneto, Friuli Venezia Giulia, Trentino Alto Adige, Piedmont, Emilia Romagna, Marche, Liguria and Valle D'Aosta to be not only the most

hit regions (Figure 2) but also the ones hosting almost the whole number of positive cases within the whole country (ibid).

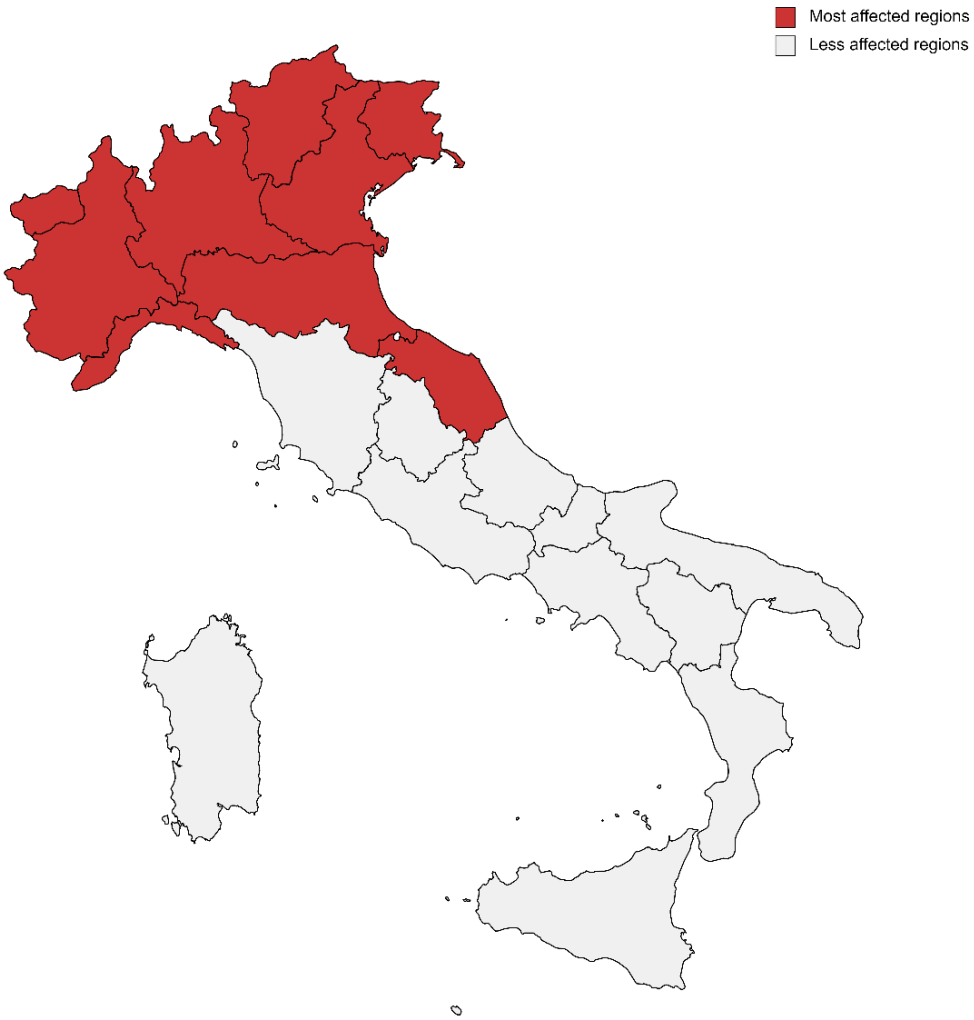


Figure 2 – Italian regions with the highest number of cases at the beginning of the outbreak

Since then, Italy has been alternating periods of local or total lockdown and periods in which restrictions would be lifted, with a more recent division of its national territory into "areas" that get a color assigned based on the amount of cases, index of transmission (calculated as an *Rt index*) and pressure on hospitals. The areas are divided as:

- **Red areas** (highest level of alert) where circulation is forbidden within the same city and within different regions unless justified by working or health-related

reasons; other restrictions include closure of bars and restaurants with only take out (until 22:00) and delivery (no restrictions) allowed, closure of non-essential shops with the exception of supermarket, pharmacies and other activities selling goods of primary necessity, closure of schools with reliance on online classes, with the only exception of elementary schools and kindergartens.

- **Orange areas** (medium level of alert) where circulation is forbidden from 22:00 to 5:00 unless motivated by working or health-related reasons; circulation within different regions is forbidden while circulation within the same city is restricted; other restrictions include closure of bars and restaurants with only take out (until 22:00) and delivery (no restrictions) allowed, closure of shopping malls with the exception of supermarket, pharmacies and other activities selling goods of primary necessity, closure of schools and universities with the exception of middle, elementary schools and kindergartens, reduction of the public transportation system up to 50%, with the exception of school buses.
- **Yellow areas** (low level of alert) where circulation is forbidden from 22:00 to 5:00 unless motivated by working or health-related reasons. Other restrictions include closure of bars and restaurants at 18:00, with take-away allowed until 22:00 and no restriction for delivery; closure of shopping malls with the exception of supermarket, pharmacies and other essential business, online classes for secondary schools and universities, offline classes for middle, elementary schools and kindergartens, reduction of the public transportation system up to 50%, with the exception of school buses.
- **White zone** (very low level of alert) where no restrictions are in place apart from the compulsory use of masks and other devices of individual protection (Governo.it, 2021).

Since the introduction of the colored areas system, the government has been giving each of the 20 Italian regions a color that would reflect the local situation in terms of contagions/level of emergency and that would be continuously updated based on the cases progression. After one year from the beginning of the outbreak, giving the approaching Easter season, Italy started another total lockdown with heavy restrictions across the whole territory with the exception of just one region, the island of Sardinia, which has been declared "white zone". This suggests that the Italian government will continue to implement occasional lockdowns, sticking to the management strategy used since the beginning of the outbreak.

But how has this strategy been evaluated so far and how effective has it been?

Italy's management evaluation has in this sense been subject to contrasting opinions, with one side of literature praising it for its quick and prompt management and another one criticizing it for the opposite reason, rather highlighting its lack of coordination and not enough quick response.

4.2 The Italian Response: Praise

In the first phases of its response to Covid-19, the Italian government's management has been praised by different sources.

The *Financial Times* (2020) published an article acknowledging the effective management of the back-then Prime Minister Giuseppe Conte and the disciplined behavior of Italians in following the government's guidelines. The positive evaluation is expressed at the end of the first national lockdown and the author puts Italy in comparison to its European neighbors such as France, Spain and United Kingdom which, despite experiencing an outbreak after Italy and having had more time to monitor the situation in

Italy and learn from it, faced a second dramatic surge of cases after prematurely lifting restrictions, while Italy managed in the same period to keep the disease under control.

According to the Italian virologist Fabrizio Pregliasco (2020), from the University of Milan, Italy has been able to better keep the virus under control compared to its neighbors because Italy, being the first country to face a significant Covid-19 outbreak in the region, was more careful and gradual in planning its post-lockdown response, with restrictions being lifted more cautiously. This determined the government to enjoy a higher degree of agility, with the possibility to restore restrictions in case of need. While the former Prime Minister Giuseppe Conte throughout the whole process never missed to remind Italians to keep the level of alert high and staying vigilant, the state of emergency declared at the beginning of the outbreak also gave him the possibility to rule by decree, allowing the government to quickly react when needed and to adapt its response to the situation.

Ferdinando Luca Lorini (2020), director of intensive care at a hospital in Bergamo also says: "*We have gone from the most affected country to one of the virtuous ones in the management of the pandemic thanks to the clarity of the rules from the very beginning, and the willingness of everyone to respect them*."

Along with several authoritative newspapers such as Bloomberg, CNN, The New York Times, The Guardian and others, also the World Health Organization has been expressing its appreciation for Italy's "*genuine sacrifices*" to slow down the virus in the first phases of the pandemic. In fact, when the Prime Minister Giuseppe Conte declared movement restriction and quarantined the areas hit by the pandemic, the WHO-director general Tedros Adhanom Ghebreyesus has been tweeting: "*The government & the people of Italy are taking bold, courageous steps aimed at slowing the spread of the #coronavirus*

& protecting their country & world. They are making genuine sacrifices. @WHO stands in solidarity with Italy & is here to continue supporting you" (Ghebreyesus, 2020).

Further praises from the WHO arrived on September 25th, 2020, when WHO uploaded on its official YouTube channel a video tracing the development of the pandemic in Italy, with a series of testimonials and interviews from exponents of the public health sector such as Silvio Brusaferro (President of the Italian National Institute of Health), Flavia Riccardo (Researcher at the Italian National Institute of Health, Department of Infectious Diseases) and Franco Locatelli (President of Italy's Higher Health Council). The video, which was also retweeted by the Italian Prime Minister on his twitter with the caption "*The World Health Organization pays tribute to Italy*", states that "*Italy showed the epidemic's trajectory could be turned around through commitment, coordination and communication across government and communities, a resilient public health system and by following a science-based response*" (World Health Organization, 2020).

4.3 The Italian Response: Criticism

Despite the words of praise from authoritative institutions and experts, despite the ability to drastically reduce the number of positive cases at the end of the first lockdown and despite having been able to keep the situation under control in the post-lockdown phase (unlike what happened in other European countries which experienced a new surge of cases in summer), Italy's management has also been subject to harsh criticism for the lack of effectiveness of its measures, with arguments in strong contrast with the praises expressed above.

Pisano et al. (2020) argue that while some features of the Covid-19 crisis in Italy were due to simple *sfortuna* ("bad luck" in Italian) which was at the base of an unfortunate

timing and other factors that were not under the full control of policy makers, it is also true that the model that Italy has decided to adopt to manage the crisis presents a series of shortcomings that inhibited a prompt and systematic response to it. For example, one of the factors mentioned is related to risk perception: in its very first phase, the Covid-19 crisis, despite scientific circles warned for weeks about the upcoming catastrophe, has not been fully perceived as such by the Italians due to the widespread skepticism expressed by some political groups. A practical example took place in Milan in late February 2020, when some well-known Italian politicians participated in public handshake, symbolically suggesting that people should not be scared and that the virus should not be regarded as an obstacle to the country's economy. Similar reactions would be noticed also in other European countries in a phenomenon known as *confirmation bias*, consisting in the attempt to seize upon some specific information that confirm a certain preferred opinion. Pisano et al. (2020) also highlight how threats such as the Covid-19 pandemic are extremely tricky because of their nonlinear fashion evolution, starting slowly and exponentially intensifying. In such cases, the most effective way to quickly contrast it is to start taking action very early, when the threat still appears to be small. However, in case intervention actually works, it will appear in hindsight as if those early actions were an exaggeration.

Pisano et al. also highlight how the Italian approach failed due to the adoption of partial solutions that backfired in the end: in fact, the Italian government decided to respond to the crisis by issuing a rapid succession of decrees that would gradually increase restrictions within hotspot areas (also called "red zones") expanding lockdown eventually to the whole country. While this approach might be considered prudent and wise in other circumstances, in the case of Covid-19 it failed because it lacked of consistency with the exponential spread fashion of the virus and because it limited itself to *follow* the virus rather than *preventing* it.

The strategy adopted by the Italian government has also been criticized for its lack of coherence and systematic nature, saying that it lacked of a set of coherent and coordinated actions taken simultaneously, differently with what has happened in other east Asian countries like South Korea.

V. The Case of South Korea

5.1 Background

South Korea, representing our second case study, comes from a very different background and boosts a series of previous experiences that inevitably influenced its way to manage the Covid-19 pandemic outbreak.

South Korea found itself to face some recent major crises such as the Sewol ferry disaster in 2014 and the MERS outbreak in 2015 that revealed some important shortcomings in South Korea's way to successfully apply safety regulations and managing complex crises, determining major human losses and widespread social chaos.

In particular, the outbreak of MERS in South Korea demonstrated a series of significant flaws in the country's preparedness for public health emergencies, ending with 186 positive cases, 38 casualties and 16,693 people being quarantined and isolated. This determined South Korea to become the most strongly hit country outside of the Middle East where the virus originated from (Ki, 2015).

Several studies pointed out that this chain of MERS infections could have been prevented and limited if better managed, as it was not attributable to biomedical factors but rather to late diagnosis, failure to quarantine positive cases, familial care-giving/visiting as well as poor crisis communication and inadequate management by hospitals and other sanitary authorities, raising several concerns about public health emergency preparedness in the country (Kim et al., 2017).

On these grounds, following a series of institutional and legal changes, the Ministry of the Interior and Safety (MOIS) - recreated in 2017 by the new administration - obtained new responsibilities which include checking on different emergency response capabilities overseeing the National Disaster and Safety Control Center for operational

responses, risk prevention, preparedness and recovery. More specifically, as for the public health sector, the Ministry of Health and Welfare (MOHW) started to oversee policy development and implementation for infectious diseases and emergency healthcare through the Korea Center for Disease Control (KCDC), which represents at the current date the main agency dealing with operations on infectious disease prevention and control, risk assessment, disease surveillance, risk communication and other risk-related issues.

For the reasons mentioned above, the South Korean government has seen itself significantly reinforced after the MERS outbreak (WHO, 2017) and was able to successfully take advantage of such changes, as well as its previous experience, in dealing with Covid-19 without implementing economically costly full scale lockdowns.

