

Government Responses to COVID-19: A Comparative Analysis of Visegrad Countries

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ABSTRACT

Purpose: The purpose of this study is to compare government responses and the challenges faced by public authorities in the Visegrad/V4 countries during the Covid-19 outbreak.

Design/Methodology/Approach: The study is based on a comparative analysis method. In this study, we analysed government responses through literature review and data obtained from various databases. The data used in the study were collected from ourworldindata.org, OECD, WHO, World Bank, Eurostat databases, CoronaNET dataset and Covid-19 Government Response Tracker.

Findings: The Visegrad countries did well during the initial phase of the Covid-19 pandemic. Compared to many other countries in Europe or in the world, they had less cases and lower death rates. What made them successful was timely and decisive reactions and harsh measures to curb Covid-19. They all implemented Non-Pharmaceutical Interventions strictly. Mandatory mask wearing, trust in the government and people's tendency to obey the rules all helped V4 members in the fight against Covid-19. However, in two countries (Poland and Hungary) of the V4 Group, democracy was in decline during the outbreak.

Practical Implications: The study shows that pandemics spread rapidly and affect many countries within a short time. They have a significant impact on public health, the economy, and social and political structures of the countries. In order to reduce or prevent their effects, the governments must provide a timely response. Timing is a key success factor in the fight against the pandemics and helps minimise the consequences thereof.

Originality/Value: The study aims to contribute a detailed and comparative analysis of government responses and challenges of V4 countries in the fight against Covid-19 in the initial stage of the outbreak.

Keywords: Covid-19, government responses, Visegrad countries, NPIs, policy responses

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1 Introduction

Human beings have undoubtedly witnessed various pandemics which affected different parts of the world. Many people died because of these outbreaks. Although the results or effects were different, in general, they emerged as a global problem. However, in terms of the country and population it affects, the Coronavirus (Covid-19/SARS COV-2/Novel Coronavirus) pandemic is the most important of all. The outbreak is still ongoing and there is uncertainty about when it will end. COVID-19 (SARS-COV 2), a member of coronavirus family such as the SARS (South Asian Respiratory Syndrome) and MERS (Middle East Respiratory Syndrome) outbreaks (Şencan and Kuzi, 2020, p. 364) faced by the world since early 2000s, first emerged in Wuhan Province of China (Lee et al., 2020, p. 364) as clusters of pneumonia cases (Chen et al., 2020, p. 507) in the last quarter of 2019. Although the source or the origin has not been fully identified, the virus is thought to be emerged at a fish market in Wuhan, China (Zhu et al., 2020, p. 728; Zu et al., 2020, p. E15; Lu et al., 2020, p. 401).

After the first case identified in China on 12 December 2019, it started to spread the other countries within a short time. When they informed World Health Organization (WHO) about the virus, it was already late. Like Chinese government, WHO was slow in declaring the coronavirus as a pandemic, too. WHO first watched the process and declared the Covid-19 outbreak as a "Public Health Emergency of International Concern (PHEIC)" after more than 200 people died on January 30, 2020 (Mahase, 2020, p. 1). As it was getting worse than expected, about one and half month later WHO officially declared COVID-19/SARS-COV 2 as pandemic (WHO; 2020a). At that time there were 126,714 cases and 4,616 deaths across the globe. After WHO declared COVID-19 as pandemic, the governments started to take measures in order to stop or reduce the cases and deaths in their countries. As pandemics are different than the other crises or diseases and it is difficult to form a policy response, the governments' responses varied among the countries. That is quite normal because most of them haven't encountered such a crisis before so they have no idea what to do or how to respond to it. After a while, as they began learning the dynamics and the characteristics of COVID-19, they started to implement Non-Pharmaceutical Interventions (NPIs) that is also known as public health interventions.

There are various publications for government or policy responses of Visegrad (V4) countries to Covid-19. Sagan et al. (2021) analysed and compared the health policy responses of V4 members during first phase of Covid-19. By using the data from Health Policy Response Monitor they focused on the similarities of V4 members. Drinóczy and Bień-kacala (2020) discussed the Covid-19 Acts or pandemic related regulations in Poland and Hungary. They note that both countries tried to manage the process in an illiberal way. Especially, Hungary was an example of autocracy. Túri and Virág (2021) compared and evaluated the public health policies and pandemic management as well as social and economic outcomes of V4 countries and South Korea during Covid-19 pandemic. They found that South Korea did quite well in the fight against

Covid-19 owing to the appropriate combination of NPIs and advanced health system. Although V4 countries did well, they need to have a well-functioning surveillance system, comprehensive testing strategy and transparent government communication. In their conference paper, Kovács and Zsigmond (2020) analysed the economic effects of Covid-19 on V4 countries for the Spring period of 2020 that is the first phase of the outbreak. According to the study V4 countries really felt the effects of Covid-19 economically. The decline in GDP was significant and many people lost their jobs. In their comprehensive literature review, Chubarova et al. (2020) analysed and identified the critical factors in success/failure of public policies focusing on fighting the spread of COVID-19 pandemic in Czech Republic, Russia, and the Slovakia. They analysed the policy responses and found that timing of public policy responses and success in motivating compliance may be critical factors in containing the pandemic. Aidukaite et al. (2021) discussed the social policy responses to Covid-19 in Central and Eastern European countries including Poland, Hungary and Slovakia. The mentioned study shows us that governments in V4 countries reacted to the COVID-19 crisis by providing extensive protection for jobs and enterprises. The authors found that *“social policy responses to the first wave largely depended on precious social policy trajectories as well as the political situation of the country during the pandemic”*.

This paper aims to discuss the government responses of V4 countries to Covid-19 and the challenges they faced during the outbreak in a comparative way. After introduction part, the study is structured as follows: In section two we give theoretical background. And then we give a brief information about Covid-19 in V4 countries. After methodology section, we focus on the government responses of V4 countries and challenges that they faced in the fight against Covid-19. At the last section, we analyse and discuss the findings. This study covers only the initial phase of Covid-19 outbreak.

2 Theoretical Background: Non-pharmaceutical interventions (NPIs) as a response to Covid-19

Pandemics have been a problem for humanity throughout history as they affect the whole society in many ways. Microorganisms, which are effective in spreading diseases, can spread rapidly via various ways i.e. humans. Especially today, modern and advanced transportation facilities have both facilitated and accelerated the spread of viruses. Pandemics emerged as a result of the rapid progress of outbreaks and the spread of them to a wider area than the country where they originated in.

The effects of pandemics were devastating and millions of people died. Hundreds of thousands of people have also died in the ongoing COVID-19 pandemic. In addition to public health, its impact on the countries' economies has been devastating. In order to prevent this, governments implemented various measures. Besides the political structures of the countries and the values that the decisions are based on, there are other factors affecting the policy-making process in implementing those measures. The initial conditions of the

pandemic and its early development, the global and regional connections of countries, in particular, the proximity or connection with the country/s that are the epicentre of the pandemic, culture of the countries (local or national) are some of these factors (Anttiroiko, 2021, p. 3). Efficient pandemic management is crucial. During the pandemic management government or the public administration must consider everything such as Non-Pharmaceutical Interventions, international trade and travel, economic consequences of the pandemic. They must find solutions for these problems on time. Pandemic management must also involve a vast majority of the population in order to be successful (Migone, 2020, p. 260).

During a severe pandemic, several measures are used to prevent or halt the spread of an outbreak. One of them is to introduce pharmaceutical (drug) interventions such as vaccines and anti-viral drugs and the other one is Non-Pharmaceutical Interventions (NPIs) that are applied in cases where there are not enough vaccines and drugs or the treatment of the disease/outbreak is not yet known. NPIs are the mostly and frequently used ones that both individuals and households and communities can implement. By implementing these measures, the rate of person-to-person transmission of the virus can be reduced and thus prevent the burden of an outbreak on health systems and public health (paho.org). NPIs may delay the start of a pandemic, or if the pandemic has already started, they may prevent or delay its peak enabling health authorities to prepare for the outbreak. Due to the implementation of NPIs, the transmission of the virus in the community can be reduced, which is useful especially for health systems with limited resources or capacity. They can reduce the overall morbidity and mortality rate even if NPIs do not reduce the total number of cases in the outbreak (WHO, 2019, p. 8). NPIs include isolation of sick people from human and environmental cleanliness (hand washing, hand and surface hygiene, wearing a mask), contact tracking, quarantine of infected people, social distance, travel restrictions, closing schools, churches and workplaces, and banning people from gathering (Lai et al., 2020; Ferguson et al., 2020, p. 20). However, the main condition for the success of such interventions is the early and effective implementation at the onset of the pandemic. Otherwise the chance of success decreases (Nunan and Brassey, 2020, p. 1-8). In general, it is best to wait until there is a cluster of cases of severe disease in the country or the region. Interventions must be proportionate. If they are implemented too early, especially social distancing policies (interventions) in the community level, they may cause job and income losses. If they are implemented too late, then virus may rapidly spread causing deaths. So governments must be very careful on implementing NPIs (paho.org).

Today, three different NPI strategies, including containment, mitigation and suppression, are adopted and implemented (Hossain et al., 2020). Containment measures are applied to prevent the infection and spread of the disease. It is also a method applied when the first cases are detected to save time on the health system to make preparations for patients and to wait for the development of vaccines and effective interventions (Lai et al., 2020). Mitigation measures are used when the number of cases increases and the possibility of

finding a relationship between cases is complex. A mitigation strategy is not aimed at cutting off transmission entirely, but rather to slow or reduce the health impact of an outbreak on mortality and the collapse of the health system (Ferguson et al., 2020, p. 20). The mitigation strategy is likely to be high in terms of the risk of the fact that this strategy is applied because of the serious illness or death. The suppression strategy aims to reducing the number of secondary cases produced by each case (Patino-Lugo et al., 2020, p. 3). The suppression strategy has significant effects on health and well-being both in the short and long term.