5.2 The South Korean Response: Praise

Juhwan et al. (2020) praises that despite South Korea ranked second after China in the two months immediately after the outbreak, it was able to dramatically lower the number of confirmed cases and decrease its casualty rate in a very short time, emerging as a virtuous model of strong national response. The authors highlight that in the period going from the first reported case (January 20, 2020) until February 18, 2020, only 31 new cases were registered, with a rate going up to a maximum daily count of 909 cases just 11 days after, on February 29. In that week, the South Korean government activated a high-level national response protocols that ensured a cross-society and systematic approach in response to the pandemic. Meticulous contract tracing and effective surveillance allowed medical authorities a rapid feedback of results based on epidemiological evidence that patient 31 was the locus of the epidemic. Strict surveillance combined with careful contract tracing also allowed to identify a high number of positive cases, localizing the epicenter of the pandemic in the area of Daegu.

As noticed by scholars and medias around the world, contact tracing, being at the center of a long discussion about its risks and benefits, has definitely been a key element able to detect on time potential carriers and isolate them. However, South Korea's key for success has not only been the passive implementation of contact tracing, but the actual ability to act upon this information by ensuring that the country would have enough testing kits, enough medical personnel able to carry out tests, personnel able to analyze samples in a short time, drive-through and other locations to perform tests, so that it would be possible to fully take advantage of the benefits of contact tracing (Ryan M., 2020).

For this reason, also Juhwan Oh et al. positively evaluate the capacity of the South Korean government to rapidly set up a large-scale diagnostic capacity across the country, using public-private partnership to quickly develop novel diagnostic tests.

Also Shokoohi et al. (2020) describe the South Korean response as "*one of the most successful models worldwide*" and attribute such substantial variation in epidemiological outcomes between the West and the East to the substantial differences in public health approaches between South Korea and other western countries such as Italy. In particular, community-centered strategies, rapid development of diagnostic capacities within communities, extensive testing and screening programs, as well as general efforts to isolate confirmed patients and prompt response in the early stages of the pandemic are considered factors of success.

5.3 The South Korean Response: Criticism

The method employed by the South Korean government has also been subject to skepticism especially for what concerns its reliance on contract tracing.

As mentioned above, one of the key strategies employed by the South Korean government to spot in advance potential virus carriers has been the extensive use of contact tracing, based on detection of people that have been in contact with infected individuals. Normally, South Korea boosts very stringent data privacy laws which do not allow authorities to collect, use and disclose citizens' personal information without the consent of the latter. However, as noted by Park S. et al, after the MERS outbreak in 2015, the Korean government has pushed for amendments to the Contagious Disease Prevention and Control Act, allowing authorities to skip certain provisions that would normally guarantee citizens' privacy protection and making it easier for them to access such information even without explicit consent. As a result, given the current amendments, relevant authorities are allowed to collect, profile and share information about those who are infected or suspected to be so. Collected information include personal identification information, records of relevant medical prescriptions, data about credit/debit/prepaid cards' transactions, GPS location, public transportation records and footage from CCTVs. Apart from collecting these information, competent authorities are also allowed to share them with other sub-divisions and agencies and inform the public about travel routes and means of transportation of these people by publishing such information on the internet.

Legendre F. et al. (2020) express their concern in relation to the cyber risks connected to the adoption of contract tracing practices, such as the potential abuse of people's private and personal data by companies and/or authorities for purposes that are different from the reason such data was initially collected, as well as the risk of malicious use by third people.

Also Martinez-Martin N. et al. (2020), express concern in relation to the fact that disseminating information about positive cases and publishing personal information such as travel routes and visited places presents possible risks such as social stigma and potential impact on employment. In this regard also Park S. et al (2020) noted how disclosing information about the location of infected individuals has led in a few times the general public in engaging in profiling and unveiling personal detail of the people involved. Some of the people identified were allegedly affected by unwanted privacy invasion and became subject to public disdain. Moreover, in several cases, shops, restaurants and other business visited by infected people experience an abrupt loss of business following the publication of their details.

The adoption of such measures has been widely accepted in South Korea because of the evident epidemiological benefits connected to its implementation and also allegedly excused by the fact that the country was dealing with a massive pandemic that would justify the action of collecting and sharing sensitive information about its citizens. Park S. et al., although admitting the epidemiologic benefits of such practice, criticize the choice of the Korean government to share such information with negative consequences for privacy and business, rather than simply keep that information private and use them confidentially to disinfect involved establishments.

Further concern is raised in relation to the possibility for other countries to follow this strategy and develop systems able to detect their citizens' movements with related privacy concerns. Despite the unquestionable benefits deriving from the combination of IT solutions with medical technologies, it is important to develop at the same time suitable policies to protect the privacy of the individuals and reduce adverse effects while not compromising the effectiveness of the measures being taken.

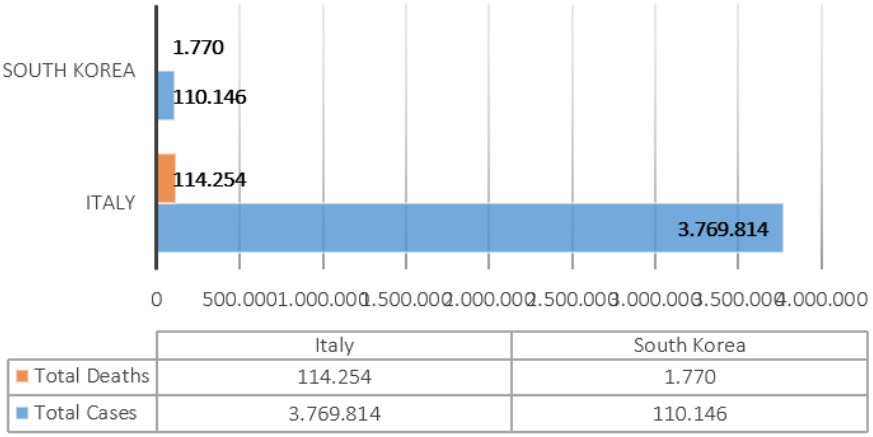
VI. Cross-country Comparison

6.1How effective have the two responses been so far?

As stated in both the framework used by the Italian and South Korean governments to deal with crisis and disaster management, as well as recognized by a wide variety of international frameworks, one of the most basic and fundamental responsibilities of governments is to (i) provide security and safety to their own citizens, as well as (ii) protecting business and be prepared to face and handle a wide variety of crises and global shocks.

In order to determine the effectiveness of the two countries' responses, I analyze below to what extent Italy and South Korea have been able in the same timeframe to protect the lives of their citizens by reducing the number of contagions and related deaths (human costs) as well as protect their businesses and mitigate the economic backlash caused by the pandemic (economic costs).

- **Human costs**: data retrieved from Worldometer show that Italy, since the beginning of the pandemic, had a toll of more than 3 million cases and 114 thousand deaths (Figure 3), corresponding to 62,422 cases per million people and 1,892 deaths per million people (data from April 12, 2020). On the other side, South Korea had by that time barely 110 thousand cases since the beginning of the pandemic and less than 2 thousand deaths in total, corresponding to 2,147 cases per million inhabitants and 35 deaths per million people (data from April 12, 2020).



	Italy	South Korea
Total Deaths	114.254	1.770
Total Cases	3.769.814	110.146

Figure 3 – Covid Cases and Casualties – Toll by Country. Source: Worldometer (Accessed on April 12, 2021)

- **Economic costs**: as shown in Figure 4, in economic terms, the long-lasting effects of repeated lockdowns have terribly hit the Italian economy, with an estimate real GDP growth in 2020 of -8.9%. On the other side, South Korea has been able to avoid strict lockdowns and only a few businesses such as schools and gyms have been periodically shut down, allowing its real GDP growth in 2020 to be -1.0% against a world average of -3.4% (OECD, 2020).

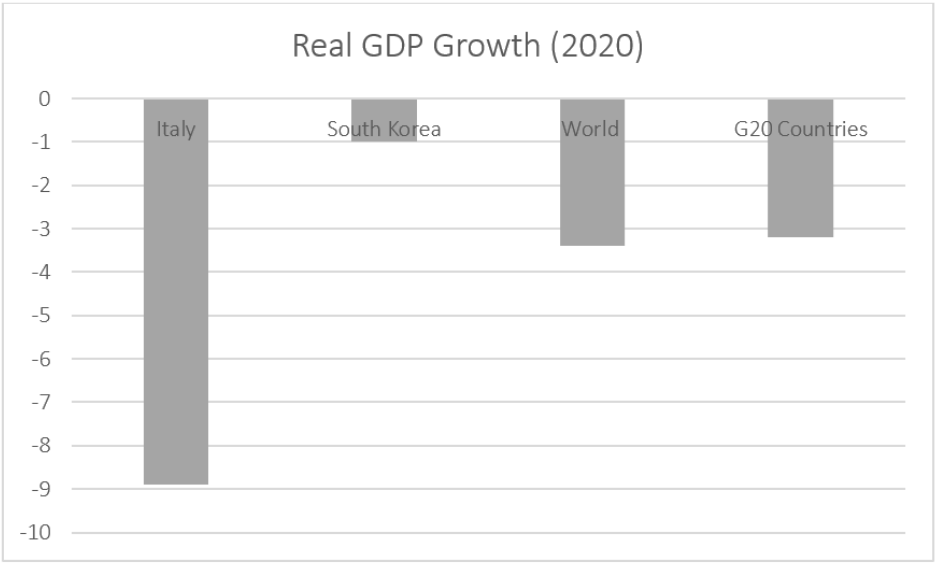


Figure 4 – Real GDP growth variation in Italy and South Korea (Source: OECD Economic Outlook, Interim Report, March 2021)

From the information reported above, there is little to contest about the fact that using the evaluative criteria proposed in the frameworks, South Korea seems to have done a way better job both in terms of (i) saving lives and (ii) preserving the country's economy and such result is valid not only when compared to Italy, but also when compared to any other European and western democratic country.

However, a question that still needs to be answered after seeing such results is whether the outcome is due to lockdown being a *per se* weak strategy or whether there are other factors that influenced such performance. This question makes sense if we think that a lockdown in its literal definition implies absence of social contact and hence lack of possibility for the virus to spread, while the strategy implemented by the South Korean government allows to a significantly higher extent social interaction and consequent chances for the virus to spread.

Moreover, while looking at the graphs in the next page, we see that the lockdown enforced in Italy to curb high peaks of contagion *did* contribute to a certain extent to lower the number of cases (Figure 5 and 6), but the proportion is small when compared to the South Korean one (Figure 7 and 8). Hence, the analysis' results seem to suggest that despite its partial effectiveness, lockdown implementation in Italy had a *lower efficiency and higher costs*, while the Korean response showed a *higher efficiency and lower costs*.

ITALY

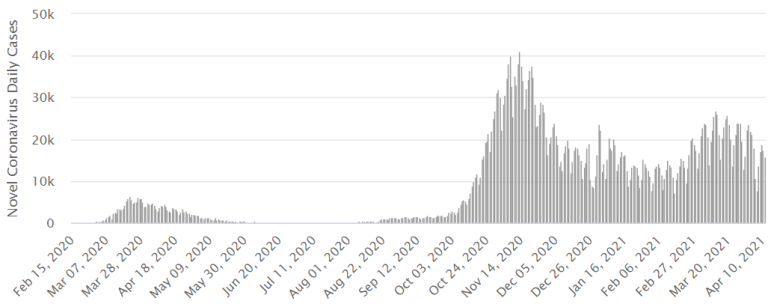


Figure 5 - Daily New Cases in ITALY. Source: Worldometer (Accessed on April 12, 2021)

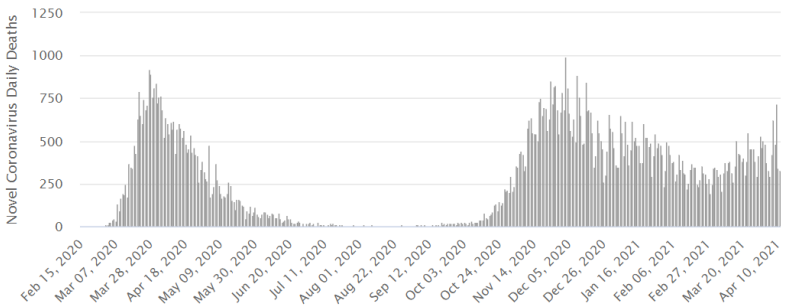


Figure 6 - Daily New Deaths in ITALY. Source: Worldometer (Accessed on April 12, 2021)

SOUTH KOREA

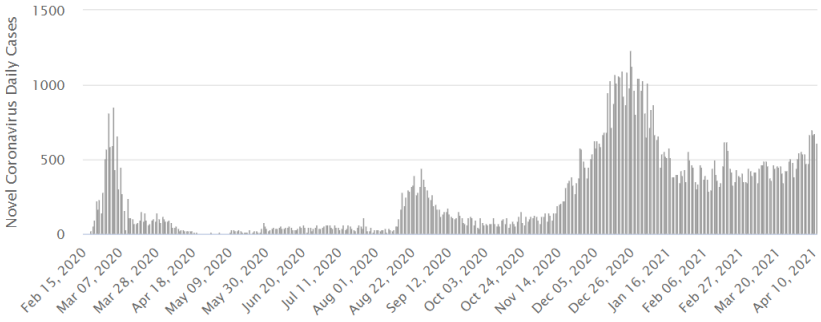


Figure 7 - Daily New Cases in SOUTH KOREA. Source: Worldometer (Accessed on April 12, 2021)

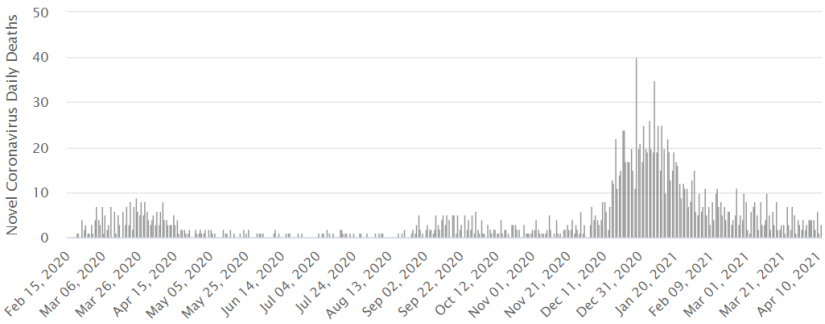


Figure 8 - Daily New Deaths in SOUTH KOREA. Source: Worldometer (Accessed on April 12, 2021)

6.2 What factors determined such outcome?

Given the results observed above, in this section the paper proceeds to analyze the underlying reasons behind the two countries' respective outcomes, in the attempt to understand what factors played a role and determined such different results.

6.2.1 Crisis Communication. The way the Italian government managed the pandemic crisis has been in different occasions criticized for its insufficient level of coordination between political and scientific levels, as well as between institutional claim-makers and the media, suggesting a particularly impactful mismanagement in the first phases of the outbreak. Reynolds (2020) identifies five main communication weaknesses that have negatively influenced the Italian government's performance in dealing with the crisis: firstly, mixed messages coming from different sources; secondly, delayed release of information; thirdly, paternalistic attitude; fourthly, inability to immediately react to rumors; lastly, political confusion. In times of crisis it is important to show a strong cohesion between the political and scientific sphere but such cohesion has not always been well delivered in Italy. For instance, a large number of different scientific voices has been providing confusing information throughout the whole communication process: one of the most prominent Italian physicians, Roberto Burioni, immediately warned that the outbreak could represent a serious threat. However, while him and other experts were giving indications on what measures should be taken to slow down the virus spread, other prominent institutes such as the Spallanzani Hospital and the Superior Institute of Infective Diseases minimized the risks saying that the fatality rate observed so far was linked to other underlying serious illness related to the age of people affected. This argument was initially backed up by the Italian Civil Protection that ensured that at least half of the positive cases did not need hospitalization. Other virologists were describing the virus as "*something slightly more serious than a normal*

flu" (Gismondo M. R., 2020) inflaming the debate around what measures to take on social media and national TV. The discussion on the topic extensively interested both traditional media like newspaper and social media. Governmental agencies and politicians would start using social media such as Facebook and Twitter as means of communication to update people on decisions' taken by the government. However, despite the extensive efforts made to keep under control the large flow of information, unconfirmed news and rumors started spreading on the web turning social media into an arena for political conflicts. In this regard, despite the Prime Minister Giuseppe Conte invited journalists to avoid further inflaming controversies about the measures promoted by the government, news about the reported disagreements between scientists and relevant decision-makers just contributed to increase the perception of chaos for what concerned the course of action. Therefore, the whole process of policy response in Italy has been surrounded by several conflicts that arose among decision makers at the national, regional and municipal levels, especially for what concerns restrictions on economic activities (Malandrino A., Demichelis E., 2020). On the top of that, the whole crisis management process has always been characterized by a large degree of freedom of interpretation of the existing legal frameworks, causing further confusion when dealing with guidelines about social distancing obligations. The description provided above shows a situation of general internal political chaos which further escalated in a series of miscommunications between i) the central government and regional authorities, ii) the government and scientists, iii) the government and the public. This resulted into problems of responsibility attribution and difficulties in effectively communicating what measures needed to be implemented, with negative consequences in both economic and human terms (Ruiu M. L., 2020).

What happened in Italy resembles to a certain extent what happened to the crisis communication in South Korea during the 2015 MERS management. However, learning from that experience, the South Korean government has been able to improve its

communication strategy, applying principles established by research in social sciences and recommended for pandemic response (Paek H. J., Hove T., 2020). For instance, South Korea tried to keep its communication pattern fast, accurate, credible, empathic, delivering information clearly and promoting action. For instance, official governmental sources would regularly disseminate text messages to keep people updated about movement paths of positive patients and to encourage citizens' active participation and commitment to preventive measures such as social distancing and mask usage. The government would also provide its citizens with two official daily briefings conducted by high officials from the KCDC to daily wrap up the situation. The briefing had the role to update people about progression of cases, infection control measures, findings on epidemiological research and to correct misinformation, decreasing at high levels the likeliness for fake news to spread. The government also used descriptive and injunctive messages to influence public health behaviors and compliance, for example by spreading messages that would make people not using face masks to feel pressured to use it by observing the behavior of other fellow citizens, or spreading posters and brief videos reminding people of their moral duty to show concern for the others and protect the vulnerable by wearing a mask (Van Bavel et al., 2020).

6.2.2 Compliance. What stated above also had a direct impact on citizens' compliance with containment measures. When it comes to lockdowns such as the one implemented by the Italian government, one of the most important factors for them to be effective is people's compliance. In fact, while the virus itself represents a biological concern, the pandemic's effects can be rather catalogued as a social problem (Campbell J.W., Kasdan D. O., 2020). As such, while governance, preparedness and management quality are important in providing theoretical guidelines, practical compliance with public

health directives and mass behavioral change are highly dependent on people's voluntary adherence to such norms. In other words, since lockdowns are based on behavioral measures (non-pharmaceutical) which involve forced isolation, movement restriction and active government surveillance, they should rely on citizens' active cooperation with authorities in order for them to be effective. Compliance is influenced by a wide variety of factors which include people's awareness of implemented provisions, severity of penalties in case of lack of compliance, psychological, physical and economic costs and least but not last, support and trust towards the authorities enacting such restrictions (Briscese et al., 2020). Different studies suggest that one factor influencing people's compliance is given by the (mis)match between announced duration of restrictions and people's expectations. As for Italy, the Italian government initially defined about one month for restrictions related to school closure and movement limitations, while business and other commercial activities should have been initially closed for two weeks. However, due to the continuous surge of cases, the government could do nothing else but extend such measures, generating a strong debate within political circles on whether the extension should be in place for an additional specified period of time or whether it should be implemented indefinitely until necessary (Galluzzo, M. 2020). Generally speaking, limits to personal mobility protracted for an indefinite amount of time increase the perceived severity of the reason justifying those limits and hence have the potential to increase compliance. On the other side, isolation provisions with an explicit end date may convey the idea that the emergency is only temporary and hence not particularly severe, potentially decreasing compliance. However, in a democratic country like Italy, only the second case could be welcomed as acceptable, while any possibility to indefinitely extend restrictions for an indefinite amount of time have generated a very heated debate within political and social circles questioning whether such management was in line with

democratic principles, with some people accusing the government of having initiated a "dittatura sanitaria" ("health dictatorship" in Italian) (Rauseo D., Bolzani A., 2021).

Moreover, the continuous debate inflaming national TV and social media, as well as the contrasting opinions coming from different sides of the scientific community, made a lot of citizens' question the validity of the measures adopted, and along with that, the extent to which they were expected to comply with them. Extending repeatedly restrictive measures after creating the expectation that they would be limited in time reduced people's acceptance, trust in the authority, and in the end it reduced the overall compliance, determining a progressively high number of people to refuse to comply (movement in Lombardy as continued at about 40% of normal levels despite restrictions) and generating protests especially from the side of those Italian business owners that were forced to shut down their commercial activities for a prolonged amount of time without being able to promptly receive financial support nor seeing in the short term the possibility to open again.

The issue of compliance in South Korea is very different as the latter did not implement any large-scale lockdown that would force people home, reducing active compliance to a correct usage of masks and other tools of individual protection. Technology, through the country's fast Wi-Fi and other tracing apps, would take care of the rest. In this regard, it is also important to notice that wearing masks in daily life is a practice that Koreans are already accustomed to because of air pollution, while in Italy such measure has been introduced only after the beginning of the pandemic, generating an inflamed debate about masks' real effectiveness against the virus. Moreover, recent studies showed that Korean people's compliance with Covid-19 codes of conduct has generally been high: in different occasions, surveys about Korean people's compliance with Covid-19 measures showed very high levels of compliance for what concerns

hygiene, mask usage, participation/cancellation of social events (Lee M., You M., 2020). Rapid industrialization and technological development in South Korea also shaped modern Korean mindset and culture in expecting a continuous speediness to adaptation. With high-speed internet, widespread smartphones and communication apps, Koreans are constantly updated about everything, being able to gather information and share it with family and peers. This spirit of cooperation, which will also be investigated better in the next sections, determined a strong collective effort in preventing a further virus spread, such as overworking at mask factories, testing laboratories or volunteering of the medical personnel in Daegu in the first phases of the outbreak.

6.2.3 Trust in government. The issues highlighted above also had a great impact on the way citizens would perceive the government performance and trust its management. Needless to say that during a pandemic crisis, uncertainty is an ever-present element that governments need to deal with while strengthening citizens' trust in both science and government. This is even more true considering that in sudden cases like the Covid-19 outbreak a proper law able to provide fixed and recognized guidelines does not exist (Wockelberg, 2011). In the case of the Italian management, a high level of uncertainty has been visible in the allocation of power between relevant actors within the Italian multilevel governance system and in the administration of justice, especially in regards to the adoption of measures to respond to the crisis. Such uncertainty has been reflected in the way the crisis was managed by the central government and other relevant stakeholders involved in the relevant administrative systems, determining a transfer of such uncertainty to the citizens' level. Several studies show that Italian citizens expressed high levels of trust in the government and relevant institutions in the first phase of the pandemic (Falcone et al, 2020); however, such trust has gone through a progressive

process of erosion due to the general state of crisis miscommunication about health and science matters (Lovari A., 2020). Moreover, the progressive politicization of the discourse surrounding the measures to be implemented to contain the pandemic without causing too much harm to the economy have led to generate high confusion and polarization among different governance perspectives that could not help but spread a sense of uncertainty within civil society. The debate surrounding the pandemic has also led to a massive circulation of incorrect or totally fake information about the virus, generating what has been defined by the WHO as an "*infodemic*" (2020). In Italy, despite the intervention of the Ministry of Health trying to mitigate this flow of information using its official social network pages to increase its visibility and promote reliability of its official communication channels, further efforts involving different institutions and digital platforms still seemed necessary to reduce the impact of misinformation, as *the issue of trust in government seems itself connected to crisis miscommunication rather than to lack of trust itself.*

Just as Italy, also South Korea was reported to have its fair portion of political conflict generating from different parties using the crisis to seek approval and political gains. Moreover, a recent OECD study on trust in public institutions in South Korea found that the mismanagement of previous crisis in South Korea has determined generally low levels of trust in the government, as it happened in the case of MERS when the government, and in particular the Ministry of Health (MoH), was heavily criticized for not disclosing important information to hospitals and citizens (Reuters, 2015). For example, the MoH was criticized for not revealing the names of hospitals receiving MERS patients to avoid giving unnecessary anxiety to health care users and further criticism was directed to a number of medical institutions after 35 infected patients in Seoul were discharged without knowing that they were infected, leaving them free to move throughout the city further spreading the virus. Learning from this experience and

taking advantage of technology, the South Korean government has turned good crisis communication and transparency in one of its key tools of crisis management, determining citizens' trust in central and local government to substantially increase during the first half of 2020 (Klingbiel S., Torres L., 2020). Data below also show that the majority of South Koreans do not only believe that the government managed the pandemic well, but that South Korea also ranks above average compared to other high-income countries (Figure 9).

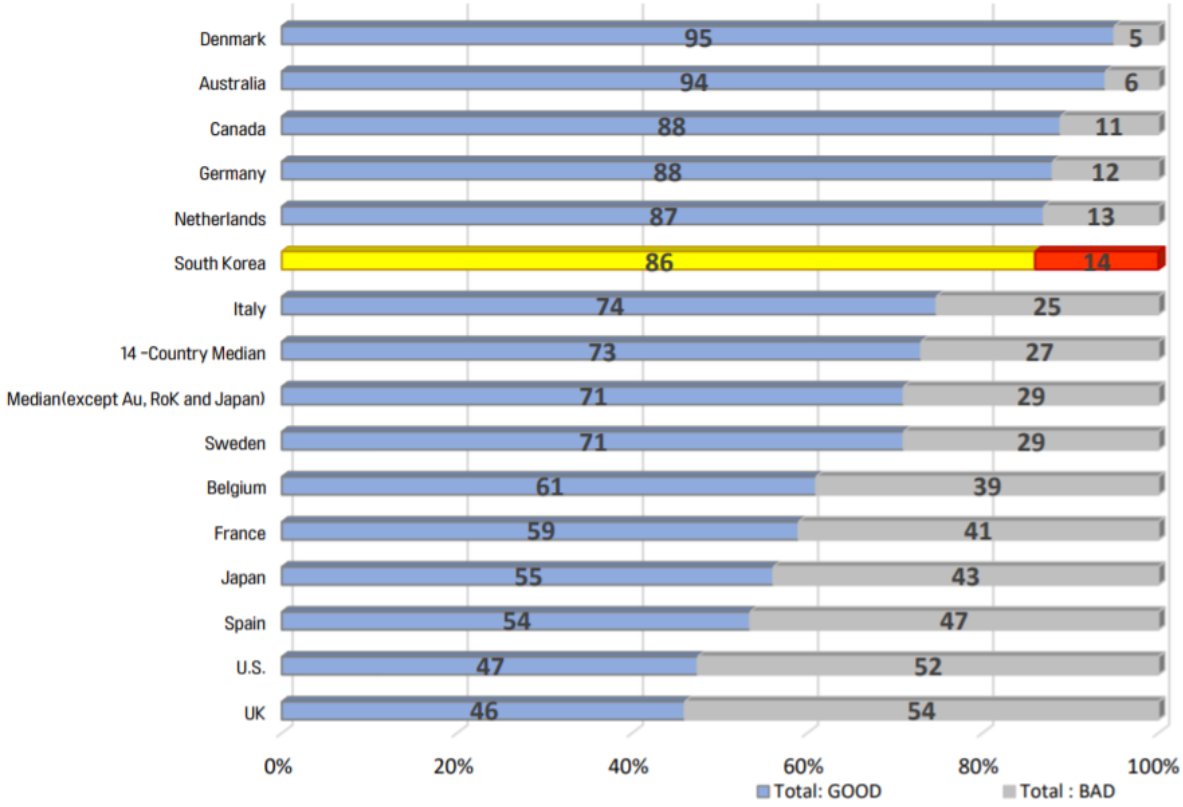


Figure 9 - Citizens' perception of their country's management of Covid-19 (PewResearch, 2020)

The transparent management of the South Korean government during this pandemic has with no doubts contributed to restore higher levels of trust from the citizens' side. The combination of ICT solutions to promote accessible public information and disclosure of real-time information to alert citizens on the possible risks, along with the extensive effort of the KCDC and other medical authorities, are all factors that have

contributed to a transparent management able to proactively involve the public sector and different layers of civil society in standing together against the virus.