3 Confrontation: First wave of Covid-19 in Visegrad countries

Compared to other EU members, Visegrad countries felt the effects of Covid-19 later. Covid-19 arrived at V4 members over a month later than the first confirmed case in Europe. Covid-19 related cases were seen in the group members at almost the same time (the first week of March). Among the Visegrad (V4) group, the first country where the Covid-19 outbreak was detected was the Czech Republic. Then the cases were also detected in Poland (Guasti, 2020, p. 53; gov.pol; usnews.com) and Hungary on March 04 (Röst et al., 2020, p.15) and finally in Slovakia on March 06 (Nemec and Spacek, 2020, p. 839; Nemec, 2020; Donicova, 2020, p. 729). The first confirmed cases were detected in those who returned from abroad or had a contact with them. The first cases in the Czech Republic were in three people linked to Northern Italy (Brom et al., 2020; Komenda et al., 2020; Guha et al., 2020), The first case in Poland was identified in a 66-year-old man returned from a visit to Westphalia (Germany) to Świecko by bus and from there to Cybinka by private vehicle. (Szymczak, 2020). The first cases in Hungary were detected in a 27-year-old university student (Röst et al., 2020, p. 13), who was studying and residing in the country and recently returned from Iran and a doctoral student returned from Iran. The first confirmed case in Slovakia was a 52-year-old male patient who did not travel anywhere but he was estimated to have contracted the virus from his son who visited Venice, Italy on February 14-15, 2020 (Slovak Spektator, 07 March 2020). Because his son's test result was positive and he was quarantined.

In V4 countries, the pandemic was slower than in many European countries and the effects were relatively weaker. After the first case detection in the group countries, the increase of cases followed a fluctuating course and peaked in April and then declined again except Poland. At the end of March totally 6,474 cases were detected, including 3,308 in the Czech Republic, 2,311 in Poland, 492 in Hungary and 363 in Slovakia. As of May 31, there were 23,786 cases in Poland, 9,268 in Czech Republic, 3,876 in Hungary and 1,521 in Slovakia. Mortality rates were at lower levels than in many countries, too. Death tolls, which were very low at the end of March, increased in April and started to decrease again in May. On May 31, there were totally 1,938 deaths, that were 1,064 in Poland, 526 in Hungary, 320 in the Czech Republic and 28

in Slovakia (ourworldindata.org). Slovakia, in particular, has the lowest mortality rates not only among its peers but also within the EU (Gerbery, 2020).

Table 1. Cases, Deaths, Tests and Case-Fatality Rate During First Wave (31 May 2020)

Country	Cumulative Confirmed Cases	Cumulative Confirmed Deaths	Case-Fatality Rate	Test Per 1000
Poland	23.786	1.064	4,5 %	22,10
Czech Republic	9.268	320	3,5 %	N/A
Hungary	3.876	526	13,6 %	19,23
Slovakia	1.521	28	1,8 %	31,66

Source: ourworldindata.org

4 Methodology

Our paper based on a comparative analysis. This paper focuses on government responses of V4 countries to Covid-19 in a comparative way. As government responses, we discussed Non-Pharmaceutical Interventions (public health responses). This study also aims at explaining the challenges V4 countries faced during the pandemic. The period (timeframe) of government responses in this paper is between January 01 and May 31, 2020 which is also known as the first wave (Spring period) of the outbreak. We believe that this timeframe is long enough to analyse responses of the V4 Countries.

Data on Covid-19 cumulative confirmed cases, cumulative confirmed deaths, case-fatality rate and tests per 1,000 people were collected from the ourworldindata.org that is sourced by the Coronavirus Resource Centre of Johns Hopkins University and operated by Oxford University. For the responses of V4 countries to Covid-19 outbreak, we used the secondary sources such as articles from ScienceDirect, Google Scholar, PubMed, Web of Science (WoS); newspapers or institutional reports and Covid-19 and health related data from WHO, IMF and OECD databases. For the policy responses in V4 countries and other EU countries in order to make a comparison, we used ourworldindata.org, CoronaNET and Covid-19 Government Response Tracker (OxCGRT) databases. While we were selecting sources for this article, we decided some inclusion criteria which are as follows: the publications should contain Covid-19 management of our selected countries, the countries' health systems, the functions and responsibilities of the organizations of outbreak management, policy responses of the countries to the pandemic. We excluded the publications that are not related to pandemic management and that don't include good strategies for the fight to Covid-19.

There are several reasons for choosing V4 countries. First of all, these countries have a common history. Because of their geographical location, they are

often known as Central and Eastern European nations. Because of these characteristics, they have relations with EU countries such as Germany, Austria and non-EU countries such as Ukraine. All of these countries are high-income countries with a very high Human Development Index. V4 countries are at the forefront both in Europe (5th) and in the world (8th) in terms of exports and imports. In addition, V4 countries rank high not only in the EU but also in the world in terms of national income per capita. They are similar to Central and Eastern European countries in many respects, so the results here may be useful for other countries in the region.

Although V4 countries are governed by populist leaders, they differ from each other in the style of leadership. Hungary and Poland, in particular, have further accelerated the transition to illiberal democracy (also called as autocracy) that they started before the pandemic, along with the Covid-19 pandemic. For Hungary in particular, this presented a great chance to gather power and rule the country with the decrees. Although the situation in the Czech Republic and Slovakia is not that bad, there is still a risk. Therefore, comparing the measures taken by populist leaders who adopt such different management styles to prevent the pandemic and evaluating their effectiveness has also become important and worth discussing.

V4 countries, like many other countries-especially Europe and EU countries - have not previously encountered a situation similar to Covid-19. However, a study on OECD countries by Sebathu et al. (2020) found that countries that have adopted the democratic style of governance (this is controversial for Poland and Hungary) followed each other's positive decisions. Therefore, it would be useful to examine the reactions of these countries in such a situation. Most importantly, they gathered these countries under one roof. The policies implemented by these countries can also provide us with information in terms of the functioning and compliance of the union (group). As we focus on discussing the similarities, differences and challenges of the policy responses of V4 countries, we try to find answer to the following research questions (RQ).

RQ1: How do the government responses differ in V4 countries?

RQ2: Why are the government responses similar or different in the group countries?

RQ3: What challenged the V4 countries during the fight against to Covid-19?

5 Results

5.1 Government responses to the pandemic in V4 Countries

After the declaration of Covid-19 as a "*pandemic*" by WHO on March 11, 2020, the governments started to take "Non-Pharmaceutical Interventions (NPIs)" to slow down the pace of the pandemic and minimize its effects (Lewnard and Lo, 2020) as mentioned above. To do that governments rapidly started to implement various measures such as travel restrictions, border closures,

closure of workplaces, bans on public or religious gatherings, mandatory mask-wearing, curfew or lockdown (Desvars-Larrive et al., 2020, p. 2; Correia et al., 2020). While implementing NPIs, some governments (as China) used Restrictive/Suppression Strategy which includes more rigid and central to local measures, some such as the UK and the USA used Permissive Strategy that is softer and doesn't contain harsh interventions. The others such as Hong Kong, Japan, Singapore preferred Hybrid Strategy that is the mixture of two above (Travica, 2020).

In our sample countries, in order to reduce the spread of the virus and to minimize deaths, as in many other countries, "hybrid strategy" and its various methods were applied, except for some minor differences. The rationale to choose this strategy and especially the NPIs was that the outbreak had a feature that can be easily transmitted through respiratory droplets, and the only way to prevent it was to implement NPIs at that time. This method, especially human mobility restriction, isolation and quarantine practices, gave successful results (albeit with a delay) in China where the outbreak was first emerged (Kraemer et al., 2020; Voko and Pitter, 2020; Vinceti et al., 2020; Alfano and Ercolano, 2020) have prompted V4 countries, like many others, to implement the same method to stop transmission and reduce the burden on the health system. V4 countries, like other EU members, unlike Asian countries (they have experienced SARS, MERS beforehand), have not experienced a large-scale pandemic like Covid-19 since the Spanish Flu. Because of this lack of experience, the governments have begun implementing similar practices or measures implemented around the world in the Covid-19 outbreak. In addition, European countries' trust in each other in their policy practices (Sebatu et al., 2020) has been influential in implementing similar policies and therefore NPIs. Moreover, as there was no vaccine or vaccine development studies in the group countries, NPIs were the best as they were accessible, affordable and effective. We can group the NPIs in V4 members into three categories as in WHO paper (2019). These are as follows;

1. Travel related measures (travel advice, entry and exit screening, internal travel restrictions and border closure).
2. Social distance measures (school and workplace closures, quarantine of exposed persons, contact tracing, isolation of sick people; bans of gathering, meetings etc.),
3. Personal protective measures (hand hygiene, face mask and other personal protective equipments),

The governments first introduced travel related measures because mobility may cause the rise of the cases. So as to reduce human mobility and mitigate the Covid-19 outbreak, many European countries including V4 members followed the guidelines of European Commission (Linka et al., 2020, p. 711). They introduced travel restrictions within and outside the country by closing the borders to certain countries such as China, Iran, Italy. The V4 countries were among the first countries that closed their borders in Europe (Sagan et al., 2021, p. 5). The V4 members also started to test the people at the airports

coming from abroad and they were kept in quarantine for a certain period of time. A 14-day mandatory quarantine for people returning from certain regions of Italy on March 06 in the Czech Republic (Radio Prague International, 03 June 2020), for everyone returning from abroad in Slovakia (uvzsr.sk) and all citizens coming from abroad for 14 days in Poland (Filonchuk et al., 2020, p. 2). Polish government also advised her citizens not to do unnecessary flights and travels within the country and to nine countries, including Northern Italy, China, Iran and South Korea, unless necessary (Pinkas et al., 2020, p. 2). The Czech Republic closed its borders on March 16 (GOV, 2020; Brom, et al., 2020, p. 2), Slovakia on March 12 (uvzsr.sk), Poland on March 13 (Pancevski and Hinshaw, 2020) and Hungary on March 16 (Guasti, 2020). Bans on all personal international flights, train and bus travel, and unnecessary international travel as of 12th of March 2020 was the strictest measures implemented by the Slovak Government in Europe.