6.2.4 Cultural factors. Another factor that might have played a more or less significant role in determining such outcome is culture, defined here as "*shared values and shared meaning, shaping individuals' basic psychological processes and informing their understanding of the world*" (Triandis, 2001). As culture provides people with mental frameworks to perceive reality, we cannot ignore it as a factor influencing people's way to react and respond to the different situations they happen to face.

In the later stages of a pandemic, economic factors and technologies play an increasingly important role and personal attitude and government responses are likely to evolve to adapt to the environment; however, as noted by Jiang S. et al (2020), in the early stages of a pandemic when still little knowledge about the virus is available, early discovery, early quarantine and strict social distance are key factors to cut off the transmission chain and cultural differences potentially play a crucial role in allowing it. In this regard there are generally two main dimensions that describe cultural variations: individualism and collectivism. These two cultural frameworks shape individuals' perception of reality prioritizing respectively the primary role of the individual over the collective or the collective over the individual (Triandis, 1995). In other words, "*individualism and collectivism reflect the extent to which cultural groups value independence vs interdependence*" (Markus and Kitayama, 1991). For the reason mentioned above, these two social and cultural dimensions play a significant role in the context of a pandemic because the tendency of a certain community to belong to either one or the other group will likely determine the way its people respond to tradeoffs and adjustments imposed by restrictions and new rules. Not only citizens, but also governments: as the government action must reflect the collective will, it is likely that the

measures implemented by different governments will vary across countries based on citizens' collective beliefs. Hence, this research supports the idea that *the difference in governmental responses and people's reaction to it is also a result of cultural differences*.

Figure 10 shows a world map in different colors based on the country's prevailing culture according to the *Hofsted Index*. The legend in the right part of the figure indicates the individualism index's value, with a higher index representing stronger levels of individualism (green) and a lower index indicating stronger levels of collectivism (red).

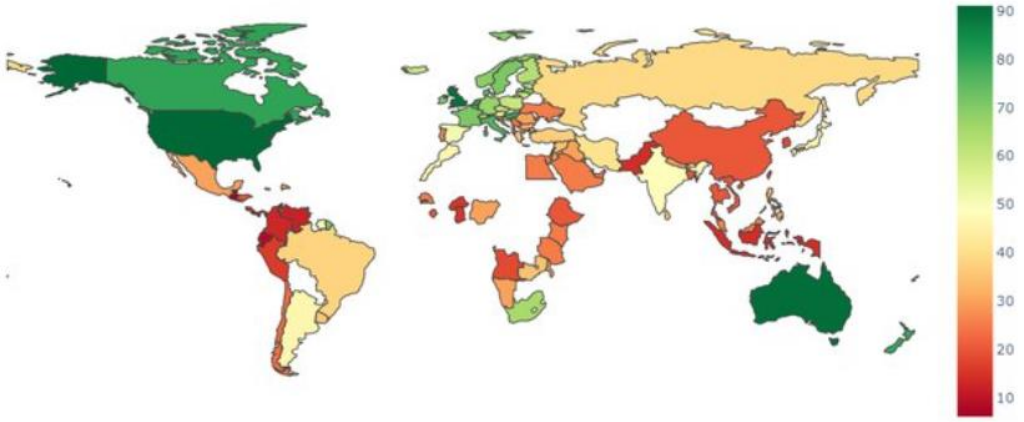


Figure 10 - Individualism vs. Collectivism world map (Hofsted, 2001)

Therefore, a country like Italy, which is defined as "relatively individualistic", will be more likely to value personal freedom and its citizens will expect people to only look after themselves, with little reliance on authorities. As an individualistic country, Italian people will also be less likely to collectively put effort to stay home and avoid social gatherings, with a higher hesitance to accept and obey to quarantine and massive lockdowns. For instance, as Civitarese (2020) reported, Italy registered high levels of movement in the first half of 2020 despite the Italian government's adoption of policies encouraging its citizens to stay home. As mentioned already in the section about compliance, we remember that especially in democratic countries, social distancing measures cannot be forcefully imposed on the population by coercion and for this reason,

their effectiveness of such measures is strongly dependent on people's compliance (Allcott et al., 2020; Briscese et al., 2020; Perc et al., 2020).

Some studies have also hypothesized that other social habits typical of the Italian culture such as high number of intergenerational interactions, co-residence and commuting patterns could help explaining the reason behind such high case fatality rate (CFR) in Italy. This hypothesis however has been later disproved and no scientific proof seems to be available since Southern Italian regions are more socially active with a higher rate of interpersonal contacts among people and yet have always presented a lower amount of cases compared to the northern regions where this practice is lower or absent (Giangreco G., 2020).

On the other side, South Korean socio-cultural context is a bit different. The country's neo-Confucian traditions, its history characterized by turbulent social and geopolitical events, as well as its most recent economic development are all factors that contributed to shape a highly collectivistic society where its people have the strong cultural tendency to respect authorities, stick to norms and seek social harmony in virtue of its neo-Confucian heritage (Im, 2014, Campbell, and Cha, 2013). The Korean tendency of undertaking personal sacrifice for the collective good, a tendency that is even stronger in times of crisis, adds up to all the factors listed above. Hence, while it is true that in South Korea most measures have been activated and implemented through technology, it is also true that Korean citizens have been diligently adopting social distancing measures more than many people in the west, actively taking precautions against the virus even without government's recommendation in the attempt to reduce personal risks (Lee & You, 2020). Moreover, they have also shown in different occasions support towards the idea of monitoring quarantined people through tracking bracelets (The Korea Times, 2020). The deep cultural difference existing between our two case studies can be better

visualized in Figure 11 which provides an overview of the cross-cultural comparison of Italy (in blue) and South Korea (in purple).

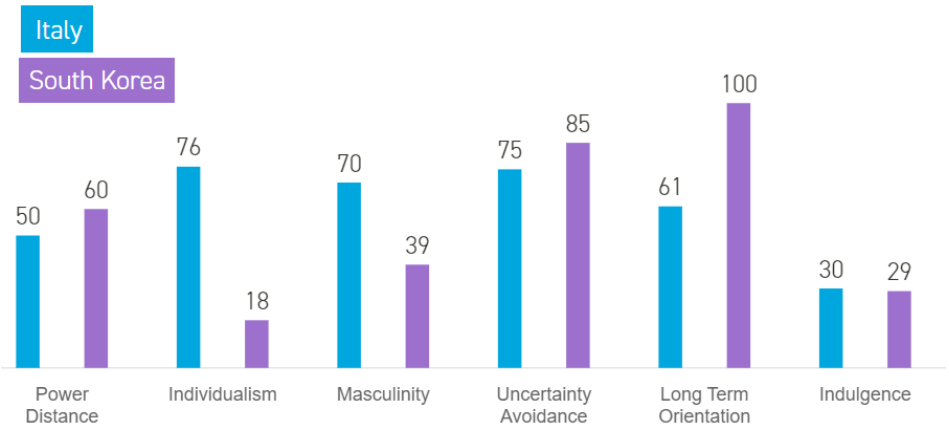


Figure 11 – Cross-cultural comparison between Italy and South Korea. (Source: Hofstede Insights)

The hypothesis that different cultural orientations are likely to play a role in determining compliance during pandemics seems to find confirmation in different studies, such as the one carried out by Jiang S. et al (2020), which proved that there is a positive correlation between individualism index and the early-stage transmission outcome of Covid-19 across countries as individualistic countries tend to have more confirmed cases per million capita (Figure 12).

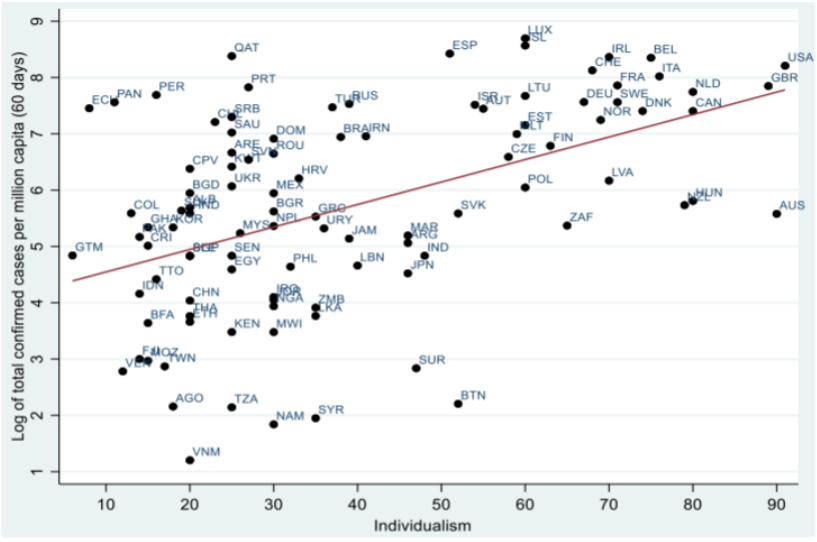


Figure 12 - Correlation between individualism and total cases per million capita.

6.2.5 Demographic factors. After the cross-cultural analysis, it is also the case to spend some words about the demographic pattern of the two countries that worked as a "facilitator" in determining their respective results. In fact, the demographic characteristics of the Italian population are slightly different from other countries. Italy boosts one of the best healthcare systems in the world (4^{th} in the world according to Bloomberg, 2020) and it is the country with the second highest life expectancy at birth (83.6 years) among European countries, as well as the one with the eight highest in the world (OECD, 2017; World Bank, 2018). This makes of Italy the country with the oldest population in Europe (median age 46.3) and second oldest in the world (ISTAT, 2019; Eurostat, 2019). It was estimated that in 2019, roughly 23% of the Italian population was aged 65 years or older. This age factor, in light of the fact that Covid-19 is more lethal in older patients, might provide a strong explanation in explaining Italy's high case fatality rate when compared to other countries. This is even more likely when considering that Italy's longevity is associated with high morbidity rates, with 40% of the total population having a chaotic condition and nearly 21% being affected by multi-chronic conditions. Moreover, the way Covid-19 related deaths are identified and counted in Italy might be another possible factor explaining its high case fatality rate: since a clear criterion for the definition of Covid-19 related deaths has not been available since the beginning of the epidemic outbreak, Italy has been defining as Covid-19-related deaths all those casualties occurring in patients who died while testing positive to Covid-19, independently from preexisting concomitant diseases that might have caused their death. Since age and morbidity factors mentioned above are factors associated with Covid-19 mortality, this method of calculation of Covid-19 deaths may have resulted in an overestimation of the case fatality rate. This hypothesis seems to find further confirmation if we think that especially in the first phases of the epidemic the country has experienced outbreak of

infection developing in nursing homes spreading the virus to a large amount of older people and workers (Trabucchi M., De Leo D., 2020).

Figure 13 shows the pattern of Covid-19-related deaths in Italy, showing how such rate increases exponentially for patients of 70 years old or more which traditionally represent the most vulnerable group.