In addition to travel related measures, V4 members also introduced social distance measures. Educational institutions and workplaces were closed; social or religious activities or meetings that could bring many people together were banned to reduce human mobility and spread of the virus. One step further than those measures was a curfew or full lockdown. In the Czech Republic public meetings and activities with 100 people or more were prohibited (GOV, 2020; Nemeč and Spacek, 2020, p. 839) on March 10. The next day, as of March 11, all educational institutions (universities were closed on March 16), along with 22 countries such as Italy, China, France, the USA, Japan, Singapore, were closed and online (distant) education started (Brom et al., 2020, p. 1). By this decision, the Czech Republic was one of the first countries in the world to close educational institutions face to face (UNESCO, 2020). The Czech government declared the state of emergency on March 12 (Löblova, 2020, p. 75; Trnka and Lorencova, 2020, p. 546) and decided to close the workplaces, non-essential shops, bars etc. on March 14. Curfews were imposed except for basic shopping, commuting to work and walking in parks (16 March 2020). Since March 23, more than two people except family members and employees have not been allowed to come together (GOV, 2020; Trnka and Lorencova, 2020, p. 546). Hungary introduced similar measures as her peers. On March 7, the anniversary of the Hungarian Revolution, which would be celebrated on March 15, was cancelled. The Orban government first closed the universities (11 March) and then all educational institutions (13 March) to in-person education and distant education started. On March 11, the government banned indoor meetings of more than 100 people and outdoor meetings of more than 500 participants (nnk.gov.hu). On the same day, the state of emergency was declared. As of March 17, the opening hours of the shops were shortened and the mobility of citizens were restricted on 27th of March (www.koronavirus.gov.hu; Merkely et al., 2020, pp. 1064-1065). On March 28, public events were cancelled and a lockdown was announced. Only grocery stores and pharmacies were allowed to remain open (Merkely et al., 2020, p. 1065).

In Poland, all mass events were banned on March 10 (Matczak, 2020, p. 350), and all educational institutions, including universities, were closed two days

later (Jarynowski et al., 2020, p. 10; Wielechowski et al., 2020, p. 6) and restaurants and shopping centres were closed on March 1 (Paul, 2020, p. 242). Starting from March 14, all gastronomic activities, sports and entertainment services were limited (Filonchik et al., 2020, p. 2; Jarynowski et al., 2020, p. 10). A pandemic was declared in the country on March 20, and more social distance measures were promulgated of March 25 (Pinkas et al., 2020; Matczak, 2020, p. 351). The measures against the pandemic in Slovakia took place just on the eve of the government change. Despite this, we can say that the current government did not neglect the fight against the pandemic and did well before handing over its task. The Slovak government mobilized the crisis team long before the outbreak started. Earlier than many European countries, Slovakia declared the state of emergency on March 16 (Sagan et al., 2021). The Slovakian government banned social, sporting and cultural events starting from March 9. Kindergartens and all educational institutions were closed on March 12. All sports facilities were cancelled (13 March), all public prayer halls, including churches, were prohibited. As of March 16, all retail stores have been closed, except the stores that are allowed to remain open under certain conditions. Grocery stores and pharmacies were excluded from closure (Nemec, 2020).

The last group of NPIs implemented in the Visegrad Countries was personal protective measures such as hand washing, social distance and mask wearing (face covering). Hand hygiene was one of the important measures of Covid-19 all over the world. The cleanliness-hygiene-distance rule has been recommended to everyone since the beginning of the pandemic. Hands must be frequently washed with water and soap. If there is no water or soap, then alcohol-based hand sanitizers are recommended, too. People were also advised to maintain at least 1-2 metres distance from the others. It was also recommended to clean surfaces such as frequently used door handles, lighting buttons and frequent ventilation of closed areas such as home and workplace (CDC, 2019; WHO, 2020b). All these measures were advised to the people in the V4 countries as they were advised by WHO. In the Czech Republic, as of March 19, it has been obliged to wear masks, including children over two years old. The Czech Republic is the first European and V4 country that imposes the obligation to wear masks (19 March 2020) in indoor and outdoor areas. When Czech Government imposed to wear mask in the public spaces, there were no countries imposing mandatory mask wearing (only France recommended mask wearing) in Europe. Like Czech Republic Slovakia was also one of the first countries who imposed to wear mask (in public transport and shops on March 15 and in all public spaces on March 25) in European and V4 countries (Tait, 2020). Other than these countries Poland (required in all public spaces) and Hungary (required in some public places such as public transport) also imposed mandatory mask wearing (ourworldindata.org).

Table 2. Measures/Responses to Covid-19 in Visegrad Countries

Country	Measures						
	First Measures	Quarantine at Country Entrance	Border Closure	School Closure	State of Emergency	Mandatory Mask wearing	Full Lockdown
Poland	10.3.2020	15.3.2020	11.3.2020	12.3.2020	20.3.2020 (* state of pandemic, not emergency)	16.3.2020	24.3.2020
Czech Republic	06.3.2020	06.3.2020	16.3.2020	10.3.2020	12.3.2020	18.3.2020	15.3.2020
Hungary	07.3.2020	26.3.2020	16.3.2020	16.3.2020	11.3.2020	No	16.3.2020
Slovakia	28.2.2020	13.3.2020	13.3.2020	08.3.2020	16.3.2020	25.3.2020	08.4.2020

Source: ourworldindata.org; Guasti (2020, p.50); Covid19healthsystem.org; Sagan et al. (2021)

The measures taken against the Covid-19 outbreak naturally have to have some legal basis as restrictions on many rights and freedoms were imposed. The restrictions or practices lacking no legal basis can't remain in force for a long time and they don't have sufficient support from the people. Although they have been criticized in some aspects, Covid-19 measures of V4 countries have legal basis. In Poland, the details of the state of emergency and what measures can be applied are stated in Article 228(1) of the Constitution of Poland 1997. According to this article, one of the "martial law, state of emergency or natural disaster measures" may be applied in cases of special danger where constitutional measures are insufficient. But instead of these measures, which are enshrined in the Constitution (Urbanovics et al., 2020), the Polish government declared a state of pandemic emergency under the law on the prevention and control of human infections and Infectious Diseases (5 December 2008) - also known as the Polish Infectious Diseases Act or Contagious Diseases Act (Binder et al., 2020). Articles 46-48 of the Act in question detailed regulation of the pandemic emergency. It is mentioned in its articles. Accordingly, the pandemic emergency came into force on March 14, and the restrictions were gradually lifted from the end of May. All measures during the outbreak were based on Contagious Diseases Act.

In Hungary, the general rules of certain types of "Special Order of Law" are mentioned in articles 48-54 of the Constitution (Fundamental Law). The so-called "state of danger" of the Hungarian government was declared with Government Decree 40/2020 (Binder et al., 2020) in accordance with the article 53 to the Fundamental Law. Until the adoption of the Hungarian Coronavirus Law, the government chose to manage the pandemic only by decrees based on Article 53 of the Constitution. The Hungarian Coronavirus Act came into force on 31 March 2020 and remained in effect until it was abolished on 18 June (Urbanovics et al., 2020). But despite this act, the government still chose

to manage the process through decrees. Borders, shops, schools and universities in Hungary were closed by decrees issued on the basis of the article 53 of Fundamental Law (Drinóczy and Bień-kacała, 2020, p. 183). Drinóczy and Bień-kacała (2020, p. 180) claims that Coronavirus Act itself is unconstitutional because of three reasons. First, the measures do not correspond to the 15-day rule of Fundamental Law. Second, the published decrees are aimed at legitimising the old post facto because they are not placed on a constitutionally appropriate basis. Finally, it has allowed future decrees to be excluded from parliamentary oversight. Due to these characteristics, the Coronavirus Law is named as the "*Law of Authoritarianism*".

In the Czech Republic, the declaration of a state of emergency is not in the Constitution, but in the Czech Security Law (CAS). Article 2 of CAS listed the declarable types of extraordinary permits, including the state of emergency specified in the articles. In addition to this law, the Czech Crisis Management Act (CMA) and the Czech Health Protection Act (APPH) have established the legal basis for decisions taken in the management of the pandemic. Article 5(1) states in which case the state of emergency will be declared, and Article 6 (2) states the process of the state of emergency and how it will be extended. Bans (freedom of movement, the right to free assembly and the right to do business) during the outbreak were introduced in accordance with the article 5 of the Czech Crisis Management Act (Urbanovics et al., 2020).

The structure of Slovakia's state of emergency is very similar to that of the Czech Republic. The way to declare war, declare a state of war, declare a state of crisis, declare a state of emergency and use public authority in a time of war, the state of war, the conditions of a crisis situation will be set out by a constitutional law [Article. 102 (3)]. The constitutional law 227/2002, which forms the basis of the Slovak government's declaration of state of emergency, is the Slovak Security Law (CASS) on state security. However, there are two other low legislative acts that have a role in emergency situations of COVID-19, and these are the Civil Security Act No. 42/1994 and the Slovak Emergency Law Covid-19. On 12 March, the so-called state of emergency" was declared under the Slovak Civil Security Law (Urbanovics et al., 2020). A state of emergency under the Slovak Security Law was declared from 16 March and introduced a much stricter package of restrictions and precautionary measures (Binder et al., 2020).