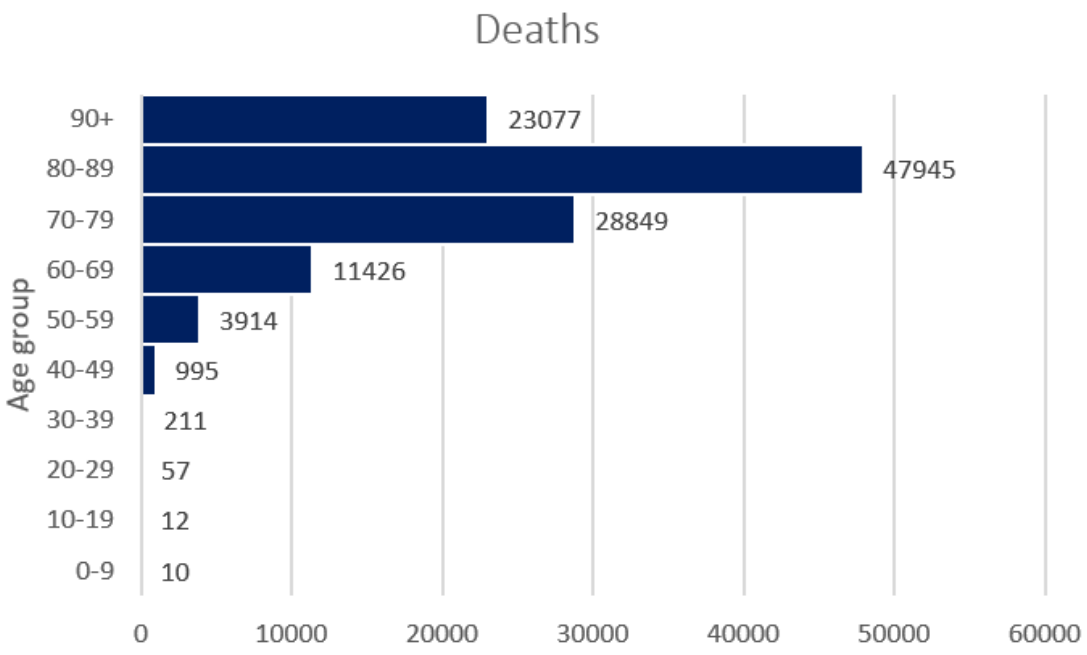
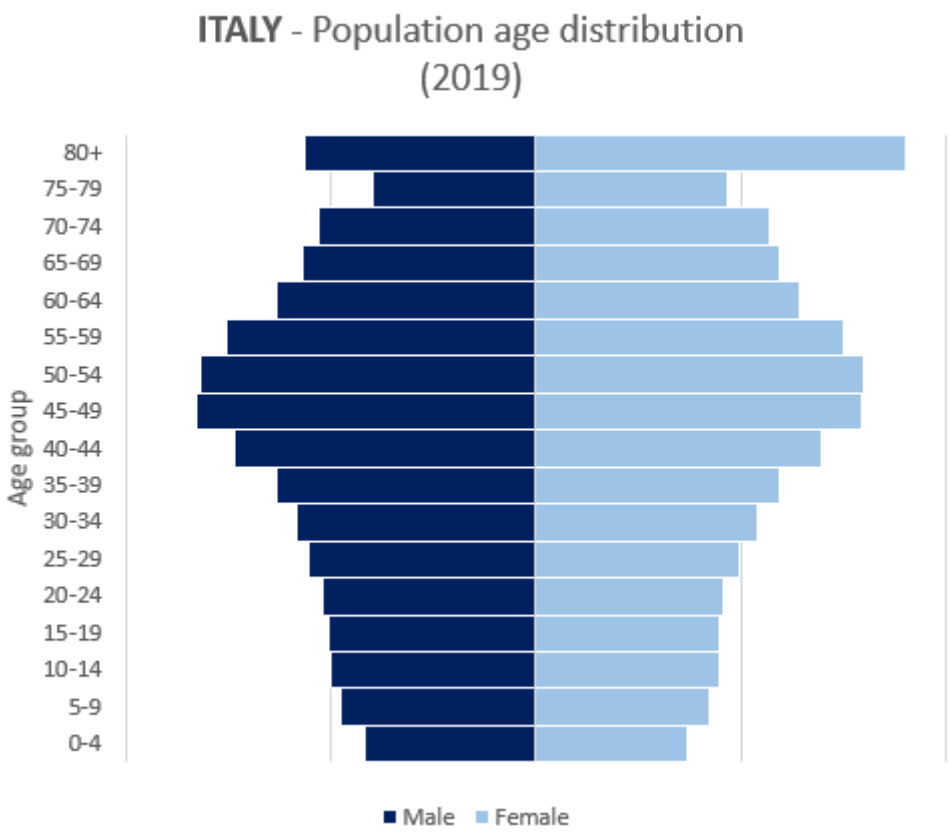


Figure 13 - Covid-19 deaths in Italy as of April 21, 2021 (source: Statista)

As for South Korea, the demographic pattern of its population is a bit different. Looking at Figure 14 we can see how the age distribution in South Korea significantly differs with the Italian one, lacking of a big portion of 80+ years old people that represented the biggest part of fatalities in Italy.



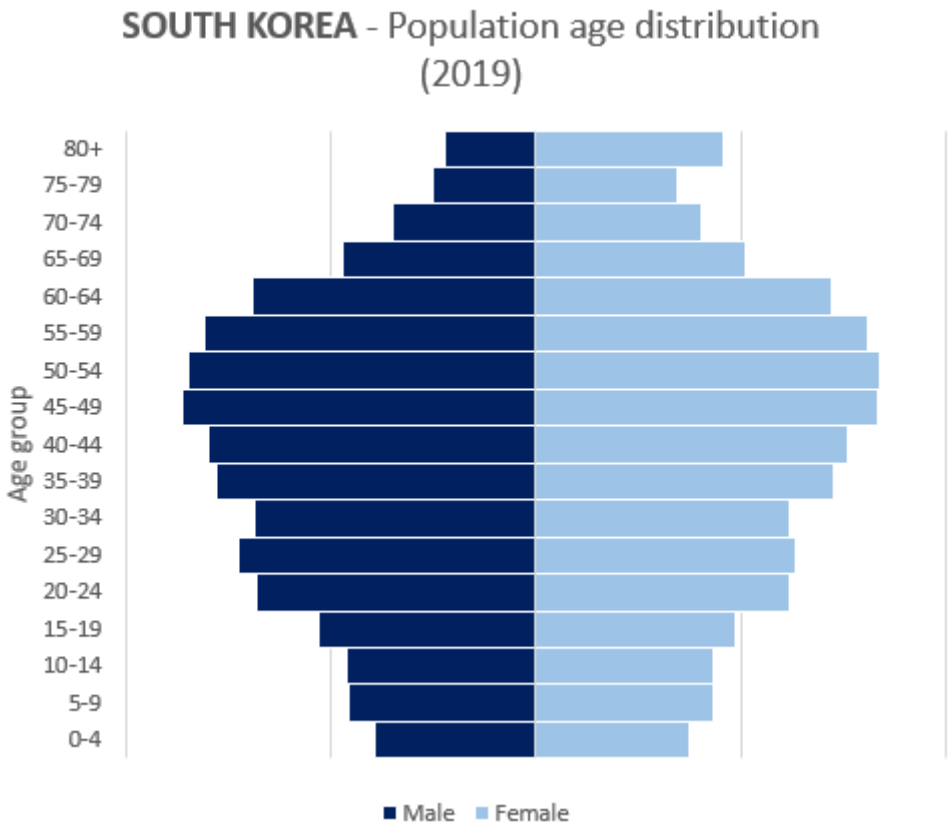


Figure 14 - Relative age structure in % of the studied population (2019); Source: World Bank Development Indicators

Not only the age distribution of the studied population is different, but looking at Figure 15 we notice how also the distribution of positive cases at the very early stages of the pandemic substantially differs: while Italy has a massive concentration of cases in the range of 80+ years old patients, South Korea registers its peak at younger ages (Tesárková K. H., 2020).

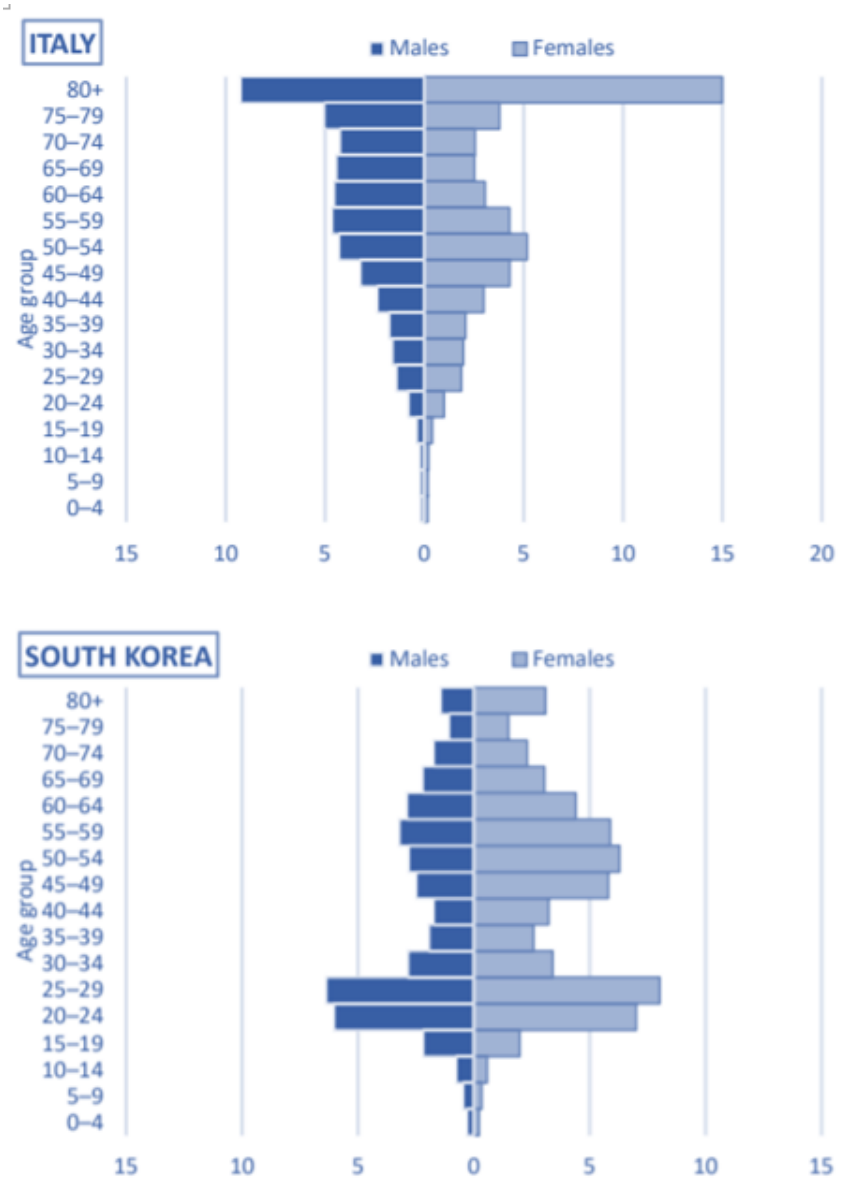


Figure 15 - Relative age structure of the population testing positive for Covid-19 in Italy and South Korea. (Source: Riffe, Acosta et al., April 2020)

This gap, apart from the substantial differences in the demographic patterns of the two countries, might also be explained by the fact that Italy, in the first phases of the pandemic, has prioritized people with strong symptoms to get tested, and since older people were more likely to develop serious symptoms to the virus, it is also likely that their age group would be more likely to get tested and represent the highest percentage of confirmed positive cases (this point will be analyzed more in details in the section about the health care system). Moreover, as visible in Figure 16, even in a more recent phase of the pandemic (June 2021), despite the peak of cases having shifted to the 50-59 age range in both Italy and South Korea, Italy keeps registering higher peaks at higher ages, with a ratio that is almost double as the South Korean one for what concerns over 80s.

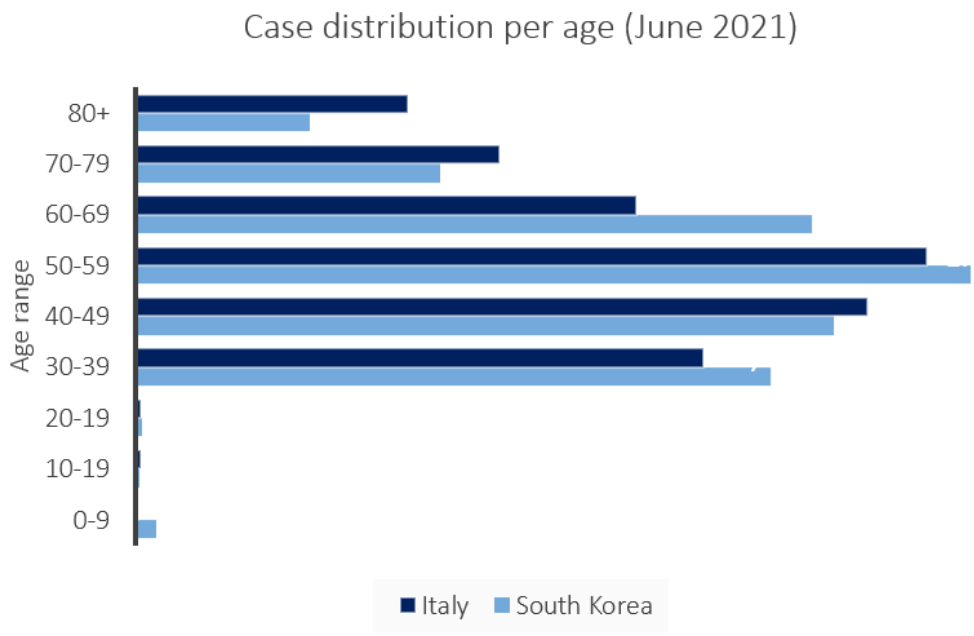


Figure 16 - Case distribution per age (%); (estimation of June 2021). Source: Statista

The fact that Italy has seen a constant concentration of cases at higher age ranges (for which health risks are higher) cannot be ignored as a factor helping explaining the significant gap in the mortality rates of the two countries.