5.2 Challenges in V4 countries

When taking steps to prevent the pandemic, governments have to deal with or consider numerous problems which also have important effects on the efficiency and success of policy-making. We can list the difficulties faced by the administration in the Covid-19 process as economic structure, government and health system capacity, public support, the country's elderly population and vulnerable groups, the efficiency of the decision-making process. But apart from these, there are also some more challenges such as air pollution, ethnicity issues that governments face during covid-19 policy-making process.

In general, although the government and health system capacities of the group countries are at a good level, it is useful to mention some factors that governments may have difficulties in policy-making process while the outbreak is ongoing. V4 countries do not allocate a sufficient share to health expenditures. In other words, the money spent on health is below EU average, which is a significant challenge. Hungary's share in public health expenditures is two-thirds, that is below the EU average (79%) (OECD, 2019a, p. 3). Almost half of out-of-pocket health expenditures in Hungary (one of the highest rates in the EU) go to pharmaceutical and medical device expenditures and this creates a serious problem for the low-income and vulnerable population (OECD, 2019a, p. 22). Similarly, in Poland and Slovakia, the share of the government in health expenditures is also below the EU average. Poland's health budget (1507 Euros per capita and 6.5% of GDP) is one of Europe's lowest (OECD, 2019b, p. 22). As its peers the Slovakian government spends significantly less on health than the EU average, both in absolute terms (EUR 1,600 per capita in 2017, adjusted for differences in purchasing power) and as a share of GDP (6.7%) (OECD, 2019c). Low financing of health expenditures may lead to inadequacies in meeting the healthcare needs of the increasing elderly population and providing quality healthcare services (OECD, 2019b, p. 18). Especially in these days when the Covid-19 pandemic continues, this risk is higher.

In addition to health expenditures, the low or high number of healthcare workers, one of the indicators of health system capacity, is also an important factor in health service delivery. A country with sufficient and qualified health workers is more likely to cope with pandemics, crises or other unexpected situations. The shortage of healthcare personnel is a problem for many countries or regions. Although the number of medical graduates has increased in recent years in Poland, the number of physicians and nurses is still insufficient. In particular, the scarcity of general practitioners causes disruptions in the provision of primary health care services and it is estimated that this problem will continue (OECD, 2019b, p. 19). In Hungary the inadequacy of the number of healthcare workers and the uneven distribution of the existing healthcare personnel make it difficult to access healthcare services and to provide effective healthcare services. In order to overcome this problem, the Orban government has made significant improvements in the income of healthcare workers in recent years but there is still a shortage of healthcare staff due to inadequate working conditions and career planning (OECD, 2019a, p. 8). The problem for the Czech Republic is the growing share of the elderly population among healthcare workers. Especially the rising elderly population of doctors and the approaching of retirement times as a result, if necessary measures are not taken, are likely to create a problem in the future (EC-EPC, 2018). The number of healthcare workers in the country is equal to the EU average, but it poses a risk to the public administration as interregional disparities persist (OECD, 2019c). Another country facing a shortage of healthcare workers is Slovakia. In particular, the number of nurses is below the EU average and this rate is increasing every year (OECD/EU, 2020). In sum, V4 countries have a rate relatively below the EU average but above the OECD average in terms of the number of physicians. In terms of the number of nurses and midwives, group

countries are below both the EU and OECD averages. The number of hospital beds the countries have is above the EU and OECD average. V4 countries gave a better test than many European and world countries in the first wave in the fight against Covid-19 and did not encounter a bed occupancy issue such as Italy, the USA, Spain. However, as mentioned above, the ratio of health expenditures of countries to GDP is far below the EU and OECD average.

Table 3. Health Indicators of Visegrad Group Members

Country	Number of Physicians per 1,000	Number of Nurses and mid-wives per 1,000	Number of H. Beds per 1,000	Number of ICU Beds per 100,000	Curent Health Expenditures (% of GDP)
Czech Republic	4,1	8,4*	6,6	11,6	7,6
Slovakia	3,4*	6,1**	5,8	9,2	6,7
Poland	2,4*	6,9	6,6	10,1	6,3
Hungary	3,4	6,9	7	11,2	6,7
EU	3,7	9,3	4,6		9,1
OECD	2,9	9,6	5,1	12	12,5

Source: who.int; ourworldindata.org; databank.worldbank.org;
 * According to 2017 data; ** According to 2016 data

6 Discussion

The Covid-19 pandemic is still ongoing. it seems as if it is going to continue for a longer period, at least until the vaccination reaches a certain level. Unlike previous pandemics, it affected a vast region, and as it is a virus that has not been experienced before, it initially left the governments desperate. While some Asian countries such as South Korea, Singapore, Taiwan were more prepared for the pandemic due to their previous MERS and SARS experiences, the vast majority of the world was unprepared for this outbreak. Confusion about what measures to take at first and the inability of the World Health Organization to manage the process caused the virus to spread rapidly. However, governments have immediately adapted to the process and started to take essential measures. These methods, also called Non-Pharmaceutical Interventions, have been applied worldwide with minor differences. They are used as one of the most effective ways of preventing pandemics/diseases that have not yet been treated. When the epidemiology literature is examined, it has been found that NPIs (Markel et al., 2007; Hatchett et al., 2007) provide an approximately 45% reduction in high mortality and flatten the infection curve. There was a 20% decrease in the cumulative excessive death rates of cities that intervened in the pandemic with early and drastic measures. In sum, we

can say that NPIs has been proven by studies that slow down the spread and meeting rate of the disease (Bootsma and Ferguson, 2007).

In this paper, the pandemic management of V4 countries and the challenges that affect or may affect governments' policies were discussed. The countries in the region started to take rapid measures that are similar in almost all group members after the spread of pandemic to Europe. Interventions such as mask wearing, hygiene and distance rules, school and workplace closures and curfews were implemented in all V4 countries. Apart from health measures, the countries also implemented socio-economic policies for the people and firms, too. The performance of V4 countries during the first wave of the pandemic was better than many European countries and worldwide. It is obvious when the cumulative number of cases, deaths and tests as of 31 May 2020 is checked. There are some key factors that can explain this success story.

Timing is one of the key factors, for us the most important, for the success of V4 countries in the fight against Covid-19. It is important as it increases the efficacy of the decisions. For instance, the Czech Republic had a full lockdown before the deaths from Covid-19 were detected in the country. Similar to the Czech Republic, Slovakia also greatly reduced human mobility before deaths, meaning it had achieved a partial closure. Two other group countries, Poland and Hungary, were also fast for the measures. On March 10, the last of the first measures taken against Covid-19 in V4 countries, no deaths from Covid-19 were recorded in any group members. While, on March 10, the total number of cases in V4 countries was 79 (41 in Czechia, 22 in Poland, 9 in Hungary and 7 in Slovakia), it was 1,457 in Germany, 10,149 in Italy, 182 in Austria and 889 in the UK. Similarly, the total number of deaths in V4 countries was 318 (159 in Poland, 99 in Czechia, 58 in Hungary and 2 in Slovakia) on April 08, the date of the last decision for full lockdown. At the same date, the total number of deaths was recorded as 2,349 in Germany, 8,589 in the UK, 10,874 in France and 273 in Austria (ourworldindata.org). These figures clearly show that one of the core success factors of V4 countries in the first wave of the pandemic is that they acted on time and quickly. This also coincides with the survey of Lai et al. (2020) in China.

According to that survey, if the interventions in China had been implemented one week before their actual time, there could have been a 66% reduction in the number of cases, and if they had been implemented three weeks earlier than the actual time, the number of cases could have been reduced by 95%. If there had been a reverse application, that is, if the NPIs had been implemented one week or three weeks later than real-time, a 3-fold and 18-fold increase could have occurred respectively. Based on these data, Lai et al. (2020) suggest that timing (early detection and isolation) may be more effective than travel restrictions or social contact bans in fighting against the pandemic. This is also consistent with the work of Jablonska et al. (2020, p. 141). Brudzinska (2020) notes that there are mainly three reasons why V4 members acted assertively and fast. The first one is that the region is near the ski-resorts in Italy or Austria. Citizens of V4 countries usually go those resorts for the winter holiday and they may bring the virus from there. The second reason is that

Visegrad members have one of the highest number of cross-border commuters as a share of employed population. About 5% of Slovak, 2,3% Hungarians and less than these two country workers cross the border to work every day. Those people can move among the countries with no stringent ID or passport checks at the border which also means no control of virus. The last reason for the rapid movement is the healthcare capacity of the countries and elder population in some countries (Czechia, Hungary and Poland).

Society's tendency to accept and obey rules, in other words trust and support of the people to the governments may be another success factor of V4 members. Trust, especially political trust, in a state is very important for the success of government policies or interventions in times of crisis. As shown in various studies (Scholz, 1998; Chanley et al., 2000; Tyler, 2006), trust in the government encourages citizens to comply with the policies implemented by the government. During the SARS pandemic, although the people of Singapore did not know much about the disease, they followed the rules to the maximum extent as a sign of trust in their government, and thanks to this, the Singapore government was able to control the pandemic (Deurenberg-Yap et al., 2005). The governments of V4 countries have received sufficient support from the public. Especially during the first wave of the outbreak people in V4 countries supported and trusted their governments. They obeyed the social distance rules and curfews. This high willingness to comply with social distance measures such as South Korea, Taiwan, Singapore and Hong Kong played an important role in the fight against Covid-19 in V4 members. According to a survey conducted by Kantar (2020) in the name of European Parliament in the second half of June, support given to governments during the Covid-19 outbreak was 63.6% in Slovakia, 52% in the Czech Republic, 48.2% in Hungary and 29% in Poland. In the same research, the satisfaction level of the participants with the measures was 72.5% in Slovakia, 64.6% in the Czech Republic, 48.2% in Hungary and 40% in Poland (EU POM, 2020). There is a background of cooperation in complying with the measures taken in V4 countries. The first one is the higher civic awareness in Central Europe compared to Western Europe. The other one is the high level of resistance and collective thinking that existed in the society due to the difficulties experienced in communism times (Bault, 2020). Only Poland and Hungary received less support when compared to their peers. This is because of the fact that Hungary implemented harsh restriction. The restrictive limitations, lack of transparency and the increase in the powers of the Prime Minister by decrees and the elimination of Parliament for an indefinite period are factors which have an impact on the decline in trust in the government in Hungary (Wojtas and Walecka, 2020, p. 196). The Czech Republic has also received a high level of support but it has been criticized by the public for not managing the process transparently enough and not providing sufficient scientific evidence and basis (Löblova, 2020). These results show us that compliance of people with measures are important but it doesn't mean that this will last forever. If there is an uncertainty about when the restrictions will end, this support can turn into protests within no time. As Newton et al. (2018, p. 40) noted "*if the people are in a serious difficulties i.e pandemic, the trust to the government or its*

policies may weaken or disappear.” For that reason, the duration and content of the measures should be clearly defined and they should not be extended arbitrarily, except under extraordinary circumstances.

Another key factor for the low number of cases especially in Poland and Slovakia is that a significant part of the population (46% in Czechia, 40% in Poland) lives in rural areas. Although this rate was low in the other two group members, the case and death rates were also low in them. V4 members do not have very crowded cities. Czech Republic, Hungary, and Poland have only one city with population of one million or more. Slovakia does not have city with the population over 500,000. Furthermore, the vast majority of the population in V4 countries (Slovakia 88%, Czech Republic 89%, Hungary 82% and Poland 88%) live in cities with a population of 500 thousand or less. This low population density in the cities reduced the rate of spread of the pandemic. As aforementioned, Covid-19 is a disease that can be transmitted through human contact (Chan et al., 2020). Therefore, there is a common belief that the virus can be transmitted more easily and spread rapidly in crowded areas, while in low-population dense regions, people are less likely to become infected (Bhadra et al., 2021, p. 623). Although some argue that population density does not increase the spread of the virus and the number of deaths (Carozzi et al., 2020), It has turned out to be effective in the later stages, if not at the beginning of the pandemic, in densely populated areas (Wong and Li, 2020). A study by Bhadra et al. (2020) in India found that the virus spreads faster in densely populated areas. In the policy brief of United Nations (2020) it is stated that 90 percent of the Covid-19 cases (according to July 2020 data) were in urban areas.

Although V4 countries are ruled by populist leaders (Guasti, 2020; Buščíková and Baboš, 2020), and especially in two of them – Hungary and Poland – have adopted an autocratic management style, they have adopted a different approach against Covid-19 than many populist leaders. Of course, during the pandemic they, especially Victor Orban, tried to gather power in their hands (Drinóczi and Bień-kacała, 2020, p.179; Kovács, 2020; Thompson and Ip, 2020)¹, but none of these leaders have underestimated the outbreak. On the

1 There are very practices that Victor Orban has taken power by turning the pandemic into an opportunity and has acted in a manner that undermines the separation of powers. Decrees on Covid-19 are the sample practices. Normally, decrees have an automatic sunset after 15 days without parliamentary authorisation. So as to ensure that Decree remains in force, the Orban government submitted the Act on Protecting Against the Coronavirus to parliament on March 23rd, but it was passed on March 30. This act has been publicly called the ‘Enabling Act’ as it gives the government extraordinary powers to the government. These powers also do not require the approval of parliament. Parliament is in session but it is the prime minister who makes the decisions and decides when they end. Control over the executive with the Authorization Act is also getting more difficult (Thomson and Ip, 2020; Kovacs, 2020). By Enabling Act, elections and referendums are cancelled until the pandemic is over (Kovacs, 2020). As Orban has the majority of parliament i.e. two-thirds of it, he can easily have the decisions he wants accepted. Another important indicator is that Covid-19 measures are excluded from judicial review. The ordinary courts were closed and they do not have the opportunity to supervise the actions of the government. That power is only in the Supreme Court. However, the court seems far from doing this as most of its members are Orban allies (Kovacs, 2021). The government has also implemented military measures (Drinóczi and Bień-kacała, 2020). The army began to control strategic institutions and state-owned hospitals and even became involved in decision-making processes. Management of public hospitals and implementation of health re-

contrary, they have taken various measures by acting faster than many countries, which was a core success factor for the low cases and deaths. Schwartz (2012) states that authoritarian regimes can produce effective results in an undemocratic environment due to centralized decision-making, effective mobilization of public support, and power over mass media. We think this is what happened in Hungary and Poland. Unlike Hungarian and Polish leaders, populist leaders in the USA, in Brazil, and in Venezuela have underestimated the Covid-19 virus at the onset, even denied it is a pandemic. For example, Bolsonaro, president of Brazil, described the pandemic which has caused to the death of nearly 20,000 people worldwide as a media trick. Trump and Maduro suggested that the virus can be treated using hydroxychloroquine, although they cannot withstand any scientific data (Mckee et al., 2020, p. 2-3). Trump called the virus just a simple flu and claimed the outbreak would end in April 2020. Similarly, Bolsonaro described the virus as a simple flu and strongly criticized the closure of schools and workplaces. Furthermore, he did not hesitate to hug and kiss his supporters frequently (Gezgüç and Duman, 2020).

There were differences such as timing, the way they implemented the measures, testing, leadership etc. among the group members. While places such as restaurants, cinemas and theatres were closed, businesses and shops where food and beverage sales are allowed varied from country to country. For example, restaurants in Hungary were open until 15.00, while they were just allowed for takeaway services in the Czech Republic, Poland and Slovakia. There were also differences on timing of school closures. Towards the mid-March, there was no decision for closing schools in Poland, while all grade level schools were closed in Czech Republic and certain grade levels in Hungary and Slovakia. With the rapid spread of the pandemic, from the second half of March to the second half of May, schools in all V4 countries were all closed and distance education started. They also differed in restrictions on gatherings. While Czechia first banned the gatherings of 101-1000 people on March 10, 2020, it changed its policy on March 12 and banned 11-100 people from coming together. As of March 24, 10 or fewer people are banned from gatherings. Hungary banned 1,000 or more people after March 11; Slovakia has banned between 11 and 100 people from gathering. Poland, compared to its peers, introduced the restrictions on gatherings later and banned 10 or fewer people after the end of March until the bans were lifted (Pozo-Martin et al., 2021).

Although populist leaders have ruled the Visegrad Countries, their reactions to Covid-19 were different. Unlike Slovakia and Czech Republic, leaders of Hungary and Poland preferred to use autocratic methods in pandemic management (Kovács, 2020; Drinóczi and Bień-kacała, 2020). In Hungary, the Orban government decided to manage the outbreak with decrees for an indefinite

forms are coordinated by the Ministry of Interior (Kovacs, 2020a). Another practice that Orban is trying to gather power in his hand is the inclusion of provisions in the Criminal Code that allow violations of pandemic confinement and imprisonment of those who give and spread false information during the pandemic process for up to five years. It has been criticized by various international organizations such as the UN High Commissioner for Human Rights, Secretary-General of the Council of Europe and Director of the OSCE- Office for Democratic Institutions and Human Rights (Thomson and Ip, 2020) and the domestic opposition as the crime of misinformation was very complex and not clear enough (Drinóczi and Bień-kacała, 2020, p. 185).

period of time and rendered the parliament ineffective. This caused distrust in the public (Wojtas and Walecka, 2020, p. 196). In countries with authoritarian leaders, the effectiveness of government or its policy production capacity is problematic. Greer et al. (2020, p. 619) claims that authoritarianism itself does not naturally produce a decisive or effective government, and some forms of authoritarianism will reduce both decisiveness and effectiveness. Unlike other countries, Hungary has also engaged soldiers and police in the fight against the pandemic. This based on Fundamental Law which has provisions on police, national security service and military mobilization (Drinóczi and Bień-kacała, 2020, p. 174). The government in Poland which tries to rule the country with autocratic tools, has not yet achieved its goals, but tries to undermine liberal democracy. In Czech Republic and Slovakia democracy was resilient. They managed to rule pandemic in a peaceful manner (Guasti, 2020, p. 57) because of functioning system of check and balance.

Epidemiologically, all V4 members did quite well. However, Czech Republic and Slovakia were not successful in managing the pandemic economically. Although both countries have taken various measures to reduce or mitigate the socio-economic effects of the pandemic, they have remained inadequate. State subsidies, especially for Slovakia, were not at the desired level. Another criticism directed at these countries is that pandemic measures have not been carried out in coordination with neighbouring countries and EU member states (Nemec, 2020, p.13). Allocations provided were not used in proper areas in some of the group members, either. For example, allocations provided by the Hungarian government have gone to football clubs and stadium constructions rather than employees or companies affected by the pandemic. Another difference between countries occurs in the number of tests. According to the data on 31 May 2020, the number of cumulative tests per 1000 people was 31.66 in Slovakia, 22.10 in Poland, 19.23 in Hungary and 0,61 in Czech Republic (ourworldindata.org, 2020). These test numbers are not at the desired level. With these rates, V4 countries were below Germany (51,26), Austria (49,80), the United Kingdom (51,77) and Slovenia (38,68). Poland and Hungary were not good at testing (Aristodemou et al., 2020). In Poland coordination between the central and the voivodes on testing at the beginning of the pandemic was very weak. One of the important indicators of this was that test samples could not be directed to laboratories with less work intensity (Matczak, 2020, p. 351) and therefore the results were not obtained in a timely manner. This naturally increased infection and the number of cases. Although their numbers increased later, there were only two certified laboratories in the country during the pandemic period (Szymczak, 2020) that was not enough. According to the news on the media, the reason why the government kept the number of tests low was to make the number of positive cases look low. Fewer tests mean fewer positive cases. Thus, the government aimed at holding elections on time by persuading the public that the process was well managed and nothing to be worried about the cases (Matczak, 2020, p. 351). Poland also had a different testing policy than its peers at the onset of the pandemic. While her peers adopted testing for some key groups and symptoms since the first week of March, Poland began testing in late March

(ourworldindata.org). Similarly, the number of tests in Hungary remained low compared to its peers. This could be because of inadequate government resources (ourworldindata.org). Merkely et al. (2020) notes that another reason why the number of tests remained low in Hungary is as the fact that health authorities did not consider it necessary to conduct more tests due to the low positivity rate of the tests performed. They also add that the testing policy of the government was only to test essential workers, people who have contact with Covid-19 patients and those coming from abroad.