6.2.6 Material capacity and information asymmetry. Given previous cases of infectious diseases outbreaks and other disasters in its past history, South Korea has recently taken new measures to improve its crisis preparedness and responsiveness. During the management of the Covid-19 crisis, the South Korean government has been repeatedly praised for the speed of its coordination with the biotech private sector and other medical supplies firms to produce testing kits, using rapid regulatory reviews to speed up the production and allowing a large portion of citizens to get tested. As a result, despite its small size, South Korea started ranking third for number of testing kit firms, coming after China and the United States only (Song, White, Yoon, 2020). The quick and large availability of test, combined with the high efficiency of its bureaucracy, made it possible for South Korea to implement an extensive testing approach that allowed it to test both symptomatic and potentially asymptomatic cases and contain the spread (Lee, 2020). Moreover, with technology being one of the driving factors of the country's economic development, South Korea took advantage of its nature of "information intensive" country (Ko, Leitner, Kim & Jeong, 2017) using high-speed Wi-Fi and "dataveillance" (Kasdan & Campbell, 2020) to detect in advance potential virus carriers and isolate them. South Korea's reliance on technology is also reflected in the country's *Infectious Disease Control and Prevention Act*: updated after the country's turbulent experience with the outbreak of MERS infections in 2015, the act states that contact tracing on large-scale and reporting of positive cases through depersonalized movements of patients should be performed in case of infectious diseases' outbreaks. This part seems to provide an answer to that part of literature that criticized the South Korean approach for its alleged invasion of privacy due to contact tracing: we need to remember that not only South Korea has one of the strictest data privacy laws in the world (Ko et al, 2017), but also that a large part of its citizens have shown willingness to undergo such "dataveillance" in exchange for transparency and a better crisis management (M.S. Kim,

2020), trusting the fact that such data collection will be eventually used to improve people's lives in accordance with open data policies. Hence, we can say that decades of technological innovation have eventually contributed in enabling South Korea's quick and agile response to the pandemic.

The international experience of not only South Korea, but many other east Asian countries like Singapore and Hong Kong, suggest now that I-tech solutions such as contact tracing, apps and other technological devices play a key role in preventing the virus' spread. However, the possibility to follow a model that would check on citizens' credit cards, CCTVs and GPS tracking data and make them public has been drastically rejected in Italy. In fact, also the Italian government has tried to develop a contact tracing app, called *Immuni*, whose download and use would be on a fully voluntary bases, in respect with the country's constitutional rights. However, the low amount of people downloading and actively using the app has determined its failure and has indirectly contributed to prolong the condition of long-term forced lockdowns that, paradoxically, felt in many ways even more authoritarian. Therefore, due to its inability to implement technological solutions to prevent the virus spread, the Italian government has rather focused its efforts on implementing mitigation strategies targeted at reducing the pressure on its health care system dealing with limited ICU capacity and equipment.

One thing we can state for sure it that both the South Korean and Italian experience proved that a widespread and massive testing is a key factor to reduce the spread, and I will provide an example below to further support this hypothesis. Before moving onto explaining the case, we remind that despite Italy's health care system is provided as a national and public service, the local management is in the hands of single regions, determining more or less significant differences across areas. The most evident case is the one of Lombardy and Veneto regions, two geographically close regions that

represented the epicenter in the first phases of the outbreak. For instance, Lombardy region decided to prioritize testing of people showing symptoms for Covid-19 while Veneto's health authorities decided to for a more extensive screening of the whole population, independently from patients showing symptoms or not, in an approach of mass testing that resembled the South Korean one. Such diverting strategies determined two very different patterns of infection in the two regions: on one side Lombardy, where only symptomatic patients were tested using PCR tests, saw the number of cases increase exponentially, with a high number of patients developing severe respiratory diseases that would require intensive care. On the other side, in the small town of Vò Euganeo (one of the first epicenters of the outbreak in the Veneto region) extensive testing and early isolation of asymptomatic carriers resulted in the reduction of infections from 2.6% to 0.3% and a progressive but quick disappearance of the virus. Moreover, a study carried on by Dr. Andrea Crisanti (2020) showed how 43.2% of Vò's residents were positive to the virus but asymptomatic, proving the importance of mass testing and early isolation thanks to which the Veneto region, applying the same protocol to other cities within the same region, managed to keep a lethality rate of 4%, a ratio which was much lower than the one found in the neighboring Lombardy region (Romagnani et al., 2020). This is nothing else but a *further prove that even within the same country, differences in testing patterns and miscalculation by health authorities determined a very big impact on the contagions pattern*. A more visual representation can be observed in Figure 17, which uses data retrieved from the Italian Civil Protection website to show the relationship between Covid-19 testing success (calculated as the ratio of positive tests results and total tests performed) and mortality rate (ratio of casualties per positive cases) in 14 Italian regions that experienced at least 10 Covid-19-related casualties as of March 22, 2020.

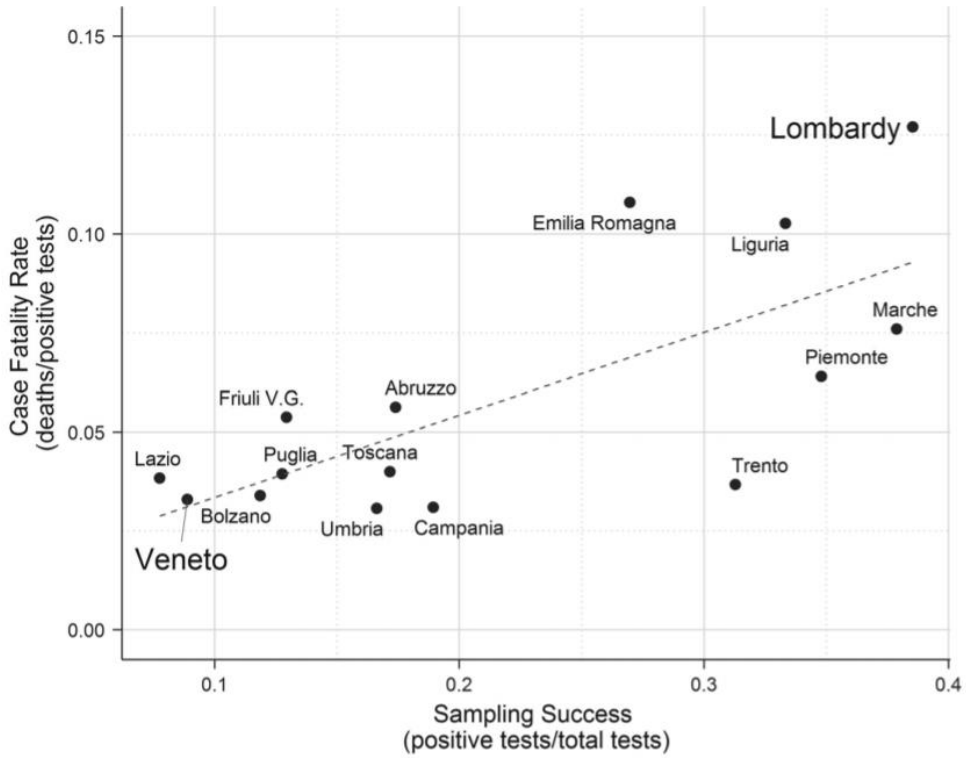


Figure 17 - Relationship between Covid-19 testing success and case fatality rate in Italy (source: Protezione Civile)

The case of Lombardy and Veneto in Italy can be seen as a sort of "case study within the case study" providing a further proof to the hypothesis that mass testing and early isolation are key factors able to produce not only significant differences among countries but even within the same country. Similarly, the difference between Italy and South Korea in terms of testing success and mortality rate can be visualized in Figure 18, showing that just like in the case of Lombardy and Veneto, the relationship between Covid-19 testing success and casualty rate produces very significant differences across countries as well.

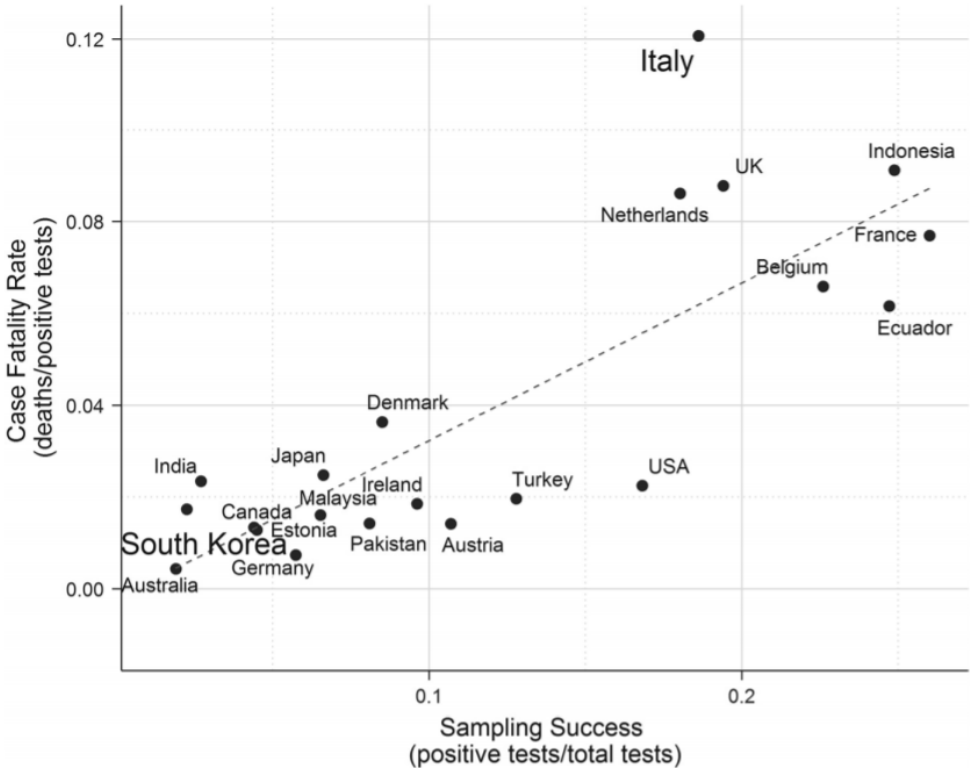


Figure 18 - Relationship between Covid-19 testing success and case fatality rate among countries (Source: OurWorldInData; WHO)

6.2.7 Healthcare system. Another factor to keep in consideration to explain different variations in country-specific contagion patterns and case fatality rate is related to the two countries' healthcare system. Despite the Italian health care system to be generally considered as one of the best in the world being public, easily accessible and providing high level performances, Italian hospitals present a high bed occupancy rate, equaling to 3.2 hospital beds per 1,000 persons, standing below the European Union average (5.0/1,000). The sudden outbreak of cases with particular effects on the elder part of its population, determined a high percent of them to develop respiratory failure and require mechanical ventilation. The sudden unavailability of sufficient ICU beds and mechanical ventilators put an unprecedented pressure on the Italian healthcare system, forcing the medical personnel to make quick and dramatic decisions on who to prioritize for the admission to ICU. As a result, factors such as chronological age and symptoms

severity were set as criteria to decide who would be admitted to ICU and who would not, determining many geriatric patients to have limited access to ICU and mechanical ventilation and being forced to get cures at home where they could easily infect others. In fact, it has been reported that especially in the first phases of the pandemic a large number of elders died at home because of the impossibility to be admitted to ICU. Another thing to keep into account is that despite Italy having a strong structure of home-care service and long-term care for elders, such system presents significant differences across regions as regions control their own healthcare system despite it referring eventually to the main national one. Lombardy for example, one of the wealthiest regions with a robust hospital network and yet one of the most hit by the outbreak, has been often accused of having been too slow and late in recognizing Covid-19 cases within its elder population, determining a delayed access to care and increasing the likeliness of casualties (Volpato S. et al, 2020). Moreover, despite the initial attempt to test both symptomatic and asymptomatic contacts of infected people, following the pressure on the national health care system and the WHO recommendations, the Italian Ministry of Health decided on February 25th to prioritize testing those suspected cases who would show more evident and severe clinical symptoms and were thus were likely to require further hospitalization. After this issuance, testing access was restricted to those who would show mild or no symptoms. This system not only resulted in a higher proportion of positive results, but also determined asymptomatic people, including caregivers and medical personnel, to remain unaware of their positivity, becoming new carriers able to infect other people. This change in testing pattern is also likely to play a significant role in explaining why the casualty rate in Italy was so significantly higher than other countries: as people presenting mild or no clinical symptoms were no longer tested, a large number of people with low fatality rate were excluded from the counting, determining the counting to be mostly made out of people with serious symptoms and with a higher likeliness to die

(Onder G. et al, 2020). From this analysis it seems evident that despite its usual performance, the Italian national health care system was not sufficiently prepared to respond to such an unanticipated and quick escalation of cases, especially due to its inability to increment its efficiency and maintain its usual level of performance under stressful conditions. As the sudden shortage of ICU beds and ventilators has been pointed out as one of the main reasons of mortality in Italy, we can conclude by saying what while the Italian health care system boost a high level of performance for what concerns prevention and treatment of all those pathologies normally common in western countries such as cancer, cardiovascular diseases and so on, it is not properly prepared and equipped to respond to infectious disease outbreaks as much as South Korea.

South Korea in fact adopted a totally different strategy, widely and massively testing for Covid-19 people independently from them showing symptoms or not, and often encouraging also people who did not have any confirmed contact with positive cases to get tested for free. This led to spot a high number of people who had mild or no symptoms, determining a lower case-fatality rate to be included in the counting compared to Italy. Moreover, early identification would also contribute to early treatment and isolation, blocking in advance the contagion chain. It has been in fact reported that differently from Italy where people with mild or no symptoms would be cured at home, South Korea converted across the country several existing facilities into community treatment centers (CTC) to isolate all those people who tested positive to Covid-19 while showing mild or no symptoms. In these facilities, people would report self-measured vital signs and symptoms twice a day through an app usage with medical staff reviewing such sign remotely and providing video consultations to the patients. Even apart from this, the National Health Insurance System (NHIS) of South Korea grants a wide access to healthcare to its whole population, with its medical utilization being one of the highest

among OECD countries (OECD, 2019). South Korea also boosts 12.3 hospital beds per 1,000 people, a number that is almost four times higher the Italian one.