Covid-19 related regulations were seriously criticised especially in two countries, Poland and Hungary. In Poland, according to academics, the government chose a pandemic state of emergency rather than a state of natural disaster under the Constitution because the elections have not yet been held and the ruling party didn't want to postpone the election as they hoped to win by an overwhelming majority (Drinóczy and Bień-kacata, 2020, p. 181). If they had chosen the first one, the election would have been postponed. Jaraczewski (2020) criticizes the emergency measures of Polish government from several perspectives. Firstly, he stated that the Infectious Diseases Act was unconstitutional because it did not clearly specify the scope of it while limiting human rights and freedoms. In addition, he underlines that the act gives government the power to unconstitutionally limit freedom of movement. Jaraczewski also argues that the act loses its legitimacy because penalties for violating Covid-19 prohibitions are imposed by administrative authorities rather than judicial authorities, and they cannot be appealed (Urbanovics et al., 2020). As mentioned above Orban, Hungarian leader, rules the country with governmental decrees. It is the most significant distinction between Hungary and the rest of the group and the EU. Because, rather than managing the pandemic through legislation, Orban chose to rule through decrees, which both expedite the process and allow it to pass laws without the approval of Parliament. They were prepared within a short time (1-2 days) and none of them went through any consultation process (Drinóczy and Bień-kacata, 2020, p. 185). Since decrees are issued for a certain period of time (15 days), the coronavirus law adopted to create the legal infrastructure for this also contains some provisions that are contrary to the Constitution. The first one is that the Constitution does not comply with the 15-day rule, the second one is that this law does not fall under the disaster Law, and the last one is that it forms the basis for decrees that will be issued later and by-passes the parliament (Drinóczy and Bień-kacata, 2020, p. 180).

As a result, key success factors of V4 countries in the fight against Covid-19 are as follows;

- V4 countries acted quickly and decisively (Sagan et al., 2021). They were rapid to respond the outbreak. After the first cases recorded within their borders, they soon declared the state of emergency (ECDC, 2021; ourworldindata.org) which gave the governments extraordinary powers to fight Covid-19.
- They all implemented harsh measures. They closed their borders, banned meetings, concerts etc.; they closed the restaurants, shops, cafes; they all closed their schools and universities; there were very strict social distance ru-

les; by banning travel within the country and/or to abroad, they reduced the human mobility. Lockdown was also one of the key factors of V4 countries.

- Mandatory mask wearing, especially in the Czech Republic and Slovakia, helped to succeed mitigating the cases. The two other members of the group followed their peers but a few weeks later.
- Trust to governments at the initial stage and people's tendency to obey the rules helped V4 members in fight to Covid-19.

In the fight against coronavirus, there are some points that governments should pay attention. The state has to protect the health of its citizens that is a constitutional requirement and also a feature of a social state. However, it is necessary to pay attention to the policies implemented for this purpose. For example, they should not forget the negative effects of curfews on the health of people. Long curfews and ambiguity about when they will end have significant effects on the mental health of the elderly population whose only social contact is outside the home (Armitage and Nellums, 2020). Therefore, it would be more appropriate to have a certain duration of the measures and to treat the elderly population, which is easier to fall into a mental depression, a little more flexible. Otherwise, we are likely to push these people whom we are trying to protect their health to other diseases or ailments. This may be a significant public health issue that influences policymakers' decision-making processes. In V4 countries, the governments did not give enough attention to the primary health care services (preventive health services). Health service delivery in Hungary is mostly secondary rather than primary level (OECD, 2019a, p. 3). In other words, hospital-centred health service delivery is more prevalent than preventive health care services. Preventive health expenditures are also underestimated in Slovakia. Only 1% of health expenditures (this ratio is 3% in the EU) is allocated to preventive healthcare services (OECD, 2019d). Preventive healthcare service is crucial. It helps to reduce medical expenses. Hospital services are expensive in almost every country. Diseases that are not detected on time or treatments that are not performed on time cause people to be hospitalized which means more spending for individuals and governments.

Governments should strengthen their health infrastructures to combat the pandemics. Especially, they should increase the number of hospital beds, the number of intensive care beds, protective materials and other equipment. Increasing domestic production such as masks, ventilators, hand disinfectants and vaccine production will further strengthen the hand of healthcare professionals in cases such as the covid-19 outbreak. The preparation of pandemic preparedness plans and the inclusion of possible situations in the future and the regular strengthening of the plans will play an important role in combating the pandemic. Transparency and participation are also important in dealing with emergencies. Managing the process in a way that includes all stakeholders of the society will increase the trust of the people to the government and it will be easy for them to accept and support the measures and the policies. Policymakers should pay more attention to digitalization of health and public services. In particular, they should make the most of artificial intelligence technologies and mobile applications. One of the success factors of

countries that did quite well in the Covid-19 pandemic was the usage of the internet/digital technologies (Ting et.al, 2020).

This study has some limitations. First of all, the study covers the first wave (Spring period) of the pandemic (01 January 2020-31 May 2020) and the data here is not valid for the second wave or the other phases. V4 countries, which had successful pandemic management in the first phase, had to face the virus again and more seriously from the beginning of autumn because of the relaxation in the summer months. Second, we made an analysis based on data from various databases. The data here can sometimes be deliberately distorted by governments. Data may be incomplete, especially for countries such as Hungary, which try to manage the process without transparency through authoritarian methods. Failure to test adequately or to test a limited part of the population may prevent the correct number of cases from emerging. It may be useful for further studies to evaluate the measures and decision-making processes in the second wave of the outbreak. Researchers may also search whether the support of the public continues in the second wave or what kind of socio-economic or psychological problems it created especially on vulnerable groups so far.

7 Conclusion

Covid-19 is still ongoing. It is a pandemic that caused most human loss after 1918-1919 Spanish Flu. It has had a very serious impact not only on the health system but also economically. In this process, it is not possible to characterize countries as successful or unsuccessful as the process is still ongoing and vaccination is just at the beginning of the road. In the first wave, some countries gave a successful test, while others failed. V4 countries gave a successful test in the first wave of the pandemic, not economically but epidemiologically. By acting in a timely and fast manner, they prevented the spread of the pandemic and the increase in the death toll. In addition to timely intervention, the public's compliance and cooperation in implementing the measures taken has been important in this success. But they couldn't continue this in the second wave of the outbreak. So this caused very high case rates and death tolls compared to the first phase of the Covid-19.

References

- Aidukaite, J. et al. (2021). Social policy in the face of a global pandemic: Policy responses to the COVID-19 crisis in Central and Eastern Europe. *Social Policy Administration*, 55, pp. 358–373. <https://doi.org/10.1111/spol.12704>AIDUKAITEET AL.373
- Aristodemou, K., Buchhass, L. and Claringbould, D. (2020). The COVID-19 crisis in the EU: The resilience of healthcare systems, government responses and their socio-economic effects. *Eurasian Economic Review*. <https://doi.org/10.1007/s40822-020-00162-1>
- Armitage, R. and Nellums, Laura B. (2020). COVID-19 and the consequences of isolating the elderly. *The Lancet Public Health*, 5(5), E256.
- Bault, O. (2020). Covid-19 pandemic spreading slower in the V4 than in Western Europe thanks to measures taken earlier. At <<https://kurier.plus/en/node/1246>>, accessed 13 November 2020.
- Bhadra, A., Mukherjee, A. and Sarkar, K. (2021). Impact of population density on Covid-19 infected and mortality rate in India. *Modelling Earth Systems and Environment*, 7, pp. 623–629. <https://doi.org/10.1007/s40808-020-00984-7>
- Binder, K. et al. (2020). States of emergency in response to the coronavirus crisis: Situation in certain member states. EPRS | European Parliamentary Research Service.
- Blair, R. A., Morse, B. S. and Tsai, L. L. (2017). Public health and public trust: survey evidence from the Ebola virus disease pandemic in Liberia. *Social Science and Medicine*, 172, pp. 89–97.
- Bootsma, M. C. J. and Ferguson, N. M. (2007). The Effect of public health measures on the 1918 influenza pandemic in U.S. Cities. *Proceedings of the National Academy of Sciences*, 104(18), pp. 7588–7593.
- Brom C. et al. (2020). Mandatory home education during the COVID-19 lockdown in the Czech Republic: A rapid survey of 1st-9th graders' parents. *Frontiers in Education*, 5:103. doi: 10.3389/educ.2020.00103
- Brudzinska, K. (2020). Central European response to Covid-19 crises. *Health Express/APR 2020*. At <<https://www.orfonline.org/expert-speak/central-european-response-to-covid19-crisis-64111/>>, accessed 20 November 2021.
- Buščíková, L. and Baboš, P. (2020). Best in covid: Populists in the time of pandemic. *Politics and Governance*, 8(4), pp. 496–508. <https://doi.org/10.17645/pag.v8i4.3424>
- Carozzi, F., Provenzano, S. and Roth, S. (2020) Urban density and COVID-19, Discussion Paper Series, IZA Institute of Labour economics, IZA DP No. 13440
- CDC (2019). Coronavirus disease 2019 (COVID-19) how to protect yourself. At <<https://www.cdc.gov/coronavirus/2019ncov/prepare/prevention.htm>>, accessed 5 January 2021.
- Chan J.F-W. et al. (2020). A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: A study of a family cluster. *Lancet*, 395, pp. 514–523. [https://doi.org/10.1016/S0140-6736\(20\)30154-9](https://doi.org/10.1016/S0140-6736(20)30154-9)
- Chanley, V. A., Rudolph, T. J. and Rahn, W. M. (2000). The Origins and consequences of public trust in government. *Public Opinion Quarterly*, 64, pp. 239–256.
- Chen, N. et al. (2020). Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: A descriptive study.

- The Lancet, 395(10223), pp. 507–513. [http://dx.doi.org/10.1016/S0140-6736\(20\)30211-7](http://dx.doi.org/10.1016/S0140-6736(20)30211-7).
- Chubarova, T., Maly, I. and Nemeč, J. (2021). Public policy responses to the spread of covid-19 as a potential factor determining health results: A comparative study of the Czech Republic, the Russian Federation, and the Slovak Republic. *Central European Journal of Public Policy*, 14(2), pp. 60–70. <https://doi.org/10.2478/cejpp-2020-0008>
- Correia, S., Luck, S. and Verner, E. (2020). Pandemics Depress the Economy, Public Health Interventions Do Not: Evidence from the 1918. At <SSRN: <https://ssrn.com/abstract=3561560> or <http://dx.doi.org/10.2139/ssrn.3561560>>, accessed 16 November 2020.
- Desvars-Larrive, A. et al. (2020). A Structured Open Dataset of Government Interventions in Response to COVID-19. *Scientific Data* 7(285), pp. 1–9. <https://doi.org/10.1038/s41597-020-00609-9>.
- Deurenberg-Yap, M. et al. (2005). The Singaporean response to the SARS outbreak: Knowledge sufficiency versus public trust. *Health Promotion International*, 20(4), pp. 320–326.
- Donicova, V. (2020). How Slovakia is handling the outbreak? *Journal of Diabetes Science and Technology*, 14(4), pp. 729–730. <https://doi.org/10.1177/1932296820930269>.
- Drinóczi, T. and Bień-kacała, A. (2020). Covid-19 in Hungary and Poland: Extraordinary situation and illiberal constitutionalism. *The Theory and Practice of Legislation*, 8(1-2), pp. 171–192. <https://doi.org/10.1080/20508840.2020.1782109>
- EU POM (2020). UnCertainty/EU/Hope: Public opinion in times of COVID-19. At <[https://www.europarl.europa.eu/at-your-service/files/be heard/eurobarometer/2020/public_opinion_in_the_eu_in_time_of_coronavirus_report/report/en-covid19-survey-report.pdf](https://www.europarl.europa.eu/at-your-service/files/be%20heard/eurobarometer/2020/public_opinion_in_the_eu_in_time_of_coronavirus_report/report/en-covid19-survey-report.pdf)>, accessed 18 November 2020.
- Ferguson, N. M. et al (2020). Impact of non-pharmaceutical interventions to reduce COVID-19 mortality and healthcare demand. Imperial College London. doi: 10.25561/77482
- Filonchuk, M., Hurynovich, V. and Yan, H. (2020). Impact of Covid-19 lockdown on air quality in Poland, Eastern Europe. *Environmental Research*, 198, 110454. <https://doi.org/10.1016/j.envres.2020.110454>
- Gerbery, D. (2020). Slovakia's responses to the COVID-19 outbreak in the fields of employment and social protection. *ESPN Flash Report 2020/53*. At <<file:///C:/Users/USER/Downloads/ESPN%20-%20Flash%20report%202020-%2053%20-%20SK%20-%20August%202020.pdf>>, accessed 10 December 2020.
- Gezgüç, Gözde M. and Duman, D. (2020). Pandemiyle mücadele ve siyasi liderlerin tutumları: ABD, Almanya, Brezilya ve Yeni Zelanda karşılaştırması. *Avrasya Sosyal ve Ekonomi Araştırmaları Dergisi*, 7(7), pp. 253–275
- GOV (2020). Government of the Czech Republic. At <<https://www.vlada.cz/cz/media-centrum/aktualne/vyhlaseni-nouzoveho-stavu-180234/>>, accessed 17 April 2020) [in Czech].
- Greer, Scott L., Da Fonseca, E. M. and King, Elizabeth J. (2020). Conclusion. In L.S Greer, E.M Fonseca and E.J. King, eds, *Coronavirus politics the comparative politics and policy of COVID-19*. University of Michigan Press, pp. 615–638.
- Guasti, P. (2020). The Impact of the COVID-19 pandemic in Central and Eastern Europe-the rise of autocracy and democratic resilience. *Democratic*

- Theory, 7(2), pp. 47–60. <https://doi.org/10.3167/dt.2020.07020710.3389/feduc.2020.00103>
- Guha, A., Plzak, J. and Chovanec, M. (2020). Face to face with COVID-19: Highlights of challenges encountered in various ent practices across the Czech Republic (a national survey). *European Archives of Oto-Rhino-Laryngology*, 278(3), pp. 807–812. <https://doi.org/10.1007/s00405-020-06280-5>
- Hatchett, R. J., Mecher, C. E. And Lipsitch, M. (2007). Public Health interventions and pandemic intensity during the 1918 Influenza Pandemic. *Proceedings of the National Academy of Sciences* 104(18), pp. 7582–7587.
- Hossain, M.P. et al. (2020). The Effects of border control and quarantine measures on global spread of COVID-19. medRxiv. Preprint. <https://doi.org/10.1101/2020.03.13.20035261>
- Jaraczewski, J. (2020). An emergency by any other name? Measures against the COVID-19 pandemic in Poland. At<<https://verfassungsblog.de/an-emergency-by-any-other-name-measuresagainst-the-covid-19-pandemic-in-poland>>, accessed 10 May 2021.
- Jarynowski, A. et al. (2020). Attempt to understand public-health relevant social dimensions of Covid-19 outbreak in Poland. *Society Register*, 4(3), pp. 7–44. <https://doi.org/10.14746/sr.2020.4.3.01>
- Komenda, M. et al. (2020). Complex reporting of the COVID-19 pandemic in the Czech Republic: Use of an interactive web-based app in practice. *Journal of Medical Internet Research*, 22(5), pp. 1–10.
- Kovács, K. (2021). Hungary and the pandemic: A pretext for expanding power, *VerfBlog*. At<<https://verfassungsblog.de/hungary-and-the-pandemic-a-pretext-for-expanding-power/>>, accessed on 16 April 2021. <https://doi.org/10.17176/20210311-154209-0>
- Kovács, K. (2020). Hungary's Orbánistan: A complete arsenal of emergency powers, *VerfBlog*. At<<https://verfassungsblog.de/hungarys-orbanistan-a-complete-arsenal-of-emergency-powers>>, accessed on 16 April 2021. <https://doi.org/10.17176/20200406-131348-0>
- Kovács, A. and Zsigmond, T. (2020). Economic effects of Covid-19 on the V4 countries. At<<https://relik.vse.cz/2020/download/pdf/321-Zsigmond-Tibor-paper.pdf>>, accessed on 20 April 2020.
- Lai, S. et al. (2020). Effect of non-pharmaceutical interventions to contain COVID-19 in China. *Nature*, 585, pp. 410–413. <https://doi.org/10.1038/s41586-020-2293-x>
- Lewnard, J.A. and Lo, N. C. (2020). Scientific and ethical basis for social-distancing interventions against COVID-19. *Lancet Infectious Disease*, 20, pp. 631–633.
- Linka, K. et al. (2020). Outbreak dynamics of COVID-19 in Europe and the effect of travel restrictions, *Computer Methods in Biomechanics and Biomedical Engineering*, 23(11), pp. 710–717. <https://doi.org/10.1080/10255842.2020.1759560>
- Löblová, O. (2020). Government response to COVID-19 in the Czech Republic: February–July 2020. *Zdrowie Publiczne i Zarządzanie*, 18 (1), pp. 75–79.
- Lu, H. et al. (2020). Outbreak of pneumonia of unknown etiology in Wuhan China: The Mystery and The Miracle. *Journal of Medical Virology*, 92(4), pp. 401–402. <https://doi.org/10.1002/jmv.25678402>