Despite the high level of stress on hospitals in the first phases of the pandemic, especially in the area of Daegu where most of the cases were reported, South Korea managed to bring the situation under control opening up more and more facilities to provide quarantine, regular examination and monitoring to positive but asymptomatic cases, blocking the contagion chain at a faster speed than what Italy did (Kang E. et al, 2020).

VII. Conclusion

To wrap up, we saw through this analysis to what extent the two governments have been able to guarantee the safety of their countries' human, social and economic fabric, on the bases of the criteria expressed in the two country's crisis management legal frameworks, as well as other international guidelines on crisis management.

With a ratio of 2,147 cases per million inhabitants and 35 deaths per million people, we see that South Korea has shown higher levels of effectiveness and efficiency in dealing with the pandemic outbreak, while Italy scored 62,422 cases per million people and 1,892 deaths per million people, almost thirty and fifty times higher. Also when looking at the crisis management in economic terms, there seems to be little to discuss about the fact that South Korea, with a GDP growth in 2020 of -1.0%, performed better than Italy which experienced instead a drop down to -8.9%, bringing it even below the OECD average of -3.4%.

Thanks to its previous experience, since the very first phases of the outbreak South Korea has become a model of successful crisis management, able to effectively coordinate its public and private capacities to improve its preparedness and response, as well as to implement technological solutions to effectively deliver crisis communication while protecting democratic rights. On the economic side, South Korea has also proved to be better able to limit the negative consequences of the pandemic than many other western powers, gaining at the same time global visibility as a new model to look at when it comes to pandemic and crisis management.

Italy, along with many other European countries, not only has found itself unprepared in the first phases of the pandemic, experiencing initial masks and testing kits shortages, but also explicitly refused the adoption of more invasive I-tech solutions able to monitor citizens' more closely due to ethical concerns. As a result, while the implementation of

the first lockdown brought a drastic reduction of cases by the end of June, the newly relaxed attitude of Italy and other European countries, along with the rushed decision to reopen their borders to revive the tourism industry during summer, determined a new surge of cases by the end of September 2020 that only ended up straining again the little economic gains obtained during the summer season. This optimistic attitude, accompanied by the lifting of restrictions such as not testing people returning home from holidays abroad or not enforcing quarantine upon return, can be seen as one of the main reasons at the heart of the second wave that brought to a new unseen rise of cases not only in Italy but more or less all over the world. Moreover, as also noted by Bruno Ciancio (2020), head of disease surveillance at the European Centre for Disease Prevention and Control, Italy and the other European countries that struggled with lockdowns during the first wave were very hesitant to reintroduce the same measures after summer due to concerns related to the economic and social costs. This determined the new lockdowns to be much softer that the previous ones, determining new waves of hospitalizations and deaths.

Despite this analysis focuses on the crisis management of the two countries at the local level, the implications that such results may have for international cooperation are significant: South Korea's diplomatic ability to keep its borders more or less open during a pandemic, unlikely many other countries that decided to implement an *expensive* but *ineffective* border shut down, as well as the ability to reduce human damages and economic consequences are just some of the examples of the priceless knowledge that a country like South Korea can share with other governments and world leaders, especially in a period characterized by dangerous environmental changes that will progressively increase the likeliness for humanity to have to deal with new pandemics in the future.

Despite the country's pandemic model was developed to fight internal health crisis, its development cooperation approach has been able to quickly adjust to the pandemic

context with MOFA and KOICA developing concepts and operational activities to support partner countries around the world with activities that go from providing diagnostic kits to sharing South Korea's experience with the pandemic management.

Moreover, despite the infinite facets of factors that might have played a more or less significant role in determining Italy and South Korea's abilities to deal with the pandemic, at the end of this analysis we still have a clearer and broader picture of some of the factors that have determined the different outcomes. We may be able to summarize the two approaches quoting descriptions provided by the two countries' respective governments: while on one side Moon's approach has been that "*overreaction is better than late reaction*" (Seoul Metropolitan Government, 2020), Italy has openly adopted a more moderate approach that followed what has been defined by the former Prime Minister Giuseppe Conte as the "*principle of proportionality*" (Rizzuti S., 2020; Vecchio C., 2020) which was a initially thought as a way to guarantee full respect of constitutional rights, but that has eventually resulted in *following* the virus rather than *anticipating* it.

Urgent public action is fundamental in response to crisis and, as such, decision makers at all levels have to be able to make "*decisive calls about courses of actions during difficult conditions of value complexity, short response time, threat and uncertainty*" (Nohstedt, 2011:199). Despite the discourse over the management of Covid-19 has often been turned into a political arena to promote one or another form of government, we can confidently state at the end of this research that while now we have a clearer idea of what characteristics crisis management needs to have in order to provide an effective response, it is difficult to say whether such strategies are better performed under democratic or authoritarian regimes. On one side, South Korea, which classifies as a democratic country, has been often been criticized for its lax privacy rules that would enable its government to check on citizens' credit cards and GPS movements to prevent further contagions by many western countries that would perceive such practices as Orwellian. On the other

side, it has been thanks to this approach the country has been able to preserve its social and economic life, avoiding long-term forced lockdowns experienced in Italy and many other western countries that rather showed a way more draconian shape.

With the introduction of new vaccines and the beginning of vaccine campaigns in most of the strongly hit countries, the hope for the return to a pre-pandemic life shines always stronger, but until then, we need to remember that the Covid-19 pandemic proved us that what happens during a pandemic is both a public health and social crisis, with communication being one of the key factors in keeping it under control. In fact, we have seen that the extent to which citizens adopt preventive actions is strongly influenced by the effective and consistent communicative abilities of governments and health authorities. Consequently, South Korea was able to influence its citizens to comply with anti-Covid-19 measures because of its consistency, transparent communication of scientifically proven facts and information through trusted sources. This thesis has proven the importance of theoretically informed and science-based measures, supported by ICTs and well-designed crisis communication strategies. These will most certainly persist on being fundamental components of the fight, locally and globally, to overcome Covid-19 and other future pandemics yet to come.

VIII. References

Bauch, C. T. (October 22, 2020). Estimating the COVID-19 R number: a bargain with the devil? *The Lancet*. Volume 21, issue 2, p. 151-153. DOI:https://doi.org/10.1016/S1473-3099(20)30840-9. Retrieved from https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30840-9/fulltext

Berardi, C., Antonini, M., Genie, M. G., Cotugno, G., Lanteri, A., Melia, A., Paolucci, F. (2020). The Covid-19 pandemic in Italy: Policy and technology impact on health and non-health outcomes. *Elsevier*. https://doi.org/10.1016/j.hlpt.2020.08.019

Bertacche, M. (2020, August 23). Italy Lockdown Success Challenged by New Europe Virus Surge. *Bloomberg*. Retrieved from https://www.bloomberg.com/news/articles/2020-08-23/italy-s-lockdown-success-challenged-by-new-european-virus-surge

Boccia, S., Ricciardi, W., Ioannidis, J.P.A. et. al. (2020). What Other Countries Can Learn From Italy During the COVID-19 Pandemic. Retrieved from https://jamanetwork.com/journals/jamainternalmedicine/article-abstract/2764369

Bontempi, E. (2020, November 19). The Europe second wave of Covid-19 infection and the Italy “strange” situation. *Elsevier*. Retrieved from https://doi.org/10.1016/j.envres.2020.110476

Briscese, G., Lacetera, N., Macis, M., Tonin, M. (2020). Compliance with Covid-19 Social-Distancing Measurea in Italy: The Role of Expectations and Duration.

CESifo Working Paper No. 8182. Retrieved from https://www.cesifo.org/DocDL/cesifo1_wp8182.pdf

Chinazzi, M. et. al. (2020). The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak, Science 368, 395-400. Retrieved from https://science.sciencemag.org/content/368/6489/395/tab-pdf

Chirico, F., Sacco, A. (2021). Coronavirus disease 2019: the second wave in Italy. *Journal of Health Research*. Vol. 35 No. 4, 2021 pp. 359-363. DOI 10.1108/JHR-10-2020-0514. Retrieved from https://www.emerald.com/insight/2586-940X.htm

Cohen, J., Kupderschmidt, K. (2020). Countries test tactics in 'war' against COVID-19. AAAS, VOL. 367 ISSUE 6484

Conte, G. [GiuseppeConteIT]. (2020, September 25). *L'Organizzazione Mondiale della Sanità rende omaggio all'Italia*. Twitter. Retrieved from https://twitter.com/GiuseppeConteIT/status/1309417283945627649

Coronavirus: Europe looking to extend cirus lockdowns. (2020, March 19). *BBC News*. https://www.bbc.com/news/world-europe-51959243

Covid, da Torino a Napoli: le proteste dei lavoratori del mondo dello spettacolo in Italia. (2020, October 30). *SkyTG24*. https://tg24.sky.it/cronaca/2020/10/30/covid-italia-proteste-spettacolo

Covid, proteste per chiedere le riaperture in tutta Italia: scontri con la polizia. (2021, April 6). *SkyTG24*. https://tg24.sky.it/cronaca/2021/04/06/proteste-oggi-covid#02

Emanuel, E. J., Persad G., Upshur, R., Thome, B. et. al. (2020). Fair Allocation of Scarce Medical Resources in the Time of COVID-19. *The New England*

Journal of Medicine. Retrieved from https://www.nejm.org/doi/full/10.1056/NEJMsb2005114

European Commission. (2017). Humanitarian Aid & Civil Protection Vademecum: Italy – Disaster management structure. Retrieved from https://ec.europa.eu/echo/files/civil_protection/vademecum/it/2-it-1.html

Eurostat. (2019). Population structure and ageing 2019. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php/Population_structure_and_ageing#The_share_of_elderly_people_continues_to_increase

France's coronavirus death toll tops 1,000, lockdown likely to be extended. (2020, March 23). *France 24*. Retrieved from https://www.france24.com/en/20200324-france-s-scientific-council-says-coronaviruslockdown-should-last-at-least-six-weeks

Galluzzo, M. (2020, March 20). Coronavirus, Conte: 'Blocco totale e chiusura delle scuole saranno prorogati. Tutela per le aziende strategiche'. *Il Corriere della Sera*. Retrieved from https://www.corriere.it/politica/20_marzo_19/coronavirus-conte-blocco-totale-chiusura-scuole-sarannoprorogati-tutela-le-aziende-strategiche-33d5ea34-695a-11ea-913c-55c2df06d574.shtml

GBD 2017 Italy Collaborators. (2019). Italy's health performance, 1990–2017: findings from the Global Burden of Disease Study 2017. *Lancet Public Health*. DOI:https://doi.org/10.1016/S2468-2667(19)30189-6. Retrieved from https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(19)30189-6/fulltext

Ghebereyesus, T.A. [DrTedros]. (2020, March 8). The government & the people of IT are taking bold, courageous steps aimed at slowing the spread of the #coronavirus & protecting their country & world. They are making genuine sacrifices. @WHO stands in solidarity with ɪᴛ & is here to continue supporting you. Twitter. https://twitter.com/drtedros/status/1236605595282812928

Giangreco, G. (2020). Case fatality rate analysis of Italian COVID-19 outbreak. DOI: 10.1002/jmv.25894. Retrieved from https://onlinelibrary.wiley.com/doi/epdf/10.1002/jmv.25894

Giovanetti, M.; Benvenuto, D.; Angeletti, S.; Ciccozzi, M. (2020). The first two cases of 2019-nCoV in Italy: Where they come from? J. Med. Virol. 2020, 92, 518–521.

Giuffrida, A., Tondo, L. (2020, March 8). "Leaked Coronavirus plan to quarantine 16km sparks chaos in Italy". *The Guardian*. Retrieved from https://www.theguardian.com/world/2020/mar/08/leaked-coronavirus-plan-to-quarantine-16m-sparks-chaos-in-italy

Governo Italiano. (2021). COVID-19 – Domande frequenti sulle misure adottate dal Governo. *Governo.it*. Retrieved from http://www.governo.it/it/articolo/domande-frequenti-sulle-misure-adottate-dal-governo/15638?gclid=Cj0KCQjwl9GCBhDvARIsAFunhsk3jVdrFCY2lt6p4YO11PX8dcUWATvcXyNs11Jk7dvMsi5VfpI-91EaAoiuEALw_wcB#zone

Heather, A., Walter-McCabe. (2020). Coronavirus Pandemic Calls for an Immediate Social Work Response. *Social Work in Public Health*. 35:3, 6972,

DOI:10.1080/19371918.2020.1751533. Retrieved from https://doi.org/10.1080/19371918.2020.1751533

Hessler, P. (2020, March 23). Life on Lockdown in China. *The New Yorker*. Retrieved from https://www.newyorker.com/magazine/2020/03/30/life-on-lockdown-in-china

Holder, J., Stevis-Grindeff, M., McCan, A. (2020, December 4). Europe's Deadly Second Wave: How Did it Happen again? *The New York Times*. Retrieved from https://www.nytimes.com/interactive/2020/12/04/world/europe/europe-covid-deaths.html

How Italy Turned Around Its Coronavirus Calamity. (2020, July 31). *The New York Times*. Retrieved from https://www.nytimes.com/2020/07/31/world/europe/italy-coronavirus-reopening.html

Institute for Public Relations et. al Crisis management and Communications. (2007). https://instituteforpr.org/crisis-management-and-communications/

ISTAT. (2019). Annuario statistico italiano 2019. Rome. https://www.istat.it/it/archivio/236772

Italy's harsh lessons help keep second wave at bay. (2020). *The Financial Times*. Retrieved from https://www.ft.com/content/6831be3e-2711-4ea3-8f62-daa82cf9ca11

Jin, K. X. (2020, March 2019). Keeping people safe and informed about the coronavirus. *Facebook Newsroom website*. Accessed March 19, 2020. https://about.fb.com/news/2020/03/coronavirus

Josephson, A., Lambe E. (2020, March 11). Brand communications in time of crisis. Twitter Blog website. Accessed March 16, 2020. https://blog.twitter.com/en_us/topics/company/2020/Brand-communications-in-time-of-crisis.html

Kang, E., Lee, S. Y., Jung, H., Kim, M. S., Cho, B., Kim, Y. S. (2020). Operating Protocols of a Community Treatment Center for Isolation of Patients with Coronavirus Disease, South Korea. *Emerging Infectious Diseases*. Vol. 26, No. 10. DOI: https://doi.org/10.3201/eid2610.201460

Ki, M. (2015). "2015 MERS outbreak in Korea: hospital-to-hospital transmission.". *Epidemiology and health*. Vol. 37, p. e2015033, http://dx.doi.org/10.4178/epih/e2015033

Kim, K. et al. (2017). Middle East respiratory syndrome coronavirus (MERS-CoV) outbreak in South Korea, 2015: epidemiology, characteristics and public health implications. *Journal of Hospital Infection*, Vol. 95/2, pp. 207-213, http://dx.doi.org/10.1016/J.JHIN.2016.10.008

Lake, M.A. et. al. (2020). What we know so far: COVID-19 current clinical knowledge and research. *Clinical Medicine.* Vol.20, No 2: 124-7. Retrieved at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7081812/pdf/clinmed-20-2-124.pdf

Lazzerini, M. et. al. (2020). COVID-19 in Italy: momentous decisions and many uncertainties. *The Lancet*. https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(20)30110-8/fulltext

Lee, M, You, M. (2020). Psychological and behavioral responses in South Korea during the early stages of Coronavirus Disease 2019 (COVID-19). *Int J Environ Res Public Health*. 2020;17:1–14.

Legendre, F., Humbert, M., Mermoud, A., Lenders, V. (2020). Contact Tracing. An Overview of Technologies and Cyber Risks. Retrieved from https://arxiv.org/ftp/arxiv/papers/2007/2007.02806.pdf

Melandri, F. (2020, September 28). Italy's government showed the world how to take responsibility in a pandemic. *The Guardian*. Retrieved from https://www.theguardian.com/commentisfree/2020/sep/28/italy-covid-19-response-sweden-coronavirus

Miller, L., Lu, W. (2018, 19 September). These are the economies with the Most (and Least) Efficient Health Care. *Bloomberg*. Retrieved from https://www.bloombergquint.com/global-economics/u-s-near-bottom-of-health-index-hong-kong-and-singapore-at-top

Ministry of Health and Welfare of South Korea. (2016). Framework Act on the Management of Disasters and Safety. Retrieved from https://elaw.klri.re.kr/eng_mobile/viewer.do?hseq=37382&type=new&key=

Nadeau, B. L., Borghese, L. (2020, August 10). Europe's biggest countries are seeing Covid-19 surges – but not this one. *CNN*. https://edition.cnn.com/2020/08/09/europe/italy-coronavirus-return-normal-intl/index.html

OECD. (2012). Strategic Crisis Management Framework.

OECD. (2018). Assessing Global Progress in the Governance of Critical Risks, OECD Reviews of Risk Management Policies. *OECD Publishing*. Retrieved from https://dx.doi.org/10.1787/9789264309272-en

OECD. (2019). Korea's preparedness for public health emergencies. OECD Reviews of Public Health: Korea: A Healthier Tomorrow. *OECD iLibrary*. https://www.oecd-ilibrary.org/sites/7ba9cad3-en/index.html?itemId=/content/component/7ba9cad3-en

OECD. (2019). OECD Health Statistics 2019. https://www.oecd.org/health/health-data.htm

OECD/European observatory of health systems and policies. (2017). Italy: Country Health Profile. State of the Health in the EU, 2017.

OECD/KDI. (2018). Understanding the Drivers of Trust in Government Institutions in Korea. *OECD Publishing*. Retrieved from https://dx.doi.org/10.1787/9789264308992-en

Oh, J., Lee, J.K., Schwarz, D., Ratcliffe, H. L., Markuns J. F., Hirschhorn L.R. (2020). National Response to COVID-19 in the Republic of Korea and Lessons Learned for Other Countries. *Health Systems & Reform*. 6:1, e1753464, DOI:10.1080/23288604.2020.1753464

Onder, G., Rezza, G., Brusaferro, S. (2020). Case-Fatality Rate and Characteristics of Patients Dying in Relation to Covid-19 in Italy. *American Medical Association*. doi:10.1001/jama.2020.4683. Retrieved from https://jamanetwork.com/ on 05/01/2021

Osservatorio Nazionale Sulla Salute Nelle Regioni Italiane. (2019). Patologie croniche in costante aumento in Italia con incremento della spesa sanitaria. La

cronicità non colpisce tutti allo stesso modo: si confermano le diseguaglianze di genere, territoriali, culturali e socio economiche.

Paek, H.J., Hove, T. (2021, 18 January). Information Communication Technologies (ICTs), Crisis Communication Principles and the COVID-19 Response in South Korea. *Journal of Creative Communications*. https://doi.org/10.1177/0973258620981170

Paterlini, M. et. al. (2020). On the front lines of coronavirus: the Italian response to COVID-19, BMJ 2020;368. Retrieved from https://www.bmj.com/content/bmj/368/bmj.m1065.full.pdf

Pisano, G.P., Sadun, R., Zanini, M. (2020). Lessons from Italy's Response to Coronavirus. Retrieved from https://fondazionecerm.it/wp-content/uploads/2020/04/HBR-Lessons-from-Italy%E2%80%99s-Response-to-Coronavirus.pdf

Presidency of the Council of Ministers, Civil Protection Department. (2020). Overview of the Evolution of the Covid19 Emergency and Legal Acts Taken. Retrieved from: http://www.protezionecivile.gov.it/documents/20182/1227694/Summary+of+measures+taken+against+the+spread+of+C-19/c16459ad-4e52-4e90-90f3-c6a2b30c17eb (accessed on 27 April 2020).

Protezione Civile. (2018). Decreto Legislativo 2 Gennaio 2018, n.1. Codice della protezione civile. *Gazzetta Ufficiale della Repubblica Italiana*. https://www.gazzettaufficiale.it/eli/id/2018/1/22/18G00011/sg

Rauseo, D., Bolzani, A. (2021, March 4). La 'dittatura sanitaria', la salute di tutti e le libertà individuali". *Rete UNO*. Retrieved from https://www.rsi.ch/rete-

uno/programmi/intrattenimento/uno-oggi/La-%E2%80%9Cdittatura-sanitaria%E2%80%9D-la-salute-di-tutti-e-le-libert%C3%A0-individuali-13805578.html

Reuters. (2015). South Korea replaces health minister criticized over MERS outbreak. Retrieved from https://www.reuters.com/article/us-health-mers-southkorea-idUSKCN0Q90JJ20150804

Rezoagli, E, Magliocca, A, Bellani, G, Pesenti, A, Grasselli, G. (2021). Development of a Critical Care Response - Experiences from Italy during the Covid19 Pandemic. ANESTHESIOLOGY CLINICS. doi: Retrieved from https://doi.org/10.1016/j.anclin.2021.02.003

Rizzuti, S. (2020). Coronavirus, Conte: "Attenzione altissima, rinunciamo ad alcune libertà per tutelare la salute. *Fanpage. Retrieved from* https://www.fanpage.it/politica/coronavirus-conte-attenzione-altissima-rinunciamo-ad-alcune-liberta-per-tutelare-la-salute/

Robbin Marks, J. (2020). Different Approaches, Different Results: How Countries Are Tackling Coronavirus. *The Medialine*. Retrieved from https://themedialine.org/by-region/countries-take-different-approaches-to-countering-coronavirus/

Romagnani, P. et al. (2020). The Covid-19 infection: lessons from the Italian experience. *Journal of Public Health Policy*. 41:238–244. Retrieved from https://doi.org/10.1057/s41271-020-00229-y

Ruiu, M. L. (2020, 6 May). Mismanagement of Covid-19: lessons learned from Italy. *Journal of Risk Research*. 23:7-8, 1007-1020, DOI: 10.1080/13669877.2020.1758755

Ryan, M. (2020). In defence of digital contact-tracing: human rights, South Korea and Covid-19. *International Journal of Pervasive Computing and Communications.* Vol. 16 No. 4, 2020, pp.383-407. DOI 10.1108/IJPCC-07-2020-0081. https://www.emerald.com/insight/content/doi/10.1108/IJPCC-07-2020-0081/full/pdf

Sendai Framework for Disaster Risk Reduction 2015-2030. (2015).

Shokoohi, M., Osooli, M., Stranges S. (2020). COVID-19 pandemic: what can the West learn from the East? *Int J Health Policy Manag*. 2020;9(10):436–438. doi:10.34172/ijhpm.2020.85

Shrimp vendor at Wuhan market may be coronavirus 'patient zero'. (2020, March 27). *New York Post*. Retrieved from https://nypost.com/2020/03/27/shrimp-vendor-at-wuhan-market-may-be-coronavirus-patient-zero/

Sjödin, H., Wilder-Smith, A., Osman, S., Farooq, Z., Rocklöv, J. et. al. (2020). Only strict quarantine measures can curb the coronavirus disease (COVID-19) outbreak in Italy. Retrieved from https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.13.2000280

Sominskya, L., Walkera, D.W., Spencera, S.J., et. al. (2020). One size does not fit all – Patterns of vulnerability and resilience in the COVID-19 pandemic and why heterogeneity of disease matters, https://doi.org/10.1016/j.bbi.

Tesárková, K. H. (2020). Demographic aspects of the Covid-19 pandemic in Italy, Spain, Germany and South Korea. *Geografie*. 125/2. Retrieved from https://www.researchgate.net/profile/Klara-Hulikova-Tesarkova/publication/342073579_Demographic_aspects_of_the_COVID-

19_pandemic_in_Italy_Spain_Germany_and_South_Korea/links/5f09ff4fa6fdcc4ca45e5a6c/Demographic-aspects-of-the-COVID-19-pandemic-in-Italy-Spain-Germany-and-South-Korea.pdf

The American University of Rome. (2020). The Financial Times praises Italy's response to the Covid-19 pandemic. Retrieved from https://aur.edu/news/financial-times-praises-italys-response-covid-19-pandemic

The Hope Institute. (2020). Launching the Civil Society Counter-measure Committee to the COVID-19 Societal and Economic Crisis. https://www.makehope.org/.

Trabucchi, M., De Leo, D. (2020). Nursing homes or besieged castles: Covid-19 in northern Italy. *The Lancet*. Vol 7. https://www.thelancet.com/action/showPdf?pii=S2215-0366%2820%2930149-8

Triandis, H. C. (1995). Individualism and Collectivism. Boulder, CO: Westview Press.

Triandis, H. C. (2001). Individualism−collectivism and personality. J. Pers. 69, 907–924. doi: 10.1111/1467-6494.696169

Vecchio, C. (2020, October 4). Conte e i contagi: ‘Attenzione altissima ma interverremo con proporzionalità’. *Repubblica*. Retrieved from https://rep.repubblica.it/pwa/generale/2020/10/04/news/coronavirus_conte-269481681/?ref=RHPPTP-BH-I269167158-C12-P4-S1.12-T1

Volpato, S., Landi F., Antonelli Incalzi R. (2020). A Frail Health Care System for an Old Population: Lesson from the Covid-19 Outbreak in Italy. J Gerontol A

Biol Sci Med Sci, 2020, Vol. 75, No. 9, e126–e127. doi:10.1093/gerona/glaa087

World Bank. (2018). World Development Indicators. Life expectancy at birth, total (years).

World Health Organization. (2005). International Health Regulations.

World Health Organization. (2017). Joint External Evaluation of IHR Core Capacities REPUBLIC OF KOREA, https://apps.who.int/iris/bitstream/handle/10665/259943/WHO-WHE-CPI-2017.65-eng.pdf?sequence=1

World Health Organization. (2020). Novel coronavirus (2019-nCoV): situation report-13. Retrieved from https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200202-sitrep13-ncov-v3.pdf

World Health Organization. (September 25, 2020). Sharing Covid-19 experience: the Italian Response. YouTube. 4:20. https://youtu.be/oDeSCVGi-pM

Yang, S., Kubota, Y. (2020). 2020: Spreading Coronavirus Prompts Lockdown of More Chinese Cities. *The Wall Street Journal*. Retrieved from https://www.wsj.com/articles/spreading-coronavirus-forceslockdown-of-another-chinese-city-11579774393

Zanin, G. M., Gentile E., Parisi A., Spasiano D. (2020). Preliminary Evaluation of the Public Risk Perception Related to the Covid-19 Health Emergency in Italy. *International Journal of Environmental Research and Public Health*. 17, 3024; doi:10.3390/ijerph17093024.