- Mahase, E. (2020). China coronavirus: WHO declares international emergency as death toll exceeds 200. *BMJ*, 368. <https://doi.org/10.1136/bmj.m408>
- Markel, H. et al. (2007). Nonpharmaceutical interventions implemented by US cities during the 1918-1919 influenza pandemic. *JAMA*, 298(6), pp. 644–654.
- Matczak, M. (2020). When politics mixes with fighting the virus: Response to the COVID-19 pandemic in Poland. In P. Joyce, F. Maron and P. Sivanarain Reddy, eds. *Good Public Governance in a Global Pandemic*. Brussels: IIAS, pp. 349–357.
- McKee, M. et al. (2020). Are populist leaders creating the conditions for the spread of COVID-19? Comment on “A scoping review of populist radical right parties’ influence on welfare policy and its implications for population health in Europe”. *International Journal of Health Policy Management*, x(x), pp. 1–5. <https://doi.org/10.34172/ijhpm.2020.124>
- Merkely, B. et al. (2020). Novel coronavirus pandemic in the Hungarian population, A cross-sectional nationwide survey to support the exit policy in Hungary. *GeroScience*, 42(4), pp. 1063–1074.
- Ministry of Health (2020), Coronavirus disease COVID-19. At <<https://www.gov.si/en/topics/coronavirus-disease-covid-19/>>, accessed 24 October 2020.
- Migone, A. R. (2020). The influence of national policy characteristics on COVID-19 containment policies: A comparative analysis. *Policy Design and Practice*, 3(3), pp. 259–276. <https://doi.org/10.1080/25741292.2020.1804660>
- Nemec, J. (2020). Government transition in the time of the COVID-19 crisis: Slovak Case. *International Journal of Public Leadership*, 17(1), pp. 7–12. <https://doi.org/10.1108/IJPL-05-2020-0040>
- Nemec, J. and Spaček, D. (2020). The covid-19 pandemic and local government finance: Czech Republic and Slovakia. *Journal of Public Budgeting, Accounting & Financial Management*, 32(5), pp. 837–846. <https://doi.org/10.1108/JPBFAFM-07-2020-010>
- Newton, K., Stolle, D. and Zmerli, S. (2018). Social and political trust. In E. M. Uslaner, ed, *The Oxford Handbook of Social and Political Trust*. New York: Oxford University Press, pp. 37–56.
- Nunan, D. and Brassey, J. (2020). What is the evidence for mass gatherings during global pandemics? A rapid summary of best-available evidence. Centre Evidence-Based Medicine, Nuffield Department of Primary Care Health Sciences University of Oxford, Trip Database, pp. 1–8.
- OECD/EU. (2020), Health at a glance: Europe 2020: State of health in the EU cycle, OECD Publishing. Paris, <https://doi.org/10.1787/82129230-en>.
- OECD (2019a). State of health in the EU: Hungary country health profile 2019. At <<http://www.oecd.org/health/Country-Health-Profiles-2019-Hungary.xls>>, accessed 14 November 2020.
- OECD (2019b). State of health in the EU: Poland country health profile 2019. At <<http://www.oecd.org/health/Country-Health-Profiles-2019-Poland.xls>>, accessed 14 November 2020.
- OECD (2019c). State of health in the EU: Czechia country health profile 2019. At <<http://www.oecd.org/health/Country-Health-Profiles-2019-Czechia.xls>>, accessed 14 November 2020.
- OECD (2019d). State of health in the EU: Slovakia country health profile 2019. At <<http://www.oecd.org/health/Country-Health-Profiles-2019-Slovakia.xls>>, accessed 14 November 2020.

- Pancevski, B., and Drew, H. (2020). Poorer nations in Europe's east could teach the west a lesson on coronavirus. At <<https://www.wsj.com/articles/poorer-eastern-european-nations-could-teach-the-west-a-lesson-on-coronavirus-11586718779>>, accessed 14 December 2020.
- Patiño-Lugo, D. F. et al. (2020). Non-pharmaceutical interventions for containment, mitigation and suppression of COVID-19 infection. *Colombia Medica (Cali)*, 51(2), e-4266. <http://doi.org/10.25100/cm.v51i2.426>
- Pinkas, J. et al. (2020). Public health interventions to mitigate early spread of SARS-CoV-2 in Poland. *Medical Science Monitor*, 26, e924730.
- Pozo-Martin, F. et al. (2021). The impact of Non-Pharmaceutical interventions on COVID-19 pandemic growth in the 37 OECD member states. *European Journal of Epidemiology*, 36, pp. 629–640.
- Radio Prague International (2020). coronavirus: czechs returning from italy to stay in two-week quarantine. At <<https://english.radio.cz/coronavirus-czechs-returning-italy-stay-two-week-quarantine-8106228>>, accessed 26 October 2020.
- Röst G. et al. (2020). Early phase of the COVID-19 outbreak in Hungary and post-lockdown scenarios. *Viruses*, 12(7), p. 708. <https://doi.org/10.3390/v12070708>. PMID: 32629880; PMCID: PMC7412537.
- Sagan, A. et al. (2021). A reversal of fortune: Comparison of health system responses to COVID-19 in the Visegrad Group during the early phases of the pandemic. *Health Policy*, <https://doi.org/10.1016/j.healthpol.2021.10>.
- Scholz, J. T. (1998). Trust, taxes, and compliance. In V. Braithwaite and M. Levi, eds, *Trust and Governance*. Russell Sage Foundation: New York, NY, USA, pp. 135–166.
- Schwartz, J. (2012). Compensating for the authoritarian advantage in crisis response: A comparative case study of SARS pandemic responses in China and Taiwan. *Journal of Chinese Political Science*, 17(3), pp. 313–331. <https://doi.org/10.1007/s11366-012-9204-4>
- Slovak Spectator (2020). Three coronavirus cases confirmed in Slovakia. At <<https://spectator.sme.sk/c/22352401/three-coronavirus-cases-in-slovakia.html>>, accessed 1 January 2021.
- Szymczak, J. (2020). "Koronawirus w Lubuskiem. 44 godziny, dwa razy za wolno. Daleko do laboratorium" [Coronavirus in the Lubusz Voivodeship. 44 hours, a factor of two too slow. Far from the laboratory-->]. OKO.pressp (in Polish).
- Şencan, İ. and Kuzi, S. (2020). Global threat of COVID 19 and evacuation of the citizens of different countries. *Turkish Journal of Medical Science*, 50, pp. 534–543.
- Tait, R. (2020, March 30). Czechs get to work making masks after government decree. At <<https://www.theguardian.com/world/2020/mar/30/czechs-get-to-work-making-masks-after-government-decree-coronavirus>>, accessed 25 January 2021.
- Thomson, S. and Ip, E. C. (2020). COVID-19 emergency measures and the impending authoritarian pandemic. *Journal of Law and the Biosciences*, 7(1), pp. 1–33. doi:10.1093/jlb/ljaa064
- Ting, D.S.W. et al. (2020). Digital technology and COVID-19. *Nature Medicine*, 26, 459–461. <https://doi.org/10.1038/s41591-020-0824-5>
- Travica, B. (2020). Containment strategies for COVID-19 pandemic. At <SSRN: <https://ssrn.com/abstract=3604519> or <http://dx.doi.org/10.2139/ssrn.3604519>>, accessed 18 November 2020.

- Trnka, R. and Lorencova, R. (2020). Fear, anger, and media-induced trauma during the outbreak of COVID-19 in the Czech Republic. *Psychological Trauma: Theory, Research, Practice and Policy*, 12(5), pp. 546–549.
- Tyler, T. R. (2006). *Why People Obey the Law?* Princeton University Press: Princeton, NJ.
- Túri, G. and Virág, A. (2021). Experiences and lessons learned from COVID-19 pandemic management in South Korea and the V4 Countries. *Tropical Medicine and Infectious Disease*, 6(4), p. 201. <https://doi.org/10.3390/tropicalmed6040201>
- UN (2020). Policy brief: Covid-19 in an urban world. At <<https://digitallibrary.un.org>>, accessed on 10 November 2021.
- Urbanovics, A., Sasvári, P. and Teleki, B. (2021). Evaluation of the COVID-19 regulations in the Visegrad Group. *Transforming Government: People, Process and Policy*. <https://doi.org/10.1108/TG-08-2020-0228>
- US News (2020, March 4). Poland reports first coronavirus case – health minister. At <<https://www.usnews.com/news/world/articles/2020-03-04/poland-reports-first-coronavirus-case-health-minister>>, accessed 26 November 2020.
- Wielechowski, M., Czech, K. and Grzeda, L. (2020). Decline in mobility: Public transport in Poland in the time of the Covid-19. *Pandemic Economies*, 8(78), pp. 1–24. <https://doi.org/10.3390/economies8040078>.
- WHO (2020a). Novel Coronavirus Situation Report. At <<https://www.who.int/docs/defaultsource/coronaviruse/situationreports/20200122-sitrep-2-2019-ncov.pdf>>, accessed 5 December 2020.
- WHO (2020b). Coronavirus disease (COVID-19) advice for the public. At <<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>> accessed 15 March 2021.
- WHO (2019). Non-pharmaceutical public health measures for mitigating the risk and impact of pandemic and pandemic influenza. Licence: CC BY-NC-SA 3.0 IGO.
- Wojtas, K. and Walecka, K. (2020). The pandemic of Covid-19 – A catalyst for changes in the countries of East Central Europe. *Online Journal Modelling The New Europe*, 34, pp. 184–205. <https://doi.org/10.24193/OJMNE.2020.34.10>
- Wong, D.W.S and Li, Y. (2020). Spreading of COVID-19: Density matters. *PLoS ONE*, 15(12): e0242398. <https://doi.org/10.1371/journal.pone.0242398>
- Zhu, N. et al. (2020). A Novel Coronavirus from patients with pneumonia in China, 2019. *New England Journal of Medicine*, 382(8), pp. 727–733. DOI: 10.1056/NEJMoa2001017
- Zu, Z.Y. et al. (2020). Coronavirus disease 2019 (COVID-19): A perspective from China. *Radiology*, 296, pp. E15–E26. <https://doi.org/10.1148/radiol.2020200490>
- www.koronavirus.gov.hu (Accessed 20 November 2020).
- www.who.int (Accessed 13 November 2020).
- <https://ourworldindata.org/coronavirus-data-explorer> (Accessed 28 November 2020).
- <https://databank.worldbank.org/home.aspx> (Accessed 28 December 2020).
- www.nnk.gov.hu/index.php/koronavirus-tajekoztato/549-opportunities-to-reduce-contact-numbers-community-events-in-relation-to-covid-19-virus-infection#merkel (Accessed 28 November 2020).
- [https://www.paho.org/disasters/dmdocuments/RespToolKit_11_Tool%2004_NoPharmaceuticalInterventions\(NPIs\).pdf](https://www.paho.org/disasters/dmdocuments/RespToolKit_11_Tool%2004_NoPharmaceuticalInterventions(NPIs).pdf) (Accessed 10 February 2021